BID INSTRUCTIONS

متطلبات المشاركة في المزاد

Revision 5.0

Auction of Ibn Rushd retired assets in closed envelopes	مزاد شركة ابن رشد لبيع المعامل بالأظرف المغلقة

Auction Dates		مواعيد المزاد	
Last Day for Site visits & Inspection	Wednesday	13th Dec 2023	اخر يوم لمعاينة الموقع
Last Day to Submit Bids by closed Envelops	Saturday	16th Dec 2023	أخر موعد لتقديم العطاءات بواسطة الاظرف المغلقة
Bids Open Date	Sunday	17th Dec 2023	تاريخ فتح العطاءات
Announce Bids results	Sunday	31th Dec 2023	اعلان نتائج العطاءات
Bids by closed Envelops to be submitted to the following address:		تسلم العطاءات بالأظرف المقفلة الى العنوان التالي:	
Warehouse Integration Network Company EVT (Engineering Valley Tower) 12th Floor, Building # 3072, Postal Code 35525 AL Madinah Al Munawara Street, Jubail City, Saudi Arabia M: +966 (0) 56 620 0620 T: +966 (0) 13 347 9300 F: +966 (0) 13 347 9301		**شركة المخازن المتكاملة المحدودة:** برج وادي الهندسة، الطابق 12 مبنى رقم 3072 الرمز البريدي 35525 شارع المدينة المنورة، مدينة الجبيل، المملكة العربية السعودية جوال: +966 (0) 56 620 0620 هاتف: +966 (0) 13 347 9300 فاكس: +966 (0) 13 347 9301	

Introduction	مقدمة
Arabian Synthetic Fiber Company (Ibn Rushd), a subsidiary of SABIC, in cooperation with Warehousing Integrated Company (WIN), is pleased to organize an auction for the sale of Ibn Rushd's Retired Plants in closed envelopes.	يسر الشركة العربية للألياف الصناعية (ابن رشد)، إحدى الشركات التابعة لشركة (سابك) وبالتعاون مع شركة المخازن المتكاملة المحدودة أن تعلن عن تنظيم مزاد لبيع المصانع المقفلة التابعة لها بالأظرف المغلقة.
The Retired Plants consists of several units segregated into 8 zones. All zones are sold at once, and the sale includes demolition, removal, and transportation outside the site within 6 to 14 months.	تتكون المصانع المقفلة من عدة وحدات تم تقسيمها الى **8** مناطق، وتباع المناطق مجتمعه كمنطقة واحدة والبيع يشمل الهدم والإزالة والنقل إلى خارج الموقع خلال 6-14 شهر
The Retired assets offered for sale are not guaranteed for condition, quality or quantity, and therefore inspection and preview is the basis of the sale.	الوحدات والمواد المعروضة للبيع ليست ضمانا للحالة أو الجودة أو الكمية، وعليه الفحص والمعاينة هو أساس البيع.
To arrange an appointment to visit the site for inspection and for more details to know the terms and conditions of sale, please contact the organizer Warehouse Integration Network Company (WIN) on below contacts	لترتيب موعد لزيارة الموقع للمعاينة ولمزيد من التفاصيل لمعرفة شروط وأحكام البيع، يرجى التواصل مع المنظم شركة المخازن المتكاملة على المعلومات المذكورة أدناه

Site Visits Requirements	شروط زيارة الموقع للمعاينة
1. All bidders and visitors visiting the site must wear safety gears including safety shoes, safety helmets and safety clothing and adhere to safety instructions	1. يجب على جميع مقدمي العطاءات والزوار الذين يزورون الموقع ارتداء معدات السلامة بما في ذلك أحذية السلامة وخوذة السلامة وملابس السلامة والتقيد بتعليمات السلامة
2. Bidder shall schedule sufficient visits to ensure full knowledge of retired assets offered in each zone	2. يجب على جميع مقدمي العطاءات ترتيب عدد كاف من الزيارات لمعاينة الأصول المعروضة للبيع تحت كل بند بما ينفي الجهالة

Bidders shall submit two bids each in a sealed envelop	**يجب على مقدمي العطاءات تقديم عرضين كل منهما في مظروف مغلق :**
A. Commercial proposal	**A. العرض المالي**
1. An offer showing the purchase price of the all zones utilizing the attached form “Tender Form”. (Award to highest price, provided his technical offer is accepted)	1. عرض مبين فيه سعر شراء المناطق مجتمعه حسب النموذج المرفق "استمارة تقديم العطاء". (الترسية لأعلى سعر، بشرط قبول العرض الفني)
2. The financial offer shall be accompanied by a certified cheque in the name of Arabian Industrial Fibers Company (Ibn Rushd) with the amount of one million Saudi riyal (1,000,000 SAR) as a security deposit to enter the auction.	2. يجب أن يرفق مع العرض المالي مبلغ التامين بشيك مصدق باسم الشركة العربية للألياف الصناعية (ابن رشد) مقداره مليون ريال (1,000,000 ريال) كتأمين لدخول المزاد
3. Successful bidder shall submit a Site Evacuation guarantee amounting to 10% of the bid value, in a form of Bank Guarantee valid for 24 months at the time of signing the sale contract with the company	3. يجب على مقدم العطاء الفائز عند توقيع عقد البيع مع الشركة تقديم ضمان إخلاء الموقع وقدره 10٪ من قيمة العطاء، في شكل ضمان بنكي صالح لمدة 24 شهرا
4. The financial offer shall be accompanied by a certified cheque in the name of the auction organizer “Warehouse Integration Company” with the amount of 2.5% of the submitted bid value + VAT representing the auction commission.	4. يجب أن يرفق مع العرض المالي مبلغ عمولة المزاد بشيك مصدق باسم الشركة المنظمة للمزاد "شركة المخازن المتكاملة المحدودة" مقداره **2.5**% من قيمة العطاء **+** ضريبة القيمة المضافة
B. Technical Proposal	**B. العرض الفني**
Shall include the followings: 1. Demolishing capabilities: company profile, reference demolishing projects conducted, demolishing equipment, any applicable certification and credential in demolishing, construction, and safety…etc.	ويشمل على ما يلي: 1. القدرة الفنية في مجال إزالة الأصول والمعامل الصناعية: ارفاق مقدمة عن الشركة وأعمالها ومشاريعها المماثلة ونبذة عن المعدات والشهادات والرخص الخاصة بنطاق العمل.
2. As applicable, a table listing the alliances and/or subcontractors who are going to work with the bidder in the demolishing and transfer activities indicating the contractual relation with each.	2. حسب الحالة، جدول يبين الشركات الزميلة و/أو المقاولين بالباطن المتعاونين مع المشتري لإتمام أعمال الهدم والإزالة، مع إيضاح العلاقة التعاقدية مع كل منهم.
3. High level Demolishing Plan	3. خطة إزالة مبدئية .
4. Compliance table for all Scope of Work clauses.	4. جدول يوثق الالتزام بجميع بنود نطاق العمل.

5. Compliance table for all IR Demolishing EHSS Guideline latest revision clauses.	5. جدول يوثق الالتزام بجميع بنود أحدث نسخة من إرشادات السلامة والصحة والبيئة لمشروع الازالة.
6. Compliance table for the basic terms in this bid instruction.	6. جدول يوثق الالتزام بجميع الشروط الأساسية في متطلبات المشاركة في المزاد.

Payment & Cheques	**السداد والشيكات**
1. Interested bidders and those wishing to participate in the auction must pay the security deposits and agree to payment terms as below in order to enter the auction. Not fulfilling this requirement will result in removing the bidder from the auction.	1. يجب على مقدمي العطاءات والراغبين في المشاركة في المزاد دفع مبالغ التأمين والالتزام بباقي شروط المدفوعات كما هو مبين أدناه وهذا شرط أساسي لدخول المشتري للمزاد. عدم الالتزام بالشروط المذكورة لن يمكن المشتري من الدخول للمزاد.
2. Bidders shall issue a certified cheque in the name of Arabian Industrial Fibers Company (Ibn Rushd) as a security deposit amounting to one million Saudi riyal (1,000,000 SAR) as a security to enter the auction, provided that it is returned to all bidders after concluding the auction. (Attached to the Commercial Proposal)	2. على مقدمي العطاءات إصدار شيك مصدق بمبلغ التامين مليون ريال (1,000,000 ريال) باسم الشركة العربية للألياف الصناعية (ابن رشد) كتأمين لدخول المزاد على أن يعاد بعد انتهاء المزاد لجميع المتقدمين. (يرفق مع العرض المالي)
3. Successful bidder shall submit Site Evacuation guarantee (10% of the bid value) , in a form of Bank Guarantee valid for 24 months at the time of signing the sale contract with the company. The Bank Guarantee is refundable upon successful completion of demolishing and site evacuation.	3. يجب على مقدم العطاء الفائز تقديم ضمان إخلاء الموقع (10٪ من قيمة العطاء)، في شكل ضمان بنكي صالح لمدة 24 شهرا وذلك عند توقيع عقد البيع مع الشركة على أن يعاد بعد إتمام عمليات الاخلاء بشكل مرضي للشركة
4. Successful Bidder shall pay the full amount of the bid + VAT within 5 days of issuing the invoice, by a bank transfer or a certified cheque in the name of Arabian Industrial Fibers Company (Ibn Rushd). Contract of Sale with the Company will be signed upon payment	4. يجب على مقدم العطاء الفائز سداد كامل مبلغ العطاء + ضريبة القيمة المضافة خلال 5 أيام من اصدار الفاتورة بتحويل بنكي أو شيك مصدق باسم الشركة العربية للألياف الصناعية (ابن رشد)، ويتم توقيع عقد البيع مع الشركة عند ذلك
5. Bidders shall issue a certified cheque in the name of the auction organizer “Warehouse Integration Company” with the amount of 2.5% of the submitted bid value + VAT representing the auction commission. Provided that it is returned if the offer is not awarded. (Attached to the Commercial Proposal	5. على مقدمي العطاءات إصدار شيك مصدق بمبلغ عمولة المزاد مقداره **2.5%** من قيمة العطاء + ضريبة القيمة المضافة باسم الشركة المنظمة للمزاد "شركة المخازن المتكاملة المحدودة" على أن يعاد في حالة عدم إرساء العرض. (يرفق مع العرض المالي)

Basic Terms	شروط أساسية
1. **Bidder does not complete the remaining payments after notification of winning** :In the event that the Bidder does not complete the full purchase payment in line with clause **4** of Payment & Cheques section above, then his holding deposit mentioned in clause 2 above shall not refundable.	.1 **عدم استكمال مقدم العطاء الدفعات المتبقية بعد إخطاره بالفوز:** في حالة عدم إكمال مقدم العطاء سداد كامل دفعة الشراء بما يتماشى مع البند 4 من قسم الدفع والشيكات أعلاه، فإن شيك التامين المذكور في البند 2 من قسم الدفع والشيكات أعلاه لن يسترد له.
2. **Agreement to enter in a Contract of Sale with Ibn Rushd:** Prior to a winning bid being accepted by Ibn Rushd, the Bidder shall enter into a contract with Ibn Rushed to perform the Demolishing. The Contract of Sale shall include the demolishing terms and conditions, this Bid Instruction, Scope of Work, and Ibn Rushed Demolishing EHSS Guideline.	.2 **الاتفاق على إبرام عقد بيع مع ابن رشد:** قبل قبول ابن رشد للعطاء الفائز، يجب على مقدم العطاء توقيع عقد مع ابن رشد لتنفيذ عملية الهدم والازالة والنقل. و سيتضمن عقد البيع الشروط والأحكام المتعلقة بالهدم والإزالة و كما سيتضمن على وجه الخصوص متطلبات المشاركة في المزاد، ونطاق العمل، ودليل شركة ابن رشد للبيئة والصحة والسلامة والأمن الخاص بعمليات الهدم و الازالة و النقل.
3. Assets Utilization: a. All Assets under the Auction are sold as scrap. Re-use of Assets is a sole responsibility of the winning Bidder. SABIC/IBN RUSHD, their licensors and Assets' manufacturers shall not be liable for any damages resulted from re-use of the sold Asset by the winning Bidder or others. b. All Assets under the Auction are sold on an "As is," "Where is," "With all faults" basis and without any representation or warranty of any kind by SABIC/IBN RUSHD.	**.3 استخدام الأصول** : a. تباع جميع الأصول قيد المزاد كخردة .تقع مسؤولية إعادة استخدام الأصول على عاتق مقدم العطاء الفائز . لن تكون سابك / ابن رشد ومرخصوها ومصنعو الأصول مسؤولين عن أي أضرار ناتجة عن إعادة استخدام الأصل من قبل مقدم العطاء الفائز أو غيره . b. تباع جميع الأصول على أساس" كما هي" و "أين هي "و" مع جميع العيوب "ودون أي مسئولية أو ضمان من أي نوع من قبل سابك / ابن رشد.
4. **Winning Bidder does not complete the Site Evacuation:** In the event that the Bidder does not complete the Demolishing of his purchased Assets and Site Evacuation as per agreed duration from the award date or in the event of major delay in which Bidder cannot meet the approved Demolishing and Site Evacuation plan, then Company has the right, after officially notifying the failed bidder, to stop the bidder and resell the Assets and demolish them through a new bidder or a 3rd party.	.4 **عدم إكمال مقدم العطاء الفائز إخلاء الموقع:** في حالة عدم إكمال مقدم العطاء لهدم أصوله المشتراة وإخلاء الموقع في غضون المدة المتفق عليها من تاريخ الترسية أو في حالة حدوث تأخير كبير لا يستطيع فيه مقدم العطاء تلبية خطة الهدم وإخلاء الموقع المعتمدة، يحق للشركة، بعد إخطار مقدم العطاء المتعثر رسميا، إيقاف مقدم العطاء وإعادة بيع الأصول الموجودة وهدمها من خلال مقدم عطاء جديد أو طرف ثالث
5. **Bidder does not comply with EHSS requirements set out in the endorsed EHSS Plan:** In the event that the bidder failed to comply with the endorsed EHSS plan, he will be officially notified and given the chance to correct. Third time failure event will be treated as clause 4 above.	.5 **عدم امتثال مقدم العطاء لمتطلبات البيئة والصحة والسلامة والأمن المنصوص عليها في خطة البيئة والصحة والسلامة والأمن المعتمدة:** في حالة فشل مقدم العطاء في الامتثال لخطة البيئة والصحة والسلامة والأمن المعتمدة، سيتم إخطاره رسميا ومنحه الفرصة للتصحيح. و في حال تكرر الفشل للمرة الثالثة فانه سيتم التعامل معه كما في البند 4 أعلاه

Attachments	المرفقات
1. Scope of Work	1. نطاق العمل
2. Ibn Rushd Demolishing EHSS Guideline	2. دليل شركة ابن رشد للبيئة والصحة والسلامة والأمن الخاص بعمليات الهدم والازالة والنقل
3. Environmental Management and Monitoring Plan for IBN RUSHD (EMMP)	3. خطة الإدارة والمراقبة البيئية لابن رشد (**EMMP**)
4. Transfer of Responsibilities (TOR)	4. نقل المسؤوليات (**TOR**)
5. Transfer of Responsibilities (TOR) Handback	5. إعادة استلام المسؤوليات (**TOR**)

Tender Form	**استمارة تقديم العطاء**
Messrs. / Arabian Industrial Fibers Company (Ibn Rushd) Greetings, After thorough review and inspection of the retired assets which has been offered for auction, I offer you the following price, excluding tax and auction commission	السادة/ الشركة العربية للألياف الصناعية (ابن رشد) تحية طيبة، بعد المعاينة والاطلاع على الأصول / المعامل التي تم عرضها للبيع بالمزاد حسب البيانات المذكورة فإنني أتقدم لكم بالسعر التالي غير شامل الضريبة وعمولة المزاد.

Zone Number: all Zones (1-2-3-4-5-6-7-8)		**رقم المنطقة :** جميع المناطق (1-2-3-4-5-6-7-8)	
Insurance Cheque	☐	☐	شيك التامين
Auction Commission Cheque	☐	☐	شيك عمولة المزاد
Price in number			السعر رقما:
Price in writing			السعر كتابة

Confession	**إقرار**
I acknowledge that I have fulfilled all the conditions in the Bid Instruction document and its attachments and have completed the payment of the specified security deposit, and the auction commission amount in form of certified cheques. I have inspected the assets referred to above prior to purchasing them and have purchased them in their current condition. I acknowledged that the auctioneer and Ibn Rushd are relieved from any liability regarding the assets condition. I am aware and committed to pay the VAT 15% payment once I win the bid.	أقر بأني استوفيت كافة الشروط المذكورة في وثيقة متطلبات المشاركة في المزاد ومرفقاتها واتممت دفع مبلغ التامين المحدد ومبلغ عمولة المزاد بتسليم شيكات مصدقة بالمبالغ. وأنى قد قمت بمعاينة المواد المشار إلى بياناتها أعلاه قبل شرائها وقد اشتريتها بعد المعاينة بحالتها الراهنة، وأقر بخلو مسؤولية منظم المزاد وشركة ابن رشد. وأنا على علم وملتزم بدفع ضريبة القيمة المضافة ١٥ ٪ في حال فوزي بالمزايدة

Name			الاسم:
Signature			التوقيع:
Mobile			الجوال:
ID # or Commercial Registration CR #			رقم السجل التجاري / الهوية:
Stamp			الختم:

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Attachments

(1)

نطاق العمل
Scope of Work

SCOPE OF WORK

ZONE 1

Aromatic plant (Tank farm)

Revision 3.0

TABLE OF CONTENT

1. ABBREVIATION, DEFINITION, AND INTERPRETATION

AG/UG	Above ground / Underground.
Contractor	The winning buyer of a particular retired assets zone.
Demolition Plan	A document that explains the correct procedures, safety precautions and work requirements of a project.
EHSS	Environment, Health, Safety & Security.
EMMP	Environment Management & Monitoring Plan.
EMS	Environment Management System.
Free Land	The area free from all the UG/AG materials that have been removed.
HCIS	High Commission Industrial Security.
IR	IBN RUSHD Co. A SABIC Affiliate.
ISO	International organization for Standardization.
OH&S	Occupational, Health & Safety.
Principal Contractor	It refers to "WIN Co." as a contractor appointed by IBN RUSHD to organize, conduct the auction, and manage Contractor demolishing activities.
QMS	Quality Management System.
RCER	Royal Commission Environment Regulations.
SAF	Safety and Fire Directives.
SEC	Security Directives.
WIN	Warehouse Integration Company.
Work Permit	A written document authorizing a person or a group to perform work.

2. INTRODUCTION

IBN RUSHD intends to demolish their retired assets to make it free land. Retired assets have been segregated into 8 zones as shown in FIGURE 01; the scope of work includes, as minimum, demolition, removal, and transportation of the retired assets outside IBN RUSHD site. The objective of Scope of Work is to ensure that activities are performed in accordance with the guidelines and standards set forth or referred therein, resulting in timely completion of retried assets demolition.

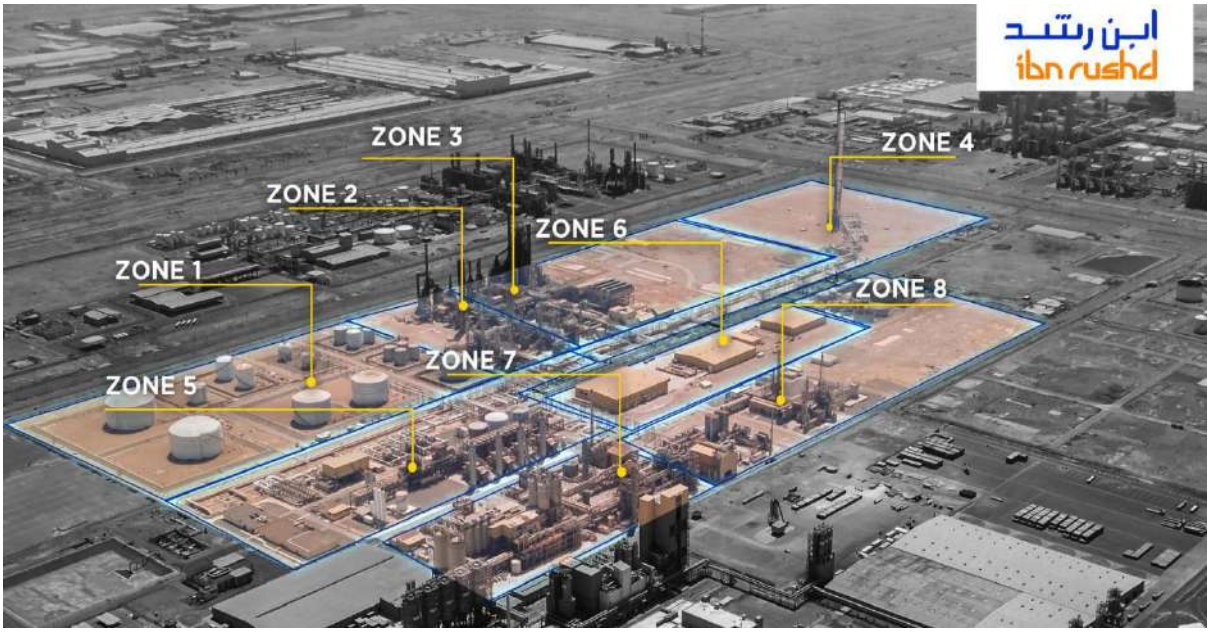


FIGURE 01

3. PURPOSE

The objective of the Scope of Work is to ensure that activities are performed according to demolition plan at zone 1 with elimination of all hazards. All activities shall be evaluated to ensure conformity with legal obligations and IBN RUSHD requirements.

4. GENERAL EHSS REQUIREMENT

4.1 Contractor shall develop and use their own Work Permit system, approved by principal Contractor/IBN RUSHD and in line with the IR Demolishing EHSS Guidelines (attachment 01) to perform their job safely.

4.2 Contractor is responsible for all EHSS requirements for their staff and any subcontractor staff.

4.3 From the Zone handover and transfer of responsibility date until the work completion, Contractor shall assume all risks and liabilities in connection with the project works in the respective zone.

4.4 All permits, reports, and other governmental authorizations shall be developed/obtained by Contractor, as deemed necessary to perform the work.

4.5 Detailed EHSS requirements are elaborated in IR Demolishing EHSS Guideline and to be fully met.

4.6 Emergency Evacuation to comply with IR Demolishing EHSS Guidelines

5. SCOPE OF WORK

5.1 Contractor shall develop Demolition Plan approved by Principal Contractor / IBN RUSHD which shall include their EHSS plan, Organization, Work Permit system, execution schedule, sequence of material transportation, and demolishing method. The Demolishing Plan shall be submitted after Contractor selection.

5.2 Method statement must define step-by-step plan on how the demolition Contractor intends to safely demolish buildings, structures, process units or other facilities. It should be developed following careful planning of each stage of the demolition, from mobilization to demobilization.

5.3 Contractor shall erect a fence for their allocated zone area and control the zone access accordingly.

5.4 Contractor shall ensure electrical and mechanical isolation of assets prior to commencement of the demolishing activities.

5.5 Contractor shall ensure assets are free of hazardous material prior to commencement of demolishing activities.

5.6 The demolition work would involve the removal of all aboveground and underground assets and facilities from the zone.

5.7 Contractor shall ensure all assets and tools used to carry out the scope have a valid inspection and testing certification.

5.8 Contractor shall transport all the retired assets from the allocated zone to outside IBN RUSHD site.

5.9 Contractor shall arrange all facilities required for their team in the zone to carry out the scope under this contract not limited to the followings:

- 5.9.1 Offices portable cabins.
- 5.9.2 Telecommunication.
- 5.9.3 Toilets.
- 5.9.4 Transportation and others.

5.10 Contractor shall arrange all required utilities not limited to the followings:

- 5.10.1 Electrical Power.
- 5.10.2 Water.
- 5.10.3 Sanitary.
- 5.10.4 Compressed Air.

6. ZONE OVERVIEW

FIGURE 02

7. STANDARDS/GUIDELINES

Followings are the applicable guidelines for Contractors:

7.1 IR Demolishing EHSS Guidelines.
7.2 ISO 9001:2015 QMS.
7.3 ISO 45001:2018 OH&S.
7.4 ISO 14001:2015 EMS.
7.5 RCER 2015.
7.6 HCIS (SAF, SEC).

8. WASTE DISPOSAL REQUIREMENTS

8.1 Contractor shall remove, segregate, transport, and dispose of the available and generated waste from the demolition activity in accordance to RCER and EMMP (Attachment 02).

8.2 Contractor shall not be relieved from removal of any trapped or residual chemical waste found during the demolishing activities.

9. CONTRACTOR SITE OFFICES AND LOGISTICS

9.1 Contractor shall provide their own zone Site Office Layout and Traffic Management Plan approved by Principal Contractor and IBN RUSHD.

10. HOUSEKEEPING

"A PLACE FOR EVERYTHING AND EVERTHING IN ITS PLACE"

10.1 Contractor shall be responsible for maintaining a good standard of housekeeping and cleanliness at the worksite and their temporary facilities.

10.2 Planned maintenance and proper segregation of all tools and equipment's shall be maintained all the times in the project site.

10.3 Access and egress shall be maintained to prevent slips, trips and falls in the project site.

10.4 Housekeeping shall also include the ultimate disposal of generated waste on a regular basis in accordance with IR Demolishing EHSS Guidelines.

10.5 Disposal of any unauthorized, uninformed, or unapproved waste within the premises including drain channels, trenches…etc. is strictly prohibited.

10.6 Housekeeping shall be done all the time: before, during and after the job in the workplace.

10.7 Proper allocation of separate waste bins for different types of waste in the zone.

11. PROJECT TIMELINE

11.1 Contractor should demolish and remove all the zone assets in 6 to 14 months based on an approved demolition plan.

12. SPECIAL REQUIREMENT

12.1 All assets under Zone 1 are sold as scrap. Reuse of assets is the sole responsibility of Contractor. SABIC/IBN RUSHD/ Principal Contractor, their licensors, and assets manufacturers shall not be liable for any damages resulting from reuse of sold assets by Contractor or others.

12.2 Assets not for sale are marked in the field and shall be excluded from the demolishing activities.

13. ACCEPTANCE CRITERIA

Acceptance of work shall be issued to Contractor if they meet, as a minimum, the following criteria.

13.1 Removal of all aboveground/underground retired assets in the zone.
13.2 Backfilling and levelling the area.
13.3 Completing the job within the approved demolishing plan time frame.
13.4 Completing all regulatory requirements.
13.5 Removal of all Contractor's facilities and zone fence.
13.6 Handover the zone as free land to IBN RUSHD.

14. WORKING HOURS

14.1 Working hours shall be 6 Days x 12 Hours in accordance with IR Demolishing EHSS Guidelines.

15. AREA SPECIFIC DEMOLISHING GUIDELINES

15.1 A separate method statement for high elevation above 30m assets and structure demolishing shall be submitted and approved by Principal Contractor and IBN RUSHD.

16. ATTACHMENT

16.1 IR Demolishing EHSS Guidelines.
16.2 EMMP.

~ End of Document ~

SCOPE OF WORK

ZONE 2

1st Part of Aromatic Plant

Revision 3.0

TABLE OF CONTENT

1. ABBREVIATION, DEFINITION, AND INTERPRETATION

AG/UG	Above ground / Underground.
Contractor	The winning buyer of a particular retired assets zone.
Demolition Plan	A document that explains the correct procedures, safety precautions and work requirements of a project.
EHSS	Environment, Health, Safety & Security.
EMMP	Environment Management & Monitoring Plan.
EMS	Environment Management System.
Free Land	The area free from all the UG/AG materials that have been removed.
HCIS	High Commission Industrial Security.
IR	IBN RUSHD Co. A SABIC Affiliate.
ISO	International organization for Standardization.
OH&S	Occupational, Health & Safety.
Principal Contractor	It refers to "WIN Co." as a contractor appointed by IBN RUSHD to organize, conduct the auction, and manage Contractor demolishing activities.
QMS	Quality Management System.
RCER	Royal Commission Environment Regulations.
SAF	Safety and Fire Directives.
SEC	Security Directives.
WIN	Warehouse Integration Company.
Work Permit	A written document authorizing a person or a group to perform work.

2. INTRODUCTION

IBN RUSHD intends to demolish their retired assets to make it free land. Retired assets have been segregated into 8 zones as shown in FIGURE 01; the scope of work includes, as minimum, demolition, removal, and transportation of the retired assets outside IBN RUSHD site. The objective of Scope of Work is to ensure that activities are performed in accordance with the guidelines and standards set forth or referred therein, resulting in timely completion of retried assets demolition.

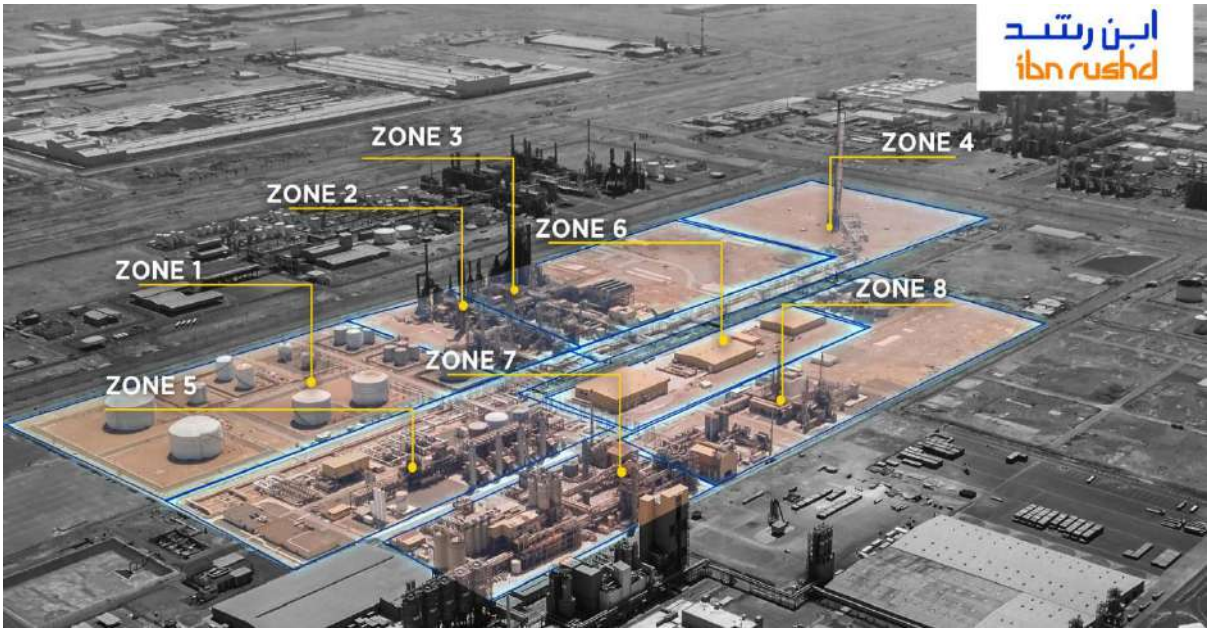


FIGURE 01

3. PURPOSE

The objective of the Scope of Work is to ensure that activities are performed according to demolition plan at zone 2 with elimination of all hazards. All activities shall be evaluated to ensure conformity with legal obligations and IBN RUSHD requirements.

4. GENERAL EHSS REQUIREMENT

4.1 Contractor shall develop and use their own Work Permit system, approved by Principal Contractor/IBN RUSHD and in line with the IR Demolishing EHSS Guidelines (attachment 01) to perform their job safely.

4.2 Contractor is responsible for all EHSS requirements for their staff and any subcontractor staff.

4.3 From the Zone handover and transfer of responsibility date until the work completion, Contractor shall assume all risks and liabilities in connection with the project works in the respective zone.

4.4 All permits, reports, and other governmental authorizations shall be developed/obtained by Contractor, as deemed necessary to perform the work.

4.5 Detailed EHSS requirements are elaborated in IR Demolishing EHSS Guideline and to be fully met.

4.6 Emergency Evacuation to comply with IR Demolishing EHSS Guidelines.

5. SCOPE OF WORK

5.1 Contractor shall develop Demolition Plan approved by Principal Contractor / IBN RUSHD which shall include their EHSS plan, Organization, Work Permit system, execution schedule, sequence of material transportation, and demolishing method. The Demolishing Plan shall be submitted after Contractor selection.

5.2 Method statement must define step-by-step plan on how the demolition Contractor intends to safely demolish buildings, structures, process units or other facilities. It should be developed following careful planning of each stage of the demolition, from mobilization to demobilization.

5.3 Contractor shall erect a fence for their allocated zone area and control the zone access accordingly.

5.4 Contractor shall ensure electrical and mechanical isolation of assets prior to commencement of the demolishing activities.

5.5 Contractor shall ensure assets are free of hazardous material prior to commencement of demolishing activities.

5.6 The demolition work would involve the removal of all aboveground and underground assets and facilities from the zone.

5.7 Contractor shall ensure all assets and tools used to carry out the scope have a valid inspection and testing certification.

5.8 Contractor shall transport all the retired assets from the allocated zone to outside IBN RUSHD site.

5.9 Contractor shall arrange all facilities required for their team in the zone to carry out the scope under this contract not limited to the followings:

- 5.9.1 Offices portable cabins.
- 5.9.2 Telecommunication.
- 5.9.3 Toilets.
- 5.9.4 Transportation and others.

5.10 Contractor shall arrange all required utilities not limited to the followings:

- 5.10.1 Electrical Power.
- 5.10.2 Water.
- 5.10.3 Sanitary.
- 5.10.4 Compressed Air.

6. ZONE OVERVIEW

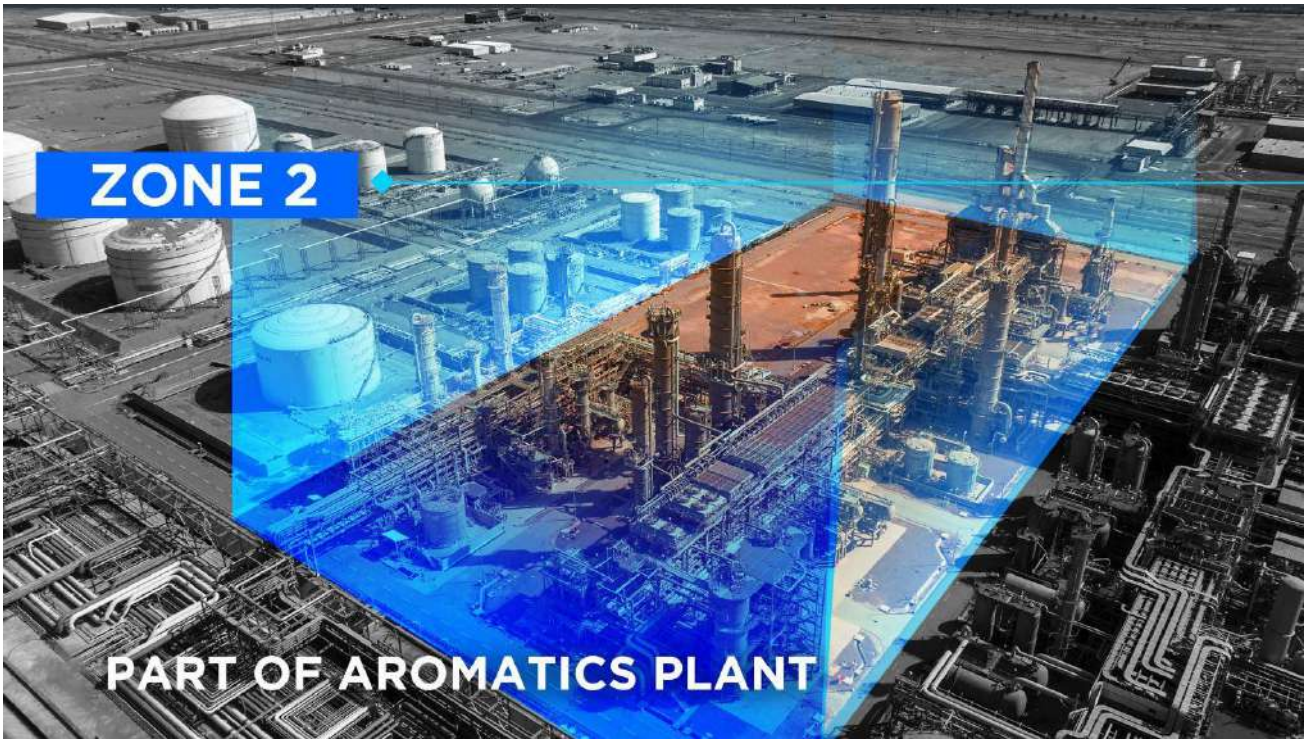


FIGURE 02

7. STANDARDS/GUIDELINES

Followings are the applicable guidelines for Contractors:

7.1 IR Demolishing EHSS Guidelines
7.2 ISO 9001:2015 QMS.
7.3 ISO 45001:2018 OH&S.
7.4 ISO 14001:2015 EMS.
7.5 RCER 2015.
7.6 HCIS (SAF, SEC).

8. WASTE DISPOSAL REQUIREMENTS

8.1 Contractor shall remove, segregate, transport, and dispose of the available and generated waste from the demolition activity in accordance to RCER and EMMP (attachment 02).

8.2 Contractor shall not be relieved from removal of any trapped or residual chemical waste not mentioned in the table. The known chemical waste available in the zone are listed below:

Waste (Chemicals, catalyst..etc.)	Equipment Number	Total Quantity (Ton) Approx.
ADS-37 Parex Adsorbent	53-D-01	283
ADS-37L Parex Adsorbent		11
ADS-37 Parex Adsorbent	53-D-02	283
ADS-37L Parex Adsorbent		11

9. CONTRACTOR SITE OFFICES AND LOGISTICS

9.1 Contractor shall provide their own zone Site Office Layout and Traffic Management Plan approved by Principal Contractor and IBN RUSHD.

10. HOUSEKEEPING

"A PLACE FOR EVERYTHING AND EVERTHING IN ITS PLACE"

10.1 Contractor shall be responsible for maintaining a good standard of housekeeping and cleanliness at the worksite and their temporary facilities.

10.2 Planned maintenance and proper segregation of all tools and equipment shall be maintained all the times in the project site.

10.3 Access and egress shall be maintained to prevent slips, trips and falls in the project site.

10.4 Housekeeping shall also include the ultimate disposal of generated waste on a regular basis in accordance with IR Demolishing EHSS Guidelines.

10.5 Disposal of any unauthorized, uninformed, or unapproved waste within the premises including drain channels, trenches...etc. is strictly prohibited.

10.6 Housekeeping shall be done all the time: before, during and after the job in the workplace.

10.7 Proper allocation of separate waste bins for different types of waste in the zone.

11. PROJECT TIMELINE

11.1 Contractor should demolish and remove all the zone assets in 6 to 14 months based on an approved demolition plan.

12. SPECIAL REQUIREMENT

12.1 All assets under Zone 2 are sold as scrap. Reuse of assets is the sole responsibility of Contractor. SABIC/IBN RUSHD/Principal Contractor, their licensors, and assets manufacturers shall not be liable for any damages resulting from reuse of sold assets by Contractor or others.

12.2 Assets not for sale are marked in the field and shall be excluded from the demolishing activities.

13. ACCEPTANCE CRITERIA

Acceptance of work shall be issued to Contractor if they meet, as a minimum, the following criteria.

13.1 Removal of all aboveground/underground retired assets in the zone.

13.2 Backfilling and levelling the area.

13.3 Completing the job within the approved demolishing plan time frame.

13.4 Completing all regulatory requirements.

13.5 Removal of all Contractor's facilities and zone fence.

13.6 Handover the zone as free land to IBN RUSHD.

14. WORKING HOURS

14.1 Working hours shall be 6 Days x 12 Hours in accordance with IR Demolishing EHSS Guidelines.

15. AREA SPECIFIC DEMOLISHING GUIDELINES

15.1 A separate method statement for high elevation above 30m assets and structure demolishing shall be submitted and approved by Principal Contractor and IBN RUSHD.

16. ATTACHMENTS

16.1 IR Demolishing EHSS Guidelines.

16.2 EMMP.

~ End of Document ~

SCOPE OF WORK

ZONE 3

2nd Part of Aromatic Plant

Revision 3.0

TABLE OF CONTENT

1. ABBREVIATION, DEFINITION, AND INTERPRETATION

AG/UG	Above ground / Underground.
Contractor	The winning buyer of a particular retired assets zone.
Demolition Plan	A document that explains the correct procedures, safety precautions and work requirements of a project.
EHSS	Environment, Health, Safety & Security.
EMMP	Environment Management & Monitoring Plan.
EMS	Environment Management System.
Free Land	The area free from all the UG/AG materials that have been removed.
HCIS	High Commission Industrial Security.
IR	IBN RUSHD Co. A SABIC Affiliate.
ISO	International organization for Standardization.
OH&S	Occupational, Health & Safety.
Principal Contractor	It refers to "WIN Co." as a contractor appointed by IBN RUSHD to organize, conduct the auction, and manage Contractor demolishing activities.
QMS	Quality Management System.
RCER	Royal Commission Environment Regulations.
SAF	Safety and Fire Directives.
SEC	Security Directives.
WIN	Warehouse Integration Company.
Work Permit	A written document authorizing a person or a group to perform work.

2. INTRODUCTION

IBN RUSHD intends to demolish their retired assets to make it free land. Retired assets have been segregated into 8 zones as shown in FIGURE 01; the scope of work includes, as minimum, demolition, removal, and transportation of the retired assets outside IBN RUSHD site. The objective of Scope of Work is to ensure that activities are performed in accordance with the guidelines and standards set forth or referred therein, resulting in timely completion of retried assets demolition.

FIGURE 01

3. PURPOSE

The objective of the Scope of Work is to ensure that activities are performed according to demolition plan at zone 3 with elimination of all hazards. All activities shall be evaluated to ensure conformity with legal obligations and IBN RUSHD requirements.

4. GENERAL EHSS REQUIREMENT

4.1 Contractor shall develop and use their own Work Permit system, approved by Principal Contractor/IBN RUSHD and in line with the IR Demolishing EHSS Guidelines (attachment 01) to perform their job safely.

4.2 Contractor is responsible for all EHSS requirements for their staff and any subcontractor staff.

4.3 From the Zone handover and transfer of responsibility date until the work completion, Contractor shall assume all risks and liabilities in connection with the project works in the respective zone.

4.4 All permits, reports, and other governmental authorizations shall be developed/obtained by Contractor, as deemed necessary to perform the work.

4.5 Detailed EHSS requirements are elaborated in IR Demolishing EHSS Guideline and to be fully met.

4.6 Emergency Evacuation to comply with IR Demolishing EHSS Guidelines.

5. SCOPE OF WORK

5.1 Contractor shall develop Demolition Plan approved by Principal Contractor / IBN RUSHD which shall include their EHSS plan, Organization, Work Permit system, execution schedule, sequence of material transportation, and demolishing method. The Demolishing Plan shall be submitted after Contractor selection.

5.2 Method statement must define step-by-step plan on how the demolition Contractor intends to safely demolish buildings, structures, process units or other facilities. It should be developed following careful planning of each stage of the demolition, from mobilization to demobilization.

5.3 Contractor shall erect a fence for their allocated zone area and control the zone access accordingly.

5.4 Contractor shall ensure electrical and mechanical isolation of assets prior to commencement of the demolishing activities.

5.5 Contractor shall ensure assets are free of hazardous material prior to commencement of demolishing activities.

5.6 The demolition work would involve the removal of all aboveground and underground assets and facilities from the zone.

5.7 Contractor shall ensure all assets and tools used to carry out the scope have a valid inspection and testing certification.

5.8 Contractor shall transport all the retired assets from the allocated zone to outside IBN RUSHD site.

5.9 Contractor shall arrange all facilities required for their team in the zone to carry out the scope under this contract not limited to the followings:

- 5.9.1 Offices portable cabins.
- 5.9.2 Telecommunication.
- 5.9.3 Toilets.
- 5.9.4 Transportation and others.

5.10 Contractor shall arrange all required utilities not limited to the followings:

- 5.10.1 Electrical Power.
- 5.10.2 Water.
- 5.10.3 Sanitary.
- 5.10.4 Compressed Air.

6. ZONE OVERVIEW

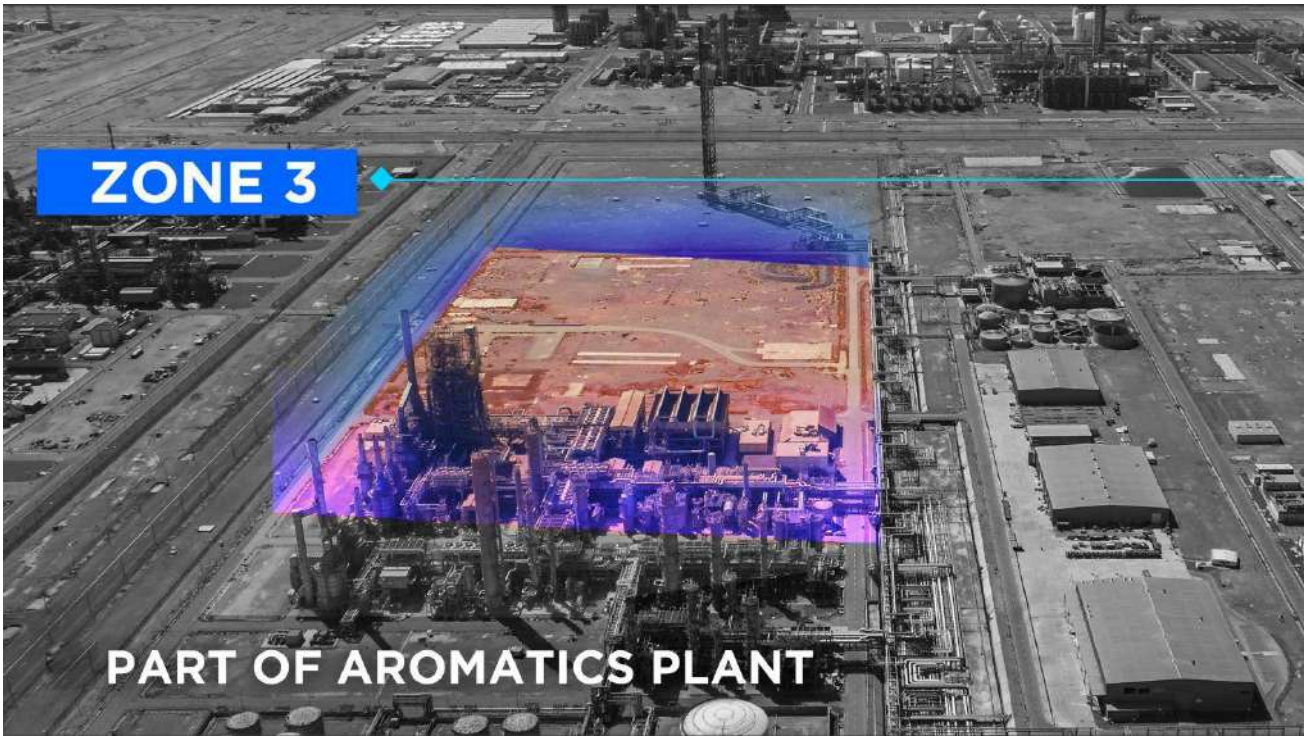


FIGURE 02

7. STANDARDS/GUIDELINES

Followings are the applicable guidelines for Contractors:

7.1 IR Demolishing EHSS Guidelines.
7.2 ISO 9001:2015 QMS.
7.3 ISO 45001:2018 OH&S.
7.4 ISO 14001:2015 EMS.
7.5 RCER 2015.
7.6 HCIS (SAF, SEC).

8. WASTE DISPOSAL REQUIREMENTS

8.1 Contractor shall remove, segregate, transport, and dispose of the available and generated waste from the demolition activity in accordance to RCER and EMMP (attachment 02).

8.2 Contractor shall not be relieved from removal of any trapped or residual chemical waste not mentioned in the table. The known chemical waste available in the zone are listed below:

Waste (chemicals, catalyst..etc)	Equipment Number	Quantity (Ton) Approx.
CLAY Grade F 24X	58-D-04 A/B (Benzene Drum)	69
Sand		7.5
CLAY Grade F 24X	56-D-03 A/B (Reformate Drum)	350
Sand		45
PSA Adsorbent H-2-10 PSA Adsorbent H-3-1 PSA Adsorbent H-15	51-D-22 A-H (Hydrogen Drum)	137.5
Activated alumina P-210	57-D-12 A/B/C	120.0
Activated alumina P-211	57-D-12 A/B/C	62.15
Mol sieve PDG-363	57-D-12 A/B/C	30.78
Active Alumina	52-D-22 A/B	4.37

9. CONTRACTOR SITE OFFICES AND LOGISTICS

9.1 Contractor shall provide their own zone Site Office Layout and Traffic Management Plan approved by Principal Contractor and IBN RUSHD.

10. HOUSEKEEPING

"A PLACE FOR EVERYTHING AND EVERTHING IN ITS PLACE"

10.1 The Contractor shall be responsible for maintaining a good standard of housekeeping and cleanliness at the worksite and their temporary facilities.

10.2 Planned maintenance and proper segregation of all tools and equipment's shall be maintained all the times in the project site.

10.3 Access and egress shall be maintained to prevent slips, trips and falls in the project site.

10.4 Housekeeping shall also include the ultimate disposal of generated waste on a regular basis in accordance with IR Demolishing EHSS Guidelines.

10.5 Disposal of any unauthorized, uninformed, or unapproved waste within the premises including drain channels, trenches... etc. is strictly prohibited.

10.6 Housekeeping shall be done all the time: before, during and after the job in the workplace.

10.7 Proper allocation of separate waste bins for different types of waste in the zone.

11. PROJECT TIMELINE

11.1 Contractor should demolish and remove all the zone assets in 6 to 14 months based on an approved demolition plan.

12. SPECIAL REQUIREMENT

12.1 All assets under Zone 3 are sold as scrap. Reuse of assets is the sole responsibility of Contractor. SABIC/IBN RUSHD/ Principal Contractor, their licensors, and assets manufacturers shall not be liable for any damages resulting from reuse of sold assets by Contractor or others.

12.2 Assets not for sale are marked in the field and shall be excluded from the demolishing activities.

13. ACCEPTANCE CRITERIA

Acceptance of work shall be issued to Contractor if they meet, as a minimum, the following criteria.

13.1 Removal of all aboveground/underground retired assets in the zone.

13.2 Backfilling and levelling the area.

13.3 Completing the job within the approved demolishing plan time frame.

13.4 Completing all regulatory requirements.

13.5 Removal of all Contractor's facilities and zone fence.

13.6 Handover the zone as free land to IBN RUSHD.

14. WORKING HOURS

14.1 Working hours shall be 6 Days x 12 Hours in accordance with IR Demolishing EHSS Guidelines.

15. AREA SPECIFIC DEMOLISHING GUIDELINES

15.1 A separate method statement for high elevation above 30m assets and structure demolishing shall be submitted and approved by Principal Contractor and IBN RUSHD.

16. ATTACHMENT

16.1 IR Demolishing EHSS Guidelines.
16.2 EMMP.

~ End of Document ~

SCOPE OF WORK

ZONE 4

Elevated Flare with associated assets

Revision 3.0

TABLE OF CONTENT

1. ABBREVIATION, DEFINITION, AND INTERPRETATION

AG/UG	Above ground / Underground.
Contractor	The winning buyer of a particular retired assets zone.
Demolition Plan	A document that explains the correct procedures, safety precautions and work requirements of a project.
EHSS	Environment, Health, Safety & Security.
EMMP	Environment Management & Monitoring Plan.
EMS	Environment Management System.
Free Land	The area free from all the UG/AG materials that have been removed.
HCIS	High Commission Industrial Security.
IR	IBN RUSHD Co. A SABIC Affiliate.
ISO	International organization for Standardization.
OH&S	Occupational, Health & Safety.
Principal Contractor	It refers to "WIN Co." as a contractor appointed by IBN RUSHD to organize, conduct the auction, and manage Contractor demolishing activities.
QMS	Quality Management System.
RCER	Royal Commission Environment Regulations.
SAF	Safety and Fire Directives.
SEC	Security Directives.
WIN	Warehouse Integration Company.
Work Permit	A written document authorizing a person or a group to perform work.

2. INTRODUCTION

IBN RUSHD intends to demolish their retired assets to make it free land. Retired assets have been segregated into 8 zones as shown in FIGURE 01; the scope of work includes, as minimum, demolition, removal, and transportation of the retired assets outside IBN RUSHD site. The objective of Scope of Work is to ensure that activities are performed in accordance with the guidelines and standards set forth or referred therein, resulting in timely completion of retried assets demolition.

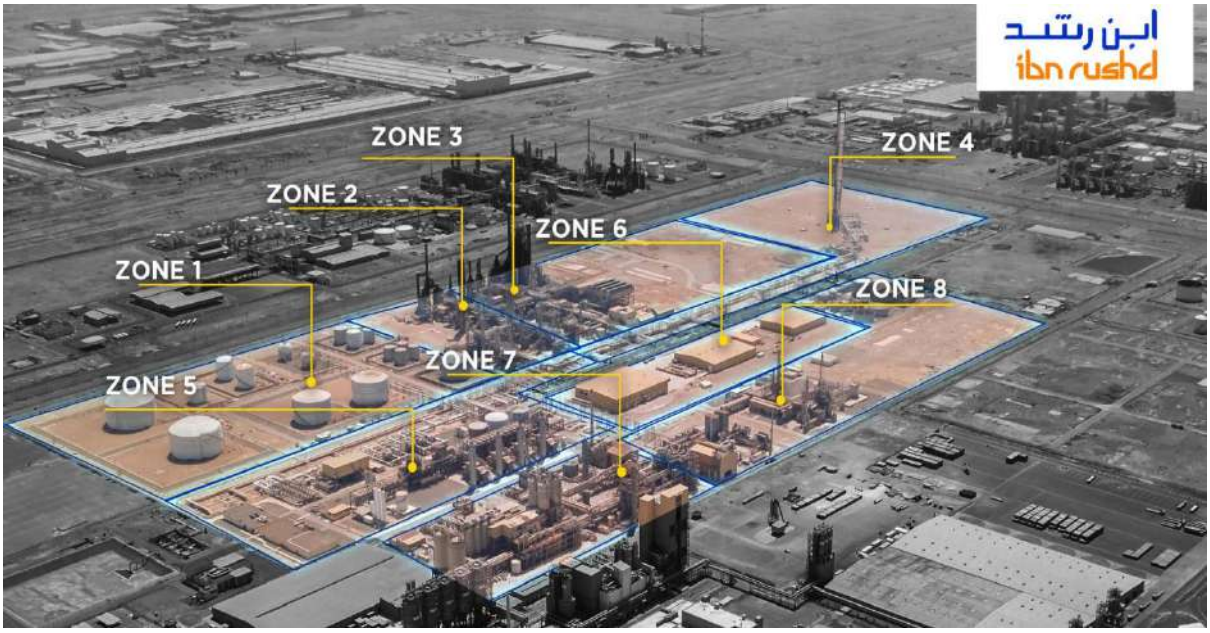


FIGURE 01

3. PURPOSE

The objective of the Scope of Work is to ensure that activities are performed according to demolition plan at zone 4 with elimination of all hazards. All activities shall be evaluated to ensure conformity with legal obligations and IBN RUSHD requirements.

4. GENERAL EHSS REQUIREMENT

4.1 Contractor shall develop and use their own Work Permit system, approved by Principal Contractor/IBN RUSHD and in line with the IR Demolishing EHSS Guidelines (attachment 01) to perform their job safely.

4.2 Contractor is responsible for all EHSS requirements for their staff and any subcontractor staff.

4.3 From the Zone handover and transfer of responsibility date until the work completion, Contractor shall assume all risks and liabilities in connection with the project works in the respective zone.

4.4 All permits, reports, and other governmental authorizations shall be developed/obtained by Contractor, as deemed necessary to perform the work.

4.5 Detailed EHSS requirements are elaborated in IR Demolishing EHSS Guideline and to be fully met.

4.6 Emergency Evacuation to comply with IR Demolishing EHSS Guidelines.

5. SCOPE OF WORK

5.1 Contractor shall develop Demolition Plan approved by Principal Contractor / IBN RUSHD which shall include their EHSS plan, Organization, Work Permit system, execution schedule, sequence of material transportation, and demolishing method. The Demolishing Plan shall be submitted after Contractor selection.

5.2 Method statement must define step-by-step plan on how the demolition Contractor intends to safely demolish buildings, structures, process units or other facilities. It should be developed following careful planning of each stage of the demolition, from mobilization to demobilization.

5.3 Contractor shall erect a fence for their allocated zone area and control the zone access accordingly.

5.4 Contractor shall ensure electrical and mechanical isolation of assets prior to commencement of the demolishing activities.

5.5 Contractor shall ensure assets are free of hazardous material prior to commencement of demolishing activities.

5.6 The demolition work would involve the removal of all aboveground and underground assets and facilities from the zone.

5.7 Contractor shall ensure all assets and tools used to carry out the scope have a valid inspection and testing certification.

5.8 Contractor shall transport all the retired assets from the allocated zone to outside IBN RUSHD site.

5.9 Contractor shall arrange all facilities required for their team in the zone to carry out the scope under this contract not limited to the followings:

- 5.9.1 Offices portable cabins.
- 5.9.2 Telecommunication.
- 5.9.3 Toilets.
- 5.9.4 Transportation and others.

5.10 Contractor shall arrange all required utilities not limited to the followings:

- 5.10.1 Electrical Power.
- 5.10.2 Water.
- 5.10.3 Sanitary.
- 5.10.4 Compressed Air.

6. ZONE OVERVIEW

FIGURE 02

7. STANDARDS/GUIDELINES

Followings are the applicable guidelines for Contractors:

7.1 IR Demolishing EHSS Guidelines
7.2 ISO 9001:2015 QMS.
7.3 ISO 45001:2018 OH&S.
7.4 ISO 14001:2015 EMS.
7.5 RCER 2015.
7.6 HCIS (SAF, SEC).

8. WASTE DISPOSAL REQUIREMENTS

8.1 Contractor shall remove, segregate, transport, and dispose of the available and generated waste from the demolition activity in accordance to RCER and EMMP (attachment 02).

8.2 Contractor shall not be relieved from removal of any trapped or residual chemical waste found during the demolishing activities.

9. CONTRACTOR SITE OFFICES AND LOGISTICS

9.1 Contractor shall provide their own zone Site Office Layout and Traffic Management Plan approved by Principal Contractor and IBN RUSHD.

10. HOUSEKEEPING

"A PLACE FOR EVERYTHING AND EVERTHING IN ITS PLACE"

10.1 Contractor shall be responsible for maintaining a good standard of housekeeping and cleanliness at the worksite and their temporary facilities.

10.2 Planned maintenance and proper segregation of all tools and equipment shall be maintained all the times in the project site.

10.3 Access and egress shall be maintained to prevent slips, trips and falls in the project site.

10.4 Housekeeping shall also include the ultimate disposal of generated waste on a regular basis in accordance with IR Demolishing EHSS Guidelines.

10.5 Disposal of any unauthorized, uninformed, or unapproved waste within the premises including drain channels, trenches…etc. is strictly prohibited.

10.6 Housekeeping shall be done all the time: before, during and after the job in the workplace.

10.7 Proper allocation of separate waste bins for different types of waste in the zone.

11. PROJECT TIMELINE

11.1 Contractor should demolish and remove all the zone assets in 6 to 14 months based on an approved demolition plan.

12. SPECIAL REQUIREMENT

12.1 All assets under Zone 4 are sold as scrap. Reuse of assets is the sole responsibility of Contractor. SABIC/IBN RUSHD/Principal Contractor, their

licensors, and assets manufacturers shall not be liable for any damages resulting from reuse of sold assets by Contractor or others.

12.2 Assets not for sale are marked in the field and shall be excluded from the demolishing activities.

13. ACCEPTANCE CRITERIA

Acceptance of work shall be issued to Contractor if they meet, as a minimum, the following criteria.

13.1 Removal of all aboveground/underground retired assets in the zone.
13.2 Backfilling and levelling the area.
13.3 Completing the job within the approved demolishing plan time frame.
13.4 Completing all regulatory requirements.
13.5 Removal of all Contractor's facilities and zone fence.
13.6 Handover the zone as free land to IBN RUSHD.

14. WORKING HOURS

14.1 Working hours shall be 6 Days x 12 Hours in accordance with IR Demolishing EHSS Guidelines.

15. AREA SPECIFIC DEMOLISHING GUIDELINES

15.1 A separate method statement for high elevation above 30m assets and structure demolishing shall be submitted and approved by Principal Contractor and IBN RUSHD.

16. ATTACHMENTS

16.1 IR Demolishing EHSS Guidelines.
16.2 EMMP.

~ End of Document ~

SCOPE OF WORK

ZONE 5

Utility-II Plant and Pipe Trench

Revision 3.0

TABLE OF CONTENT

1. ABBREVIATION, DEFINITION, AND INTERPRETATION

AG/UG	Above ground / Underground.
Contractor	The winning buyer of a particular retired assets zone.
Demolition Plan	A document that explains the correct procedures, safety precautions and work requirements of a project.
EHSS	Environment, Health, Safety & Security.
EMMP	Environment Management & Monitoring Plan.
EMS	Environment Management System.
Free Land	The area free from all the UG/AG materials that have been removed.
HCIS	High Commission Industrial Security.
IR	IBN RUSHD Co. A SABIC Affiliate.
ISO	International organization for Standardization.
OH&S	Occupational, Health & Safety.
Principal Contractor	It refers to "WIN Co." as a contractor appointed by IBN RUSHD to organize, conduct the auction, and manage Contractor demolishing activities.
QMS	Quality Management System.
RCER	Royal Commission Environment Regulations.
SAF	Safety and Fire Directives.
SEC	Security Directives.
WIN	Warehouse Integration Company.
Work Permit	A written document authorizing a person or a group to perform work.

2. INTRODUCTION

IBN RUSHD intends to demolish their retired assets to make it free land. Retired assets have been segregated into 8 zones as shown in FIGURE 01; the scope of work includes, as minimum, demolition, removal, and transportation of the retired assets outside IBN RUSHD site. The objective of Scope of Work is to ensure that activities are performed in accordance with the guidelines and standards set forth or referred therein, resulting in timely completion of retried assets demolition.

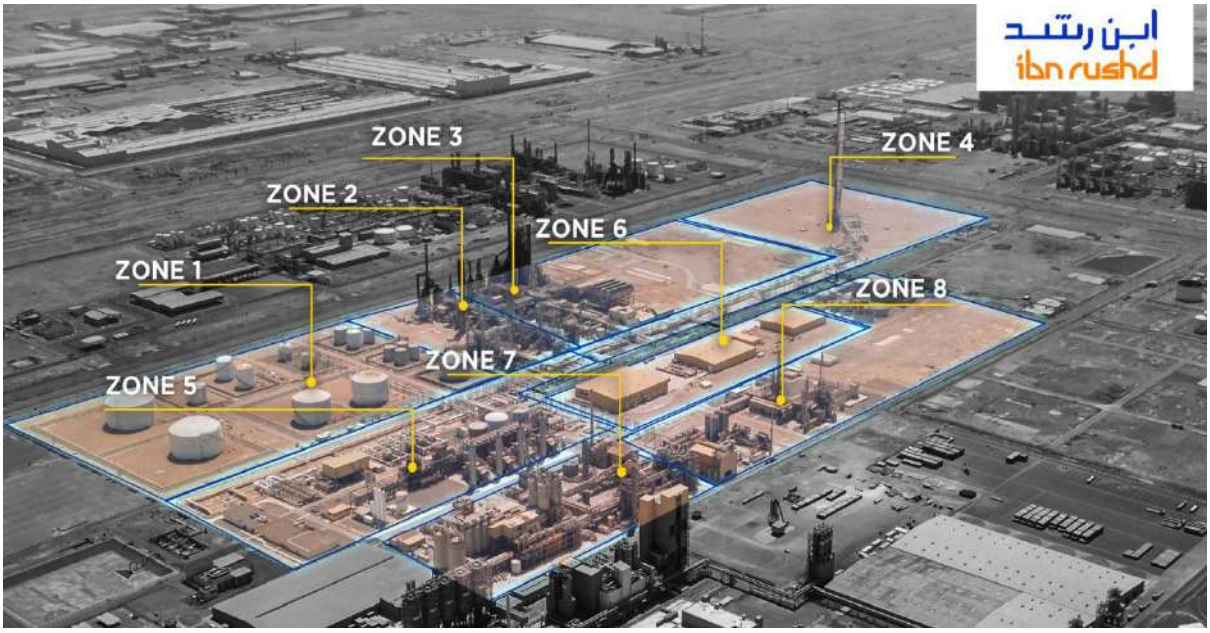


FIGURE 01

3. PURPOSE

The objective of the Scope of Work is to ensure that activities are performed according to demolition plan at zone 5 with elimination of all hazards. All activities shall be evaluated to ensure conformity with legal obligations and IBN RUSHD requirements.

4. GENERAL EHSS REQUIREMENT

4.1 Contractor shall develop and use their own Work Permit system, approved by Principal Contractor/IBN RUSHD and in line with the IR demolishing EHSS guidelines (attachment 01) to perform their job safely.

4.2 Contractor is responsible for all EHSS requirements for their staff and any subcontractor staff.

4.3 From the Zone handover and transfer of responsibility date until the work completion, Contractor shall assume all risks and liabilities in connection with the project works in the respective zone.

4.4 All permits, reports, and other governmental authorizations shall be developed/obtained by Contractor, as deemed necessary to perform the work.

4.5 Detailed EHSS requirements are elaborated in IR demolishing EHSS Guideline and to be fully met.

4.6 Emergency Evacuation to comply with IR Demolishing EHSS Guidelines.

5. SCOPE OF WORK

5.1 Contractor shall develop Demolition Plan approved by Principal Contractor / IBN RUSHD which shall include their EHSS plan, Organization, Work Permit system, execution schedule, sequence of material transportation, and demolishing method. The Demolishing Plan shall be submitted after Contractor selection.

5.2 Method statement must define step-by-step plan on how the demolition Contractor intends to safely demolish buildings, structures, process units or other facilities. It should be developed following careful planning of each stage of the demolition, from mobilization to demobilization.

5.3 Contractor shall erect a fence for their allocated zone area and control the zone access accordingly.

5.4 Contractor shall ensure electrical and mechanical isolation of assets prior to commencement of the demolishing activities.

5.5 Contractor shall ensure assets are free of hazardous material prior to commencement of demolishing activities.

5.6 The demolition work would involve the removal of all aboveground and underground assets and facilities from the zone.

5.7 Contractor shall ensure all assets and tools used to carry out the scope have a valid inspection and testing certification.

5.8 Contractor shall transport all the retired assets from the allocated zone to outside IBN RUSHD site.

5.9 Contractor shall arrange all facilities required for their team in the zone to carry out the scope under this contract not limited to the followings:

- 5.9.1 Offices portable cabins.
- 5.9.2 Telecommunication.
- 5.9.3 Toilets.
- 5.9.4 Transportation and others.

5.10 Contractor shall arrange all required utilities not limited to the followings:

- 5.10.1 Electrical Power.
- 5.10.2 Water.
- 5.10.3 Sanitary.
- 5.10.4 Compressed Air.

6. ZONE OVERVIEW

FIGURE 02

7. STANDARDS/GUIDELINES

Followings are the applicable guidelines for Contractors:

7.1 IR Demolishing EHSS Guidelines.
7.2 ISO 9001:2015 QMS.
7.3 ISO 45001:2018 OH&S.
7.4 ISO 14001:2015 EMS.
7.5 RCER 2015.
7.6 HCIS (SAF, SEC).

8. WASTE DISPOSAL REQUIREMENTS

8.1 Contractor shall remove, segregate, transport, and dispose of the available and generated waste from the demolition activity in accordance to RCER and EMMP (attachment 02).

8.2 Contractor shall not be relieved from removal of any trapped or residual chemical waste not mentioned in the table. The known chemical waste available in the zone are listed below:

Waste (Chemicals, catalyst..etc.)	Equipment Number	Total Quantity (Ton) Approx.
N2 unit Catalyst	109-D-004/005	1 (0.5 each)
Demin water vessels catalyst	112-D-01~05	12.2 (2.44 each)
Catalyst at dryer of Air compressor	110-D-003~006	10.8 (2.7 each)
Process/Demin/Potable water Tanks	113-F-002/112-F-001/114-F-001	6
Sulphuric Acid Tank	120-F-024	2
Caustic Acid Tank	124-F-001	2
Diesel Drum	108-D-001	2
Oil of Compressors and Pumps	All	<1

9. CONTRACTOR SITE OFFICES AND LOGISTICS

9.1 Contractor shall provide their own zone Site Office Layout and Traffic Management Plan approved by Principal Contractor and IBN RUSHD.

10. HOUSEKEEPING

"A PLACE FOR EVERYTHING AND EVERTHING IN ITS PLACE"

10.1 The Contractor shall be responsible for maintaining a good standard of housekeeping and cleanliness at the worksite and their temporary facilities.

10.2 Planned maintenance and proper segregation of all tools and equipment's shall be maintained all the times in the project site.

10.3 Access and egress shall be maintained to prevent slips, trips and falls in the project site.

10.4 Housekeeping shall also include the ultimate disposal of generated waste on a regular basis in accordance with IR Demolishing EHSS Guidelines.

10.5 Disposal of any unauthorized, uninformed, or unapproved waste within the premises including drain channels, trenches…etc. is strictly prohibited.

10.6 Housekeeping shall be done all the time: before, during and after the job in the workplace.

10.7 Proper allocation of separate waste bins for different types of waste in the zone.

11. PROJECT TIMELINE

11.1 Contractor should demolish and remove all the zone assets in 6 to 14 months based on an approved demolition plan.

12. SPECIAL REQUIREMENT

12.1 All assets under Zone 5 are sold as scrap. Reuse of assets is the sole responsibility of Contractor. SABIC/IBN RUSHD/ Principal Contractor, their licensors, and assets manufacturers shall not be liable for any damages resulting from reuse of sold assets by Contractor or others.

12.2 Assets not for sale are marked in the field and shall be excluded from the demolishing activities.

13. ACCEPTANCE CRITERIA

Acceptance of work shall be issued to Contractor if they meet, as a minimum, the following criteria.

13.1 Removal of all aboveground/underground retired assets in the zone.

13.2 Backfilling and levelling the area.

13.3 Completing the job within the approved demolishing plan time frame.

13.4 Completing all regulatory requirements.

13.5 Removal of all Contractor's facilities and zone fence.

13.6 Handover the zone as free land to IBN RUSHD.

14. WORKING HOURS

14.1 Working hours shall be 6 Days x 12 Hours in accordance with IR Demolishing EHSS Guidelines.

15. AREA SPECIFIC DEMOLISHING GUIDELINES

15.1 A separate method statement for high elevation above 30m assets and structure demolishing shall be submitted and approved by Principal Contractor and IBN RUSHD.

16. ATTACHMENTS

16.1 IR Demolishing EHSS Guidelines.
16.2 EMMP.

~ End of Document ~

SCOPE OF WORK

ZONE 6

Central W/S, Chemical and materials W/H

Revision 3.0

TABLE OF CONTENT

1. ABBREVIATION, DEFINITION, AND INTERPRETATION

AG/UG	Above ground / Underground.
Contractor	The winning buyer of a particular retired assets zone.
Demolition Plan	A document that explains the correct procedures, safety precautions and work requirements of a project.
EHSS	Environment, Health, Safety & Security.
EMMP	Environment Management & Monitoring Plan.
EMS	Environment Management System.
Free Land	The area free from all the UG/AG materials that have been removed.
HCIS	High Commission Industrial Security.
IR	IBN RUSHD Co. A SABIC Affiliate.
ISO	International organization for Standardization.
OH&S	Occupational, Health & Safety.
Principal Contractor	It refers to "WIN Co." as a contractor appointed by IBN RUSHD to organize, conduct the auction, and manage Contractor demolishing activities.
QMS	Quality Management System.
RCER	Royal Commission Environment Regulations.
SAF	Safety and Fire Directives.
SEC	Security Directives.
WIN	Warehouse Integration Company.
Work Permit	A written document authorizing a person or a group to perform work.

2. INTRODUCTION

IBN RUSHD intends to demolish their retired assets to make it free land. Retired assets have been segregated into 8 zones as shown in FIGURE 01; the scope of work includes, as minimum, demolition, removal, and transportation of the retired assets outside IBN RUSHD site. The objective of Scope of Work is to ensure that activities are performed in accordance with the guidelines and standards set forth or referred therein, resulting in timely completion of retried assets demolition.

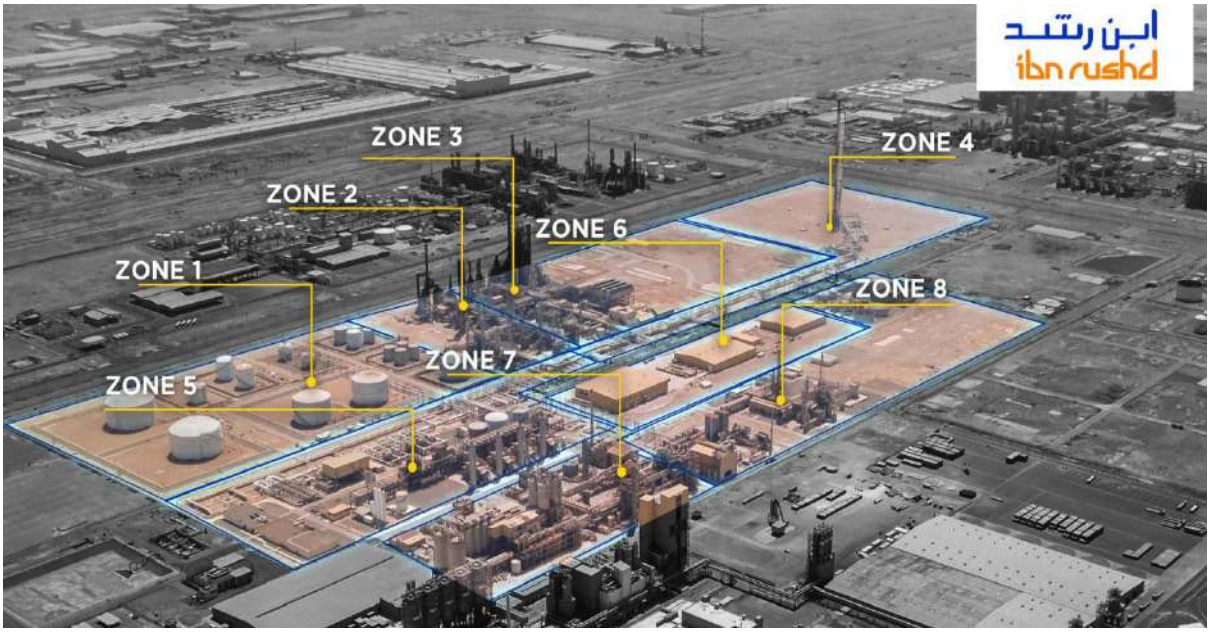


FIGURE 01

3. PURPOSE

The objective of the Scope of Work is to ensure that activities are performed according to demolition plan at zone 6 with elimination of all hazards. All activities shall be evaluated to ensure conformity with legal obligations and IBN RUSHD requirements.

4. GENERAL EHSS REQUIREMENT

4.1 Contractor shall develop and use their own Work Permit system, approved by Principal Contractor/IBN RUSHD and in line with the IR Demolishing EHSS Guidelines (attachment 01) to perform their job safely.

4.2 Contractor is responsible for all EHSS requirements for their staff and any subcontractor staff.

4.3 From the Zone handover and transfer of responsibility date until the work completion, Contractor shall assume all risks and liabilities in connection with the project works in the respective zone.

4.4 All permits, reports, and other governmental authorizations shall be developed/obtained by Contractor, as deemed necessary to perform the work.

4.5 Detailed EHSS requirements are elaborated in IR Demolishing EHSS Guideline and to be fully met.

4.6 Emergency Evacuation to comply with IR Demolishing EHSS Guidelines.

5. SCOPE OF WORK

5.1 Contractor shall develop Demolition Plan approved by Principal Contractor / IBN RUSHD which shall include their EHSS plan, Organization, Work Permit system, execution schedule, sequence of material transportation, and demolishing method. The Demolishing Plan shall be submitted after Contractor selection.

5.2 Method statement must define step-by-step plan on how the demolition Contractor intends to safely demolish buildings, structures, process units or other facilities. It should be developed following careful planning of each stage of the demolition, from mobilization to demobilization.

5.3 Contractor shall erect a fence for their allocated zone area and control the zone access accordingly.

5.4 Contractor shall ensure electrical and mechanical isolation of assets prior to commencement of the demolishing activities.

5.5 Contractor shall ensure assets are free of hazardous material prior to commencement of demolishing activities.

5.6 The demolition work would involve the removal of all aboveground and underground assets and facilities from the zone.

5.7 Contractor shall ensure all assets and tools used to carry out the scope have a valid inspection and testing certification.

5.8 Contractor shall transport all the retired assets from the allocated zone to outside IBN RUSHD site.

5.9 Contractor shall arrange all facilities required for their team in the zone to carry out the scope under this contract not limited to the followings:

- 5.9.1 Offices portable cabins.
- 5.9.2 Telecommunication.
- 5.9.3 Toilets.
- 5.9.4 Transportation and others.

5.10 Contractor shall arrange all required utilities not limited to the followings:

- 5.10.1 Electrical Power.
- 5.10.2 Water.
- 5.10.3 Sanitary.
- 5.10.4 Compressed Air.

6. ZONE OVERVIEW

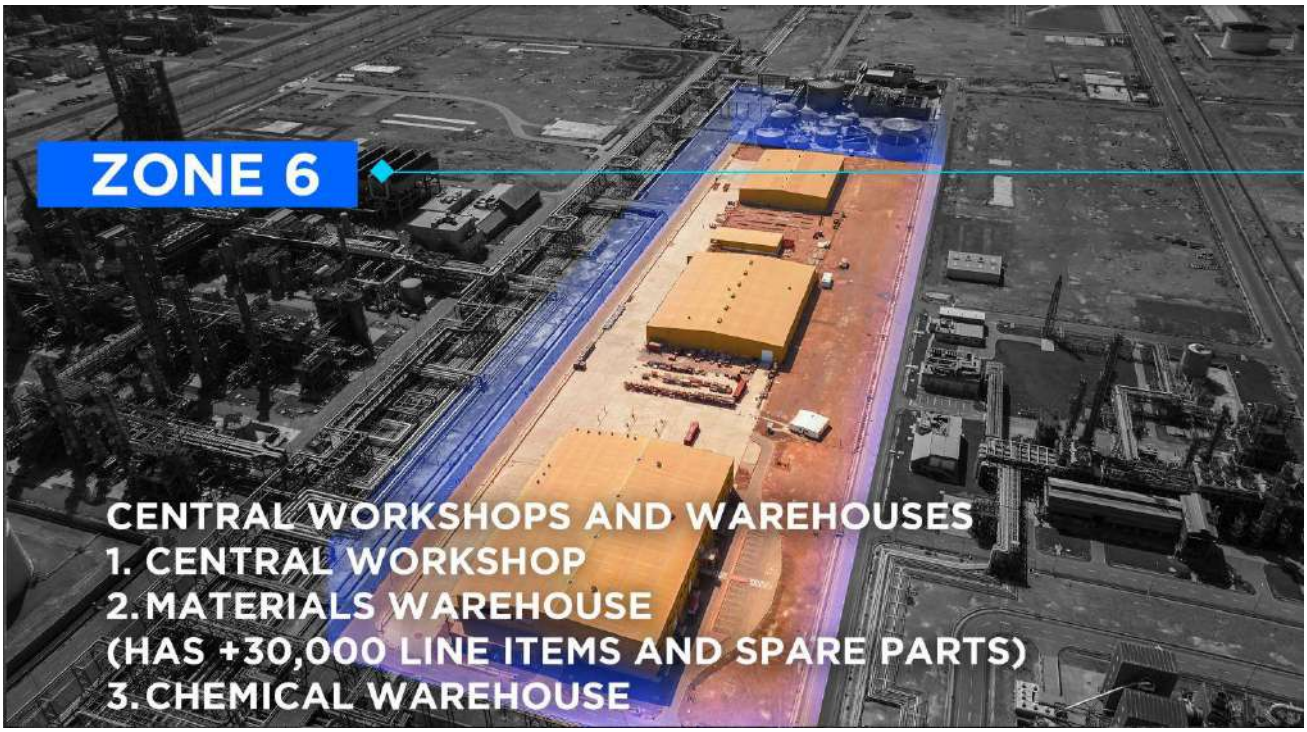


FIGURE 02

7. STANDARDS/GUIDELINES

Followings are the applicable guidelines for Contractors:

7.1 IR Demolishing EHSS Guidelines
7.2 ISO 9001:2015 QMS.
7.3 ISO 45001:2018 OH&S.
7.4 ISO 14001:2015 EMS.
7.5 RCER 2015.
7.6 HCIS (SAF, SEC).

8. WASTE DISPOSAL REQUIREMENTS

8.1 Contractor shall remove, segregate, transport, and dispose of the available and generated waste from the demolition activity in accordance to RCER and EMMP (attachment 02).

8.2 Contractor shall not be relieved from removal of any metal parts, trapped or residual chemical waste found during the demolishing activities.

9. CONTRACTOR SITE OFFICES AND LOGISTICS

9.1 Contractor shall provide their own zone Site Office Layout and Traffic Management Plan approved by Principal Contractor and IBN RUSHD.

10. HOUSEKEEPING

"A PLACE FOR EVERYTHING AND EVERTHING IN ITS PLACE"

10.1 The Contractor shall be responsible for maintaining a good standard of housekeeping and cleanliness at the worksite and their temporary facilities.

10.2 Planned maintenance and proper segregation of all tools and equipment's shall be maintained all the times in the project site.

10.3 Access and egress shall be maintained to prevent slips, trips and falls in the project site.

10.4 Housekeeping shall also include the ultimate disposal of generated waste on a regular basis in accordance with IR Demolishing EHSS Guidelines.

10.5 Disposal of any unauthorized, uninformed, or unapproved waste within the premises including drain channels, trenches…etc. is strictly prohibited.

10.6 Housekeeping shall be done all the time: before, during and after the job in the workplace.

10.7 Proper allocation of separate waste bins for different types of waste in the zone.

11. PROJECT TIMELINE

11.1 Contractor should demolish and remove all the zone assets in 6 to 14 months based on an approved demolition plan.

12. SPECIAL REQUIREMENT

12.1 All assets under Zone 6 are sold as scrap. Reuse of assets is the sole responsibility of Contractor. SABIC/IBN RUSHD/ Principal Contractor, their licensors, and assets manufacturers shall not be liable for any damages resulting from reuse of sold assets by Contractor or others.

12.2 Assets not for sale are marked in the field and shall be excluded from the demolishing activities.

13. ACCEPTANCE CRITERIA

Acceptance of work shall be issued to Contractor if they meet, as a minimum, the following criteria.

13.1 Removal of all aboveground/underground retired assets in the zone.
13.2 Backfilling and levelling the area.
13.3 Completing the job within the approved demolishing plan time frame.
13.4 Completing all regulatory requirements.
13.5 Removal of all Contractor's facilities and zone fence.
13.6 Handover the zone as free land to IBN RUSHD.

14. WORKING HOURS

14.1 Working hours shall be 6 Days x 12 Hours in accordance with IR Demolishing EHSS Guidelines.

15. AREA SPECIFIC DEMOLISHING GUIDELINES

15.1 A separate method statement for high elevation above 30m assets and structure demolishing shall be submitted and approved by Principal Contractor and IBN RUSHD.

16. ATTACHMENTS

16.1 IR Demolishing EHSS Guidelines.
16.2 EMMP.

~ End of Document ~

SCOPE OF WORK

ZONE 7

PTA/CTA Plants

Revision 3.0

TABLE OF CONTENT

1. ABBREVIATION, DEFINITION, AND INTERPRETATION

AG/UG	Above ground / Underground.
Contractor	The winning buyer of a particular retired assets zone.
Demolition Plan	A document that explains the correct procedures, safety precautions and work requirements of a project.
EHSS	Environment, Health, Safety & Security.
EMMP	Environment Management & Monitoring Plan.
EMS	Environment Management System.
Free Land	The area free from all the UG/AG materials that have been removed.
HCIS	High Commission Industrial Security.
IR	IBN RUSHD Co. A SABIC Affiliate.
ISO	International organization for Standardization.
OH&S	Occupational, Health & Safety.
Principal Contractor	It refers to "WIN Co." as a contractor appointed by IBN RUSHD to organize, conduct the auction, and manage Contractor demolishing activities.
QMS	Quality Management System.
RCER	Royal Commission Environment Regulations.
SAF	Safety and Fire Directives.
SEC	Security Directives.
WIN	Warehouse Integration Company.
Work Permit	A written document authorizing a person or a group to perform work.

2. INTRODUCTION

IBN RUSHD intends to demolish their retired assets to make it free land. Retired assets have been segregated into 8 zones as shown in FIGURE 01; the scope of work includes, as minimum, demolition, removal, and transportation of the retired assets outside IBN RUSHD site. The objective of Scope of Work is to ensure that activities are performed in accordance with the guidelines and standards set forth or referred therein, resulting in timely completion of retried assets demolition.

FIGURE 01

3. PURPOSE

The objective of the Scope of Work is to ensure that activities are performed according to demolition plan at zone 7 with elimination of all hazards. All activities shall be evaluated to ensure conformity with legal obligations and IBN RUSHD requirements.

4. GENERAL EHSS REQUIREMENT

4.1 Contractor shall develop and use their own Work Permit system, approved by Principal Contractor/IBN RUSHD and in line with the IR Demolishing EHSS Guidelines (attachment 01) to perform their job safely.

4.2 Contractor is responsible for all EHSS requirements for their staff and any subcontractor staff.

4.3 From the Zone handover and transfer of responsibility date until the work completion, Contractor shall assume all risks and liabilities in connection with the project works in the respective zone.

4.4 All permits, reports, and other governmental authorizations shall be developed/obtained by Contractor, as deemed necessary to perform the work.

4.5 Detailed EHSS requirements are elaborated in IR Demolishing EHSS Guideline and to be fully met.

4.6 Emergency Evacuation to comply with IR Demolishing EHSS Guidelines.

5. SCOPE OF WORK

5.1 Contractor shall develop Demolition Plan approved by Principal Contractor / IBN RUSHD which shall include their EHSS plan, Organization, Work Permit system, execution schedule, sequence of material transportation, and demolishing method. The Demolishing Plan shall be submitted after Contractor selection.

5.2 Method statement must define step-by-step plan on how the demolition Contractor intends to safely demolish buildings, structures, process units or other facilities. It should be developed following careful planning of each stage of the demolition, from mobilization to demobilization.

5.3 Contractor shall erect a fence for their allocated zone area and control the zone access accordingly.

5.4 Contractor shall ensure electrical and mechanical isolation of assets prior to commencement of the demolishing activities.

5.5 Contractor shall ensure assets are free of hazardous material prior to commencement of demolishing activities.

5.6 The demolition work would involve the removal of all aboveground and underground assets and facilities from the zone.

5.7 Contractor shall ensure all assets and tools used to carry out the scope have a valid inspection and testing certification.

5.8 Contractor shall transport all the retired assets from the allocated zone to outside IBN RUSHD site.

5.9 Contractor shall arrange all facilities required for their team in the zone to carry out the scope under this contract not limited to the followings:

- 5.9.1 Offices portable cabins.
- 5.9.2 Telecommunication.
- 5.9.3 Toilets.
- 5.9.4 Transportation and others.

5.10 Contractor shall arrange all required utilities not limited to the followings:

- 5.10.1 Electrical Power.
- 5.10.2 Water.
- 5.10.3 Sanitary.
- 5.10.4 Compressed Air.

6. ZONE OVERVIEW

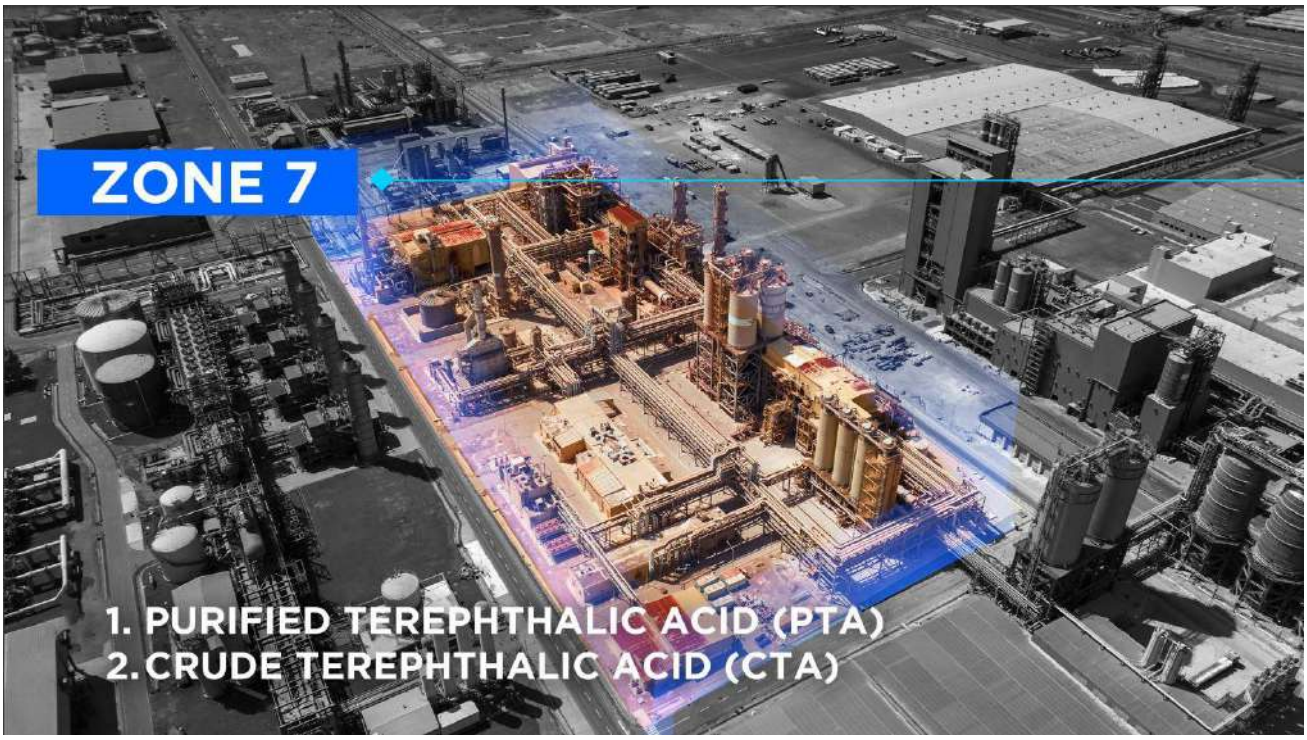


FIGURE 02

7. STANDARDS/GUIDELINES

Followings are the applicable guidelines for Contractors:

7.1 IR Demolishing EHSS Guidelines.
7.2 ISO 9001:2015 QMS.
7.3 ISO 45001:2018 OH&S.
7.4 ISO 14001:2015 EMS.
7.5 RCER 2015.
7.6 HCIS (SAF, SEC).

8. WASTE DISPOSAL REQUIREMENTS

8.1 Contractor shall remove, segregate, transport, and dispose of the available and generated waste from the demolition activity in accordance to RCER and EMMP (attachment 02).

8.2 Contractor shall not be relieved from removal of any trapped or residual chemical waste not mentioned in the table. The known chemical waste available in the zone are listed below:

Waste (Chemicals, catalyst..etc.)	Equipment Number	Quantity (Ton) Approx.
Activated Alumina "OGD"	10D301, 10D302	~8 ton
Foam glass/insulation	All pips and vessels	Unknown
Glycerin from mechanical seal	CTA R1, R2, R3, C1 and C2 PTA C1 and C2	~2 Ton
Ion Exchange Resin	16D019	~3 Ton
Lube oil tank for compressors, EDG and gearbox	11K100, 11K110 and EDG	~70 Ton
Therminol 66 HTF "HTM"	HTM loop	~3 Ton
K.O. drum for flare line (mix chemicals)	119D003	~10 Ton and less

9. CONTRACTOR SITE OFFICES AND LOGISTICS

9.1 Contractor shall provide their own zone Site Office Layout and Traffic Management Plan approved by Principal Contractor and IBN RUSHD.

10. HOUSEKEEPING

"A PLACE FOR EVERYTHING AND EVERTHING IN ITS PLACE"

10.1 The Contractor shall be responsible for maintaining a good standard of housekeeping and cleanliness at the worksite and their temporary facilities.

10.2 Planned maintenance and proper segregation of all tools and equipment's shall be maintained all the times in the project site.

10.3 Access and egress shall be maintained to prevent slips, trips and falls in the project site.

10.4 Housekeeping shall also include the ultimate disposal of generated waste on a regular basis in accordance with IR Demolishing EHSS Guidelines.

10.5 Disposal of any unauthorized, uninformed, or unapproved waste within the premises including drain channels, trenches... etc. is strictly prohibited.

10.6 Housekeeping shall be done all the time: before, during and after the job in the workplace.

10.7 Proper allocation of separate waste bins for different types of waste in the zone.

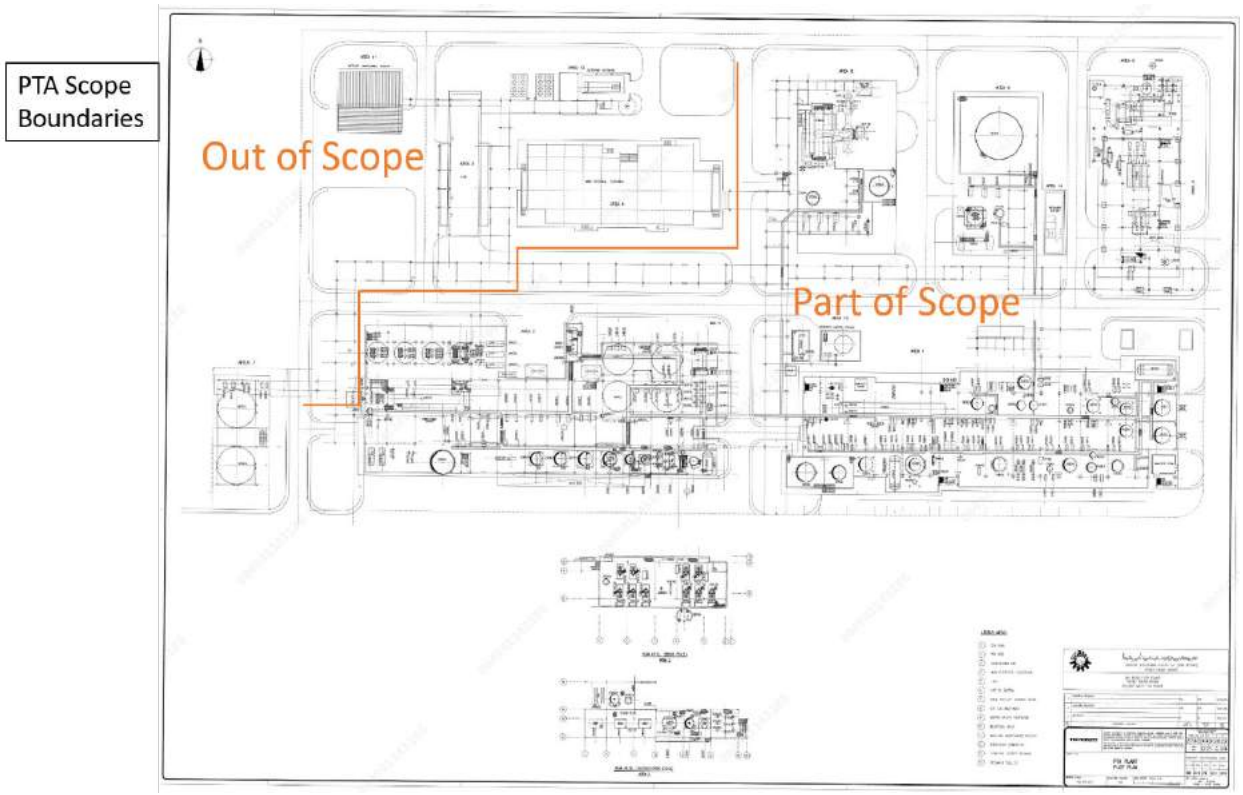
11. PROJECT TIMELINE

11.1 Contractor should demolish and remove all the zone assets in 6 to 14 months based on an approved demolition plan.

12. SPECIAL REQUIREMENT

12.1 All assets under Zone 7 are sold as scrap. Reuse of assets is the sole responsibility of Contractor. SABIC/IBN RUSHD/ Principal Contractor, their licensors, and assets manufacturers shall not be liable for any damages resulting from reuse of sold assets by Contractor or others.

12.2 Assets not for sale are marked in the field and shall be excluded from the demolishing activities.



13. ACCEPTANCE CRITERIA

Acceptance of work shall be issued to Contractor if they meet, as a minimum, the following criteria.

13.1 Removal of all aboveground/underground retired assets in the zone.
13.2 Backfilling and levelling the area.
13.3 Completing the job within the approved demolishing plan time frame.
13.4 Completing all regulatory requirements.
13.5 Removal of all Contractor's facilities and zone fence.
13.6 Handover the zone as free land to IBN RUSHD.

14. WORKING HOURS

14.1 Working hours shall be 6 Days x 12 Hours in accordance with IR Demolishing EHSS Guidelines.

15. AREA SPECIFIC DEMOLISHING GUIDELINES

15.1 A separate method statement for high elevation above 30m assets and structure demolishing shall be submitted and approved by Principal Contractor and IBN RUSHD.

16. ATTACHMENTS

16.1 IR Demolishing EHSS Guidelines.
16.2 EMMP.

~ End of Document ~

SCOPE OF WORK

ZONE 8

AA/Incinerator/ETPs Plants

Revision 3.0

TABLE OF CONTENT

1. ABBREVIATION, DEFINITION, AND INTERPRETATION

AG/UG	Above ground / Underground.
Contractor	The winning buyer of a particular retired assets zone.
Demolition Plan	A document that explains the correct procedures, safety precautions and work requirements of a project.
EHSS	Environment, Health, Safety & Security.
EMMP	Environment Management & Monitoring Plan.
EMS	Environment Management System.
Free Land	The area free from all the UG/AG materials that have been removed.
HCIS	High Commission Industrial Security.
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ISO	International organization for Standardization.
OH&S	Occupational, Health & Safety.
Principal Contractor	It refers to "WIN Co." as a contractor appointed by IBN RUSHD to organize, conduct the auction, and manage Contractor demolishing activities.
QMS	Quality Management System.
RCER	Royal Commission Environment Regulations.
SAF	Safety and Fire Directives.
SEC	Security Directives.
WIN	Warehouse Integration Company.
Work Permit	A written document authorizing a person or a group to perform work.

2. INTRODUCTION

IBN RUSHD intends to demolish their retired assets to make it free land. Retired assets have been segregated into 8 zones as shown in FIGURE 01; the scope of work includes, as minimum, demolition, removal, and transportation of the retired assets outside IBN RUSHD site. The objective of Scope of Work is to ensure that activities are performed in accordance with the guidelines and standards set forth or referred therein, resulting in timely completion of retried assets demolition.

FIGURE 01

3. PURPOSE

The objective of the Scope of Work is to ensure that activities are performed according to demolition plan at zone 8 with elimination of all hazards. All activities shall be evaluated to ensure conformity with legal obligations and IBN RUSHD requirements.

4. GENERAL EHSS REQUIREMENT

4.1 Contractor shall develop and use their own Work Permit system, approved by Principal Contractor/IBN RUSHD and in line with the IR Demolishing EHSS Guidelines (attachment 01) to perform their job safely.

4.2 Contractor is responsible for all EHSS requirements for their staff and any subcontractor staff.

4.3 From the Zone handover and transfer of responsibility date until the work completion, Contractor shall assume all risks and liabilities in connection with the project works in the respective zone.

4.4 All permits, reports, and other governmental authorizations shall be developed/obtained by Contractor, as deemed necessary to perform the work.

4.5 Detailed EHSS requirements are elaborated in IR demolishing EHSS guideline and to be fully met.

4.6 Emergency Evacuation to comply with IR Demolishing EHSS Guidelines.

5. SCOPE OF WORK

5.1 Contractor shall develop Demolition Plan approved by Principal Contractor / IBN RUSHD which shall include their EHSS plan, Organization, Work Permit system, execution schedule, sequence of material transportation, and demolishing method. The Demolishing Plan shall be submitted after Contractor selection.

5.2 Method statement must define step-by-step plan on how the demolition Contractor intends to safely demolish buildings, structures, process units or other facilities. It should be developed following careful planning of each stage of the demolition, from mobilization to demobilization.

5.3 Contractor shall erect a fence for their allocated zone area and control the zone access accordingly.

5.4 Contractor shall ensure electrical and mechanical isolation of assets prior to commencement of the demolishing activities.

5.5 Contractor shall ensure assets are free of hazardous material prior to commencement of demolishing activities.

5.6 The demolition work would involve the removal of all aboveground and underground assets and facilities from the zone.

5.7 Contractor shall ensure all assets and tools used to carry out the scope have a valid inspection and testing certification.

5.8 Contractor shall transport all the retired assets from the allocated zone to outside IBN RUSHD site.

5.9 Contractor shall arrange all facilities required for their team in the zone to carry out the scope under this contract not limited to the followings:

- 5.9.1 Offices portable cabins.
- 5.9.2 Telecommunication.
- 5.9.3 Toilets.
- 5.9.4 Transportation and others.

5.10 Contractor shall arrange all required utilities not limited to the followings:

- 5.10.1 Electrical Power.
- 5.10.2 Water.
- 5.10.3 Sanitary.
- 5.10.4 Compressed Air.

6. ZONE OVERVIEW

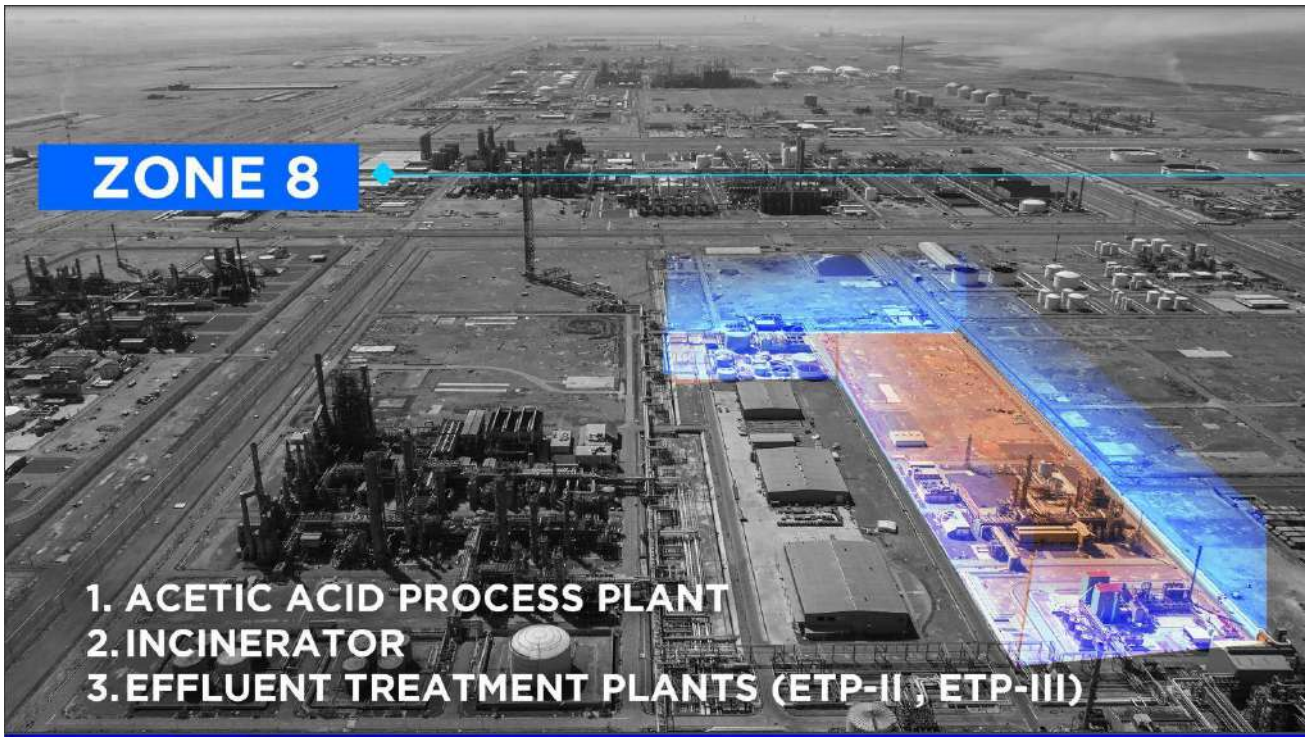


FIGURE 02

7. STANDARDS/GUIDELINES

Followings are the applicable guidelines for Contractors:

7.1 IR Demolishing EHSS Guidelines.
7.2 ISO 9001:2015 QMS.
7.3 ISO 45001:2018 OH&S.
7.4 ISO 14001:2015 EMS.
7.5 RCER 2015.
7.6 HCIS (SAF, SEC).

8. WASTE DISPOSAL REQUIREMENTS

8.1 Contractor shall remove, segregate, transport, and dispose of the available and generated waste from the demolition activity in accordance to RCER and EMMP (attachment 02).

8.2 Contractor shall not be relieved from removal of any trapped or residual chemical waste not mentioned in the table. The known chemical waste available in the zone are listed below:

Chemicals / catalyst /waste bags / waste oil / other.	Equipment Number	Quantity (Ton) Approx.
AA plant Catalyst (SABOX 300)	R-121/R181	85 ton
Oil compressor	J-112	2 Ton

9. CONTRACTOR SITE OFFICES AND LOGISTICS

9.1 Contractor shall provide their own zone Site Office Layout and Traffic Management Plan approved by Principal Contractor and IBN RUSHD.

10. HOUSEKEEPING

"A PLACE FOR EVERYTHING AND EVERTHING IN ITS PLACE"

10.1 Contractor shall be responsible for maintaining a good standard of housekeeping and cleanliness at the worksite and their temporary facilities.

10.2 Planned maintenance and proper segregation of all tools and equipment's shall be maintained all the times in the project site.

10.3 Access and egress shall be maintained to prevent slips, trips and falls in the project site.

10.4 Housekeeping shall also include the ultimate disposal of generated waste on a regular basis in accordance with IR Demolishing EHSS Guidelines.

10.5 Disposal of any unauthorized, uninformed, or unapproved waste within the premises including drain channels, trenches... etc. is strictly prohibited.

10.6 Housekeeping shall be done all the time: before, during and after the job in the workplace.

10.7 Proper allocation of separate waste bins for different types of waste in the zone.

11. PROJECT TIMELINE

11.1 Contractor should demolish and remove all the zone assets in 6 to 14 months based on an approved demolition plan.

12. SPECIAL REQUIREMENT

12.1 All assets under Zone 8 are sold as scrap. Reuse of assets is the sole responsibility of Contractor. SABIC/IBN RUSHD/ Principal Contractor, their licensors, and assets manufacturers shall not be liable for any damages resulting from reuse of sold assets by Contractor or others.

12.2 Assets not for sale are marked in the field and shall be excluded from the demolishing activities.

13. ACCEPTANCE CRITERIA

Acceptance of work shall be issued to Contractor if they meet, as a minimum, the following criteria.

13.1 Removal of all aboveground/underground retired assets in the zone.

13.2 Backfilling and levelling the area.

13.3 Completing the job within the approved demolishing plan time frame.

13.4 Completing all regulatory requirements.

13.5 Removal of all Contractor's facilities and zone fence.

13.6 Handover the zone as free land to IBN RUSHD.

14. WORKING HOURS

14.1 Working hours shall be 6 Days x 12 Hours in accordance with IR Demolishing EHSS Guidelines.

15. AREA SPECIFIC DEMOLISHING GUIDELINES

15.1 A separate method statement for high elevation above 30m assets and structure demolishing shall be submitted and approved by Principal Contractor and IBN RUSHD.

16. ATTACHMENTS

16.1 IR Demolishing EHSS Guidelines.

16.2 EMMP.

~ End of Document ~

Attachments

(2)

دليل شركة ابن رشد للبيئة والصحة والسلامة والأمن الخاص بعمليات الهدم والازالة والنقل

Ibn Rushd Demolishing EHSS Guideline

IBN RUSHD COMPANY

Document No.: Demolishing Project-EHSS-GL-01

Document Name: IR Demolishing ENVIRONMENT, HEALTH, SAFETY & SECUIRTY (EHSS) Guidelines

Rev. No.: 00

REVISION HISTORY

Revision No.	Date	Revision Description
00	30 May-2023	Initial issue.

CONTENTS

1 INTRODUCTION

This document is developed to manage and serve as a guideline for the event of demolishing IBN RUSHD (IR) retired assets from Environment, Health, Safety and Security perspective. This document is not intended to replace any legal requirements, international standard, or YANSAB procedure, but to complement them. This document is developed with reference to OMS-441 (Asset Retirement) **Attachment 1.**

2 PURPOSE

The purpose of this EHSS Guidelines is to deliver clarity, consistency & commitment by all parties on how the organization intends to manage the EHSS of demolishing IBN RUSHD retired and fenced assets. It will help employees & contractors protect themselves from harm, the running assets from damaged, and the Environment from negative affect, and ensure compliance with all regulatory requirements while demolishing the assets.

3 SCOPE

3.1 This document is applicable to all demolishing activities for IBN RUSHD retired and fenced assets.

3.2 It excludes any demolishing activities inside the live plant area, where YANSAB EHSS Management Systems are required.

4 ROLES AND RESPONSIBILITIES

4.1 All requirements and responsibilities to be communicated to ensure all involved parties understand the objectives and their specific accountabilities/responsibilities. All activities associated with the management of disposed assets shall be undertaken in accordance with YANSAB EHSS policy, plans and procedures. Compliance with existing management procedures is required, unless formal dispensation is agreed.

4.2 Transfer of Responsibilities (TOR) **Attachment 2**: The purpose of this Certificate is to transfer responsibility within the described boundary of IBN RUSHD retired and fenced assets as follows:

4.2.1 Responsibility for the control of work and management of Environment, Health, security & Safety lies with the Demolition Contractor nominated. An appointed Principal Contractor, as nominated, will review and approve the Demolition Contractor's Demolishing Plan, which include as minimum EHSS plan, Organization, Work Permit system, execution schedule, sequence of material transportation, and demolishing method, after the consent of IBN RUSHD Demolition Project Leader. This does not absolve the Demolition Contractor of any responsibility for the work methods or ensuring that work is undertaken in a safe and environmentally sound manner.

4.2.2 The appointed Principal Contractor will monitor the TOR area and work activities being undertaken by the Demolition Contractor on behalf of IBN RUSHD.

4.2.3 As deemed necessary by IBN RUSHD, the Structural Advisor nominated will review and comment on the structural aspects of the demolition work methods. Such reviews will not absolve the Demolition Contractor of any responsibilities for ensuring that the work activities undertaken inside and outside the TOR and their effect on each other are understood, controlled and do not create any adverse EHSS impact.

4.2.4 The Demolition Contractor shall be responsible for liaising with the Principal Contractor nominated to ensure that work activities inside and outside the TOR area and effect on each other are understood, controlled and do not create any adverse EHSS impact.

4.2.5 The Demolition Contractor nominated is responsible to hire an approved Waste Consignor by the Local Authorities Royal commission environmental protection and control department (RCEPCD) for all waste produced within the TOR area.

4.2.6 By virtue of this TOR, the Demolition Contractor agrees to accept responsibility and liabilities associated with the demolition activities that will take place within the TOR areas as defined in **Attachment 3.**

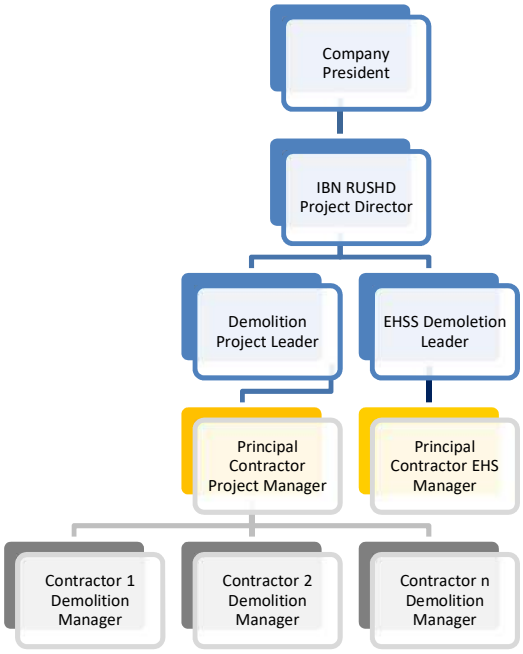
4.2.7 The Demolition Contractor confirms their agreement to indemnify IBN RUSHD and Principal Contractor from any liabilities related to the activities associated with this document.

4.2.8 From the Zone handover and transfer of responsibility date until the work completion, Contractor shall assume accountabilities and responsibilities of all risks and liabilities in connection with the project works in the respective zone.

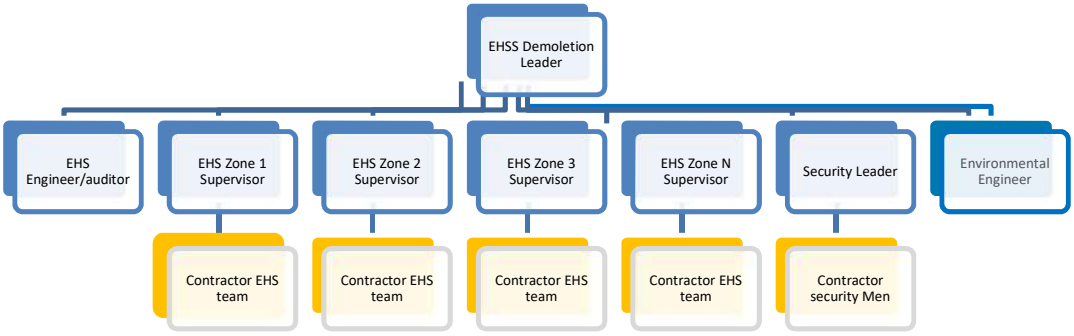
4.2.9 Transfer of Responsibilities (TOR) Handback Shall be signed after project completion. **Attachment 4**

4.3 Typical Demolishing Project Organization:

4.3.1 Typical Overall Organization



4.3.2 Typical EHSS Organization



4.4 Company president:

4.4.1 Chairs Demolition Project Executives Steering Committee.

4.4.2 He has the overall accountability for all matters relating to the EHSS.

4.5 IBN RUSHD Director:

4.5.1 Responsible for setting up the Demolition Project EHSS objectives/KPIs and targets. Further, will provide leadership for the plans implementation as required in the Demolition Project EHSS Guidelines.

4.5.2 Approves Demolition Project EHSS organization and ensure provision of all necessary support to the Demolition Project EHSS Team is granted.

4.5.3 Monitors the implementation of IBN RUSHD Demolition EHSS Guidelines through facilitating effective communication and participation of employees/contractors in the Demolition Project EHSS program.

4.5.4 Ensures effective management of critical issues and risks and the subsequent follow-up actions.

4.5.5 He has the overall accountability for all matters relating to the EHSS outside the TOR areas.

4.6 Demolition Project leader (IBN RUSHD/Principal Contractor):

4.6.1 He has the responsibility for all matters relating to the EHSS outside the TOR areas.

4.6.2 Ensures individual Demolition Contractors' EHSS plans implementation inside their respective TOR area(s) throughout the Demolition Project period.

4.6.3 Manages & Leads Demolition Project teams (Planning and Execution) in order to achieve the set EHSS goals during the event.

4.6.4 Posts a detailed discussion with the Contractors Management on the EHSS expectations and commitments as to ensure contractors' EHSS Plan in-line with IBN RUSHD Demolition EHSS Guidelines.

4.6.5 Participates and provide his expertise in Risk management for critical activities as defined in this guideline.

4.6.6 Reports Incidents to Demolition Project Steering Committee Immediately, and ensure it is been reported through the agreed reporting system to the EHSS team.

4.6.7 Endorses Demolition Contractors' EHSS Plans.

4.7 EHSS Demolition leader (IBN RUSHD/Principal Contractor):

4.7.1 Responsible for the IBN RUSHD Demolition EHSS Guideline development, effective implementation, and verification.

4.7.2 Supports Demolition Project Preparation /Execution Team by providing advice on hazards control, accident prevention, incident reporting and investigation.

4.7.3 Facilitates Management Safety Audit as per plan and discuss findings with the audit team members.

4.7.4 Assist the Demolition Project Lead to highlight EHSS Major Concerns.

4.7.5 Reviews Demolition Contractors' EHSS Plans.

4.7.6 Coordinates the implementation of Demolition contractors EHSS Plan in their respective area(s).

4.7.7 Coordinates with Execution Team and Contractors to promote safety awareness in work areas under their control.

4.7.8 Prepares the Demolition Project steering committee Safety report, which will highlight the major observation and provide detailed guidelines for repeated EHSS conditions.

4.8 Demolition Contractor Leader (Site Manager):

4.8.1 Responsible for effective implementation of their EHSS Plan and ensuring compliance with safety rules and regulations in all areas under his direct control as per TOR.

4.8.2 Prepares/reviews JSA for the jobs under his area and control as per set criteria

4.8.3 Analyzes hazards associated with the work he is supervising and ensure implementation of preventive actions as specified in the approved JSA form.

4.8.4 Ensures strict adherence to safety regulations and procedures by all employees carrying out work under his supervision.

4.8.5 Monitors normal hand tools and equipment to ensure they are safe for use through inspection during Demolition Project execution.

4.8.6 Reports and investigate all incidents involving works under their supervision.

4.8.7 Participates in the Management EHSS Audit as per plan.

4.8.8 Report to Principal Contractor who is part of IBN RUSHD's Demolition Project Organization.

4.9 EHSS Demolition Contractor Leader:

4.9.1 Reports to Demolition Project EHSS leader through the Principal Contractor's EHSS Lead and he is the Contractor's focal point and responsible for all matter pertaining to EHSS.

4.9.2 Attends daily briefing meeting organized by Demolition Project EHSS team.

4.9.3 Conducts daily EHSS monitoring at his work area to achieve compliance and participate in safety inspections.

4.9.4 Ensures that all their personnel and subcontractors personnel work within the guidelines of this document and in compliance to the endorsed Demolition Contractor's EHSS plan.

4.9.5 Ensures the right type of Personal Protection Equipment (PPE) for each job activity is being used by the workers.

4.9.6 Conducts the daily EHSS talk with all personnel under his control.

4.9.7 Issue daily, weekly and monthly EHSS reports and circulate it thru email and all proper means of communications.

4.9.8 Reports all observations, near miss and other incidents timely to Demolition Project EHSS team leader and ensure completion of recommendation assigned to his group.

4.9.9 Conducts/participates in "Incident Investigation" in their area of responsibility and implement recommended actions of these investigations

4.9.10 IBN RUSHD EHSS department will review the CVs (Curriculum Vitae) of Contractor's EHSS leaders and interview them, as applicable, to evaluate their competency, which shall be as minimums:

4.9.10.1 A holder of NEBOSH IGC certification as minimum.

4.9.10.2 5~9 years of experience.

4.9.10.3 Able to read write English fluently.

4.9.10.4 A holder of diploma degree as minimum.

4.9.11 All Contractors' Safety member are required to be given basic EHSS induction by IBN RUSHD EHSS in order to appraise them about IBN RUSHD's work culture and expectations.

4.9.12 If noticed any violation, or major EHSS concerns, IBN RUSHD has all the authority to take any suitable action against the contractors.

4.10 Demolition Project Workforce (Employee & Contractor):

4.10.1 All IBN RUSHD and Contractor's workforce/employee are responsible for their own safety and ensure that acts or conducts do not endanger any other workers at the site.

4.10.2 Cooperate and work safely at all times and adhere to all EHSS rules and regulations in accordance to the approved Contractor's EHSS Plan.

4.10.3 Report unsafe acts, conditions and all incidents to his immediate Area Supervisor and/or Safety Representative.

4.10.4 Reserve the right not to work at unsafe location and/or condition.

4.10.5 In case of emergency, stop all work activities safely, respond and evacuate to the nearest safe assembly area immediately.

4.10.6 All Demolition Project workforces shall be responsible to ensure that only approved tools/equipment are used and in good condition prior to any work activities.

5 REQUIREMENTS

5.1 Objectives and Targets:

The objective of this EHSS Guidelines is to summarize the efforts set from IR, the Principal Contractor, and the Demolishing Contractors in order to achieve the set EHSS targets during the retired assets Demolishing Project, and ensure that all activities are well planned, managed, controlled and monitored adequately

KPI DESCRIPTION	Target
Incident Rate – Direct Employee *	0
Incident Rate – Contractor *	0
Process Safety Total Incident Rate (PSTIR) *	0
Security Incident rate *	0
Regulatory Authority Violation	0
YANSAB-Executives / Senior Managers Walkthroughs	01/Month
Closure of all DEMOLISHING PLANT Observations	100%
Number of EHSS Meetings	Weekly
Number of Project Steering Meetings	Monthly

5.2 Safety Requirements:

5.2.1 Demolition Project Management (**Auction Period**):

5.2.1.1 All Yansab SHEM management Systems are applicable during the auction period will be fully implemented.

5.2.2 Demolition Project Management (**Demolition Period**):

5.2.2.1 IBN RUSHD Demolishing EHSS Guideline to be communicated with all project stakeholders.

5.2.2.2 Demolition Contractors shall ensure full understanding of this EHSS Guidelines Timely.

5.2.2.3 Demolition Contractor focal points' contacts information shall be posted at a visible location in their zone in case any communication needed.

5.2.2.4 It is a sole responsibility of the Demolition Contractors Management to deliver and cascade all EHSS requirements to all contractor's/subcontractor employee, who are going to work in the zone under their direct control.

5.2.2.5 All Contractors have to prepare their specific EHSS Plan in line with IR Demolishing EHSS Guideline and to be submitted to principal contractor leader to review and ensure that all EHSS requirements are fulfilled and adhered to.

5.2.2.6 Contractor EHSS plan shall be shared with all project to ensure full compliance during the demolishing time.

5.2.2.7 Contractor EHSS Plan Package includes as minimum:

5.2.2.7.1 EHSS Organization chart.

5.2.2.7.2 Rules & responsibility

5.2.2.7.3 EHSS KPI

5.2.2.7.4 Environmental measures.

5.2.2.7.5 List of critical Job.

5.2.2.7.6 Method of statement.

5.2.2.7.7 Risk Assessments for all major or significant jobs.

5.2.2.7.8 Plant Layout.

5.2.2.7.9 Traffic management.

5.2.2.7.10 IH Plan

5.2.2.7.11 Rescue plans

5.2.2.7.12 Job Safety Analysis.

5.2.2.8 Contractor EHSS Mobilization:

5.2.2.8.1 All contractor shall be mobilized well in advance before the start of the project.

5.2.2.8.2 Each contractor shall submit the mobilization plan to Principal Contractor leader.

5.2.2.8.3 Contractors Helmets and/or uniforms to be of different color for different zone.

5.2.2.8.4 Other uniforms which is not related to the contractor company shall be prohibited to be as site.

5.2.2.8.5 None of the approved contractor's EHS team shall be replaced without notifying EHSS project leader and having his alignment.

5.2.2.8.6 All facilities to be set at the site shall be arranged before starting the project and the specific designated locations of each shall be notified and agreed with a plot plan.

5.2.2.9 Boundaries of each demolishing zone shall be clearly defined, marked and fenced-off. Access to demolishing zones shall be controlled.

5.2.2.10 PPEs shall be wear on the site at all work time. The minimum basic PPEs:

5.2.2.10.1 Helmets.

5.2.2.10.2 Safety shoes.

5.2.2.10.3 Safety glass

5.2.2.10.4 Proper clothing.

5.2.2.11 Live equipment remaining within demolition asset areas shall be clearly marked.

5.2.2.12 Retired assets shall be physically disconnected, emptied and decontaminated in accordance with clause 4.3 in Y-OMS-441.

5.2.2.13 Energy isolation and verification:

5.2.2.13.1 YANSAB OMS-SHEM 08.11 identify the main guideline for energy isolation, and shall be followed in all energy type isolation requirement.

5.2.2.13.2 All energy isolation to be done by YANSAB direct hire or SMB employees prior to demolition activity start date.

5.2.2.13.3 Demolition Contractor shall use voltage detector before starting working in any Electrical equipment to ensure it is voltage free.

5.2.3 Safe Work Permit: A safe work permit is a 'form' or permit which is used to evaluate and identify hazards associated with dangerous and non-routine jobs in order to mitigate the chance of those hazards turning into issues, incidents, injuries or fatalities a guideline is provide.

5.2.4 Contractor shall develop and use their own Work Permit system, approved by principal Contractor and in line with IR demolishing EHSS Guidelines to perform their job safely. For illustration a guidelines for work permit system is shown in **Attachment 5**

5.2.5 Risk Management: Managing risks on the demolition projects is a process that includes risk assessment/Job Safety Analysis (JSA) and a mitigation strategy for those high risks activities. Example of JSA is shown in **Attachment 6**

5.2.6 Critical Activities (high risks):

5.2.6.1 Critical lifting: As Per OSHA, Critical lift means a lift that (1) exceeds 75 percent of the rated capacity of the crane or derrick, or (2) requires the use of more than one crane or support. Also, any lift above 50 tone. For lifting guideline refer to **Attachment 7**

5.2.6.2 Confined Space entry: confined space is a space that has limited or restricted means for entry or exit and is not designed for continuous occupancy. Confined spaces include, but are not limited to, tanks, vessels, silos, storage bins, hoppers, vaults, pits, manholes, tunnels, equipment...etc. For further information you may refer to work permit system guidelines in **Attachment 5**

Note: confined space work shall be minimized, in case required IR written approval is mandatory.

5.2.6.3 Working at height: Working at elevation for more than 1.8 meters and above is considered as working at heights. For example, Scaffold, ladders, vertical confined spaces, flare activity, man lift...etc. Refer to the working at heights guideline in **attachment 8.**

5.2.6.4 Hydro-jetting: Any activity that is using high-pressure machines. Guidelines are attached **Attachment 9.**

5.2.7 Contractors are required to state clearly how they are going to manage above activities by submitting and explaining a detailed Method statement for Principal Contractor approval.

5.2.8 Detailed JSA shall be developed & reviewed by EHSS and Execution leaders.

5.2.9 JSA and risk assessments shall be developed by contractors Execution Team prior to demolishing activities.

5.2.10 JSA's shall capture as well the health hazards with control measures for the Task.

5.2.11 The critical Activities would be undertaken only with approved formal JSA by Principal Contractor.

5.3 Environmental Requirements

5.3.1 All demolishing Contractors are requested to follow Royal Commission Environmental Regulation (RCER)-2015 requirements;

5.3.2 All demolishing Contractors to follow Environmental Management and Monitoring Plan Report attached with this guideline. **Attachment 10.**

5.3.3 In case of any leak, the Environmental team shall be informed immediately.

5.3.4 Waste handling:

5.3.4.1 Demolition Contractor shall maintain all waste manifest as mandated by Royal Commission Regulation

5.3.4.2 Demolition Contractor shall submit the waste manifest copies (the vendor will responsible and accountable for any missed manifest

5.3.4.3 Waste Reporting:

5.3.4.3.1 Daily waste reports including:

5.3.4.3.1.1 Date
5.3.4.3.1.2 RC Manifest
5.3.4.3.1.3 Waste description (as written in the manifest)
5.3.4.3.1.4 Type of waste (ex: solid, liquid or drums)
5.3.4.3.1.5 Quantities
5.3.4.3.1.6 Location/plant (Zone).

5.3.4.3.2 Monthly waste reports by using **Attachment 11.**

5.3.4.3.3 Recycle waste to be submitted in a monthly report

5.3.5 Underground water: the final report made by an approved Environmental contractor shows all the limits for the underground parameters. Any changes (increase) will be the Demolishing Contractor responsibility to make the necessary remediation and corrective actions as per RCEPCD recommendation. **Attachment 12.**

5.4 IH Requirement

5.4.1 All activities that have the potential to chemical, noise, Radiation, Carcinogen, and heat exposures to the working crew and nearby workers shall be identified prior of the demolition project. With a proposed control measures.

5.4.2 Health Assessment & Monitoring

5.4.2.1 All workers shall observe and report of any concerns that related to health to Industrial hygienist or safety representative to clarify it and do the needful.

5.4.2.2 Identify any new or unusual work activities or hazards that have not been previously assessed, and may require initial health hazard assessments

5.4.2.3 The activities which give exposure of hazardous chemicals to worker shall be evaluated through JSA in terms of level of exposure in order to recommend the appropriate control measure and to insure the correct PPEs are used.

5.4.2.4 Use of sampler tube (as applicable)

5.4.2.4.1 Prior of activities focal person shall ensure personal monitoring tube available.

5.4.2.4.2 Personal and Area monitoring will be conducted by Principal Contractor before start the activities and during the first three days only of the activities to assure no carcinogenic hazard.

5.4.2.5 Ensure efficiency of Illumination by (visual inspection / illumination survey) in all area including contractor temporary facilities.

5.4.2.6 All personnel in the plant are required to wear hearing protection equipment (ear plugs, ear muffs, or combination) in areas where machinery are operating also all activities that resulting high noise hazards to be identify (e.g. steaming to atmosphere, drilling, hydro jetting, etc.).

5.4.2.7 Identify any radiation exposure to any personnel at demolition project while using, repairing, transporting or working in or around equipment that contains radioactive materials if applicable.

5.4.2.8 Welding activity inside confined space should be equipped with local exhaust combined with filter.

5.4.2.9 Any contractor using chemicals shall declare the chemical list and its exposure limit and monitoring/sampling mechanism.

5.4.2.10 All Project personnel shall observe and take all necessary precautions against health risk.

5.4.2.11 Proper ergonomics techniques during manual lifting should be practiced to avoid any injuries. No person to be allowed to lift more than 23kg.

5.4.2.12 To avoid heat/cold stress, all the field workforce are advised to follow work schedule & drink plenty of water. It also advisable to follow the heat/ stress regimen (depending on the weather condition)

5.4.3 Suitable personal protective equipment shall be identified based on the hazardous exposure referring to SDS.

5.4.4 Respirators shall be identified as per NIOSH standards.

5.4.5 Heat stress shall be monitored during summer time (from 15th of Jun). with all control measures in place.

5.4.6 The contractors shall provide enough number of toilets, washing facilities, tents, mess whole, canteens, smoking shelters to their employees' with proper cleaning mechanism.

5.4.6.1 The number of toilets/washing facility shall as a minimum maintain a ratio of 1 toilet/washing facility for every 25 worker.

5.4.6.2 Washing Facilities

5.4.6.2.1 Clean hot and cold, or warm running water

5.4.6.2.2 Soap or other suitable means of cleaning

5.4.6.2.3 Towels or other suitable means of drying

5.4.6.2.4 Adequate ventilation and lighting

5.4.6.2.5 Showers may also be needed depending on the work being done

5.4.6.3 Potable Water, Food Handling and Disposal

5.4.6.3.1 Contractors shall ensure an adequate supply of potable water in all places of their work area.

5.4.6.3.2 Portable containers used to dispense drinking water shall be tightly closed, and equipped with tap.

5.4.6.3.3 Water cup shall not be dipped into containers. A common drinking cup is prohibited. Disposable cups shall be used.

5.4.6.3.4 The food distributed shall be wholesome, free of spoilage, and shall be newly processed, prepared, handled, and stored in such a manner as to be protected against contamination.

5.4.6.3.5 Garbage and other waste shall be disposed of at regular intervals (minimum twice a day for 24 hour shifts), or as required.

5.4.7 Portable medical clinic (first aider units) shall be provided at the site. Multiple contract may have an agreements to use the same unit as long as it can sever for its purpose. Contractor shall provide an authorized first aid practitioners at their clinic. Contracts with medical facilities (hospitals) is recommended.

5.5 Housekeeping

5.5.1 All personal are responsible to maintain a high standard of cleanliness at workplace.

5.5.2 Workplaces shall be kept neat and clean all the time.

5.5.3 At the end of the working period, all cables, hoses to be coiled and stored.

5.5.4 Compressed gas cylinders are kept in an upright position.

5.5.5 General waste, put into different type of bins.

5.6 Security Requirements

5.6.1 ID Cards process.

5.6.1.1 All Government Representatives must be Saudi.

5.6.1.2 Approval of IR Demolish Projects leader is mandatory.

5.6.1.3 All the required Saudi government documents must be attached.

5.6.1.4 Clear Iqama copy and recent personnel photo must be attached.

5.6.1.5 Internal agreement must be attach for (subcontractor) employment.

5.6.1.6 Safety orientations is mandatory for all contractors before ID process.

5.6.1.7 All ID cards will be smart cards, and can be used during IN/OUT.

5.6.1.8 Any lost ID card will cost 500 SAR as per SABIC policy.

5.6.1.9 All ID cards must be returned to issuer (ID section) by end of IR Demolishing Projects.

5.6.2 To obtain car sticker.

5.6.2.1 Fill the request form.

5.6.2.2 Clear copy of YANSAB ID, Iqama and driving license.

5.6.2.3 Car must be in good condition & passed the inspection.

5.6.2.4 Any lost/missing car sticker will cost 500 SAR as per SABIC policy.

5.6.2.5 Minimizing plant stickers for urgent required used.

5.6.2.6 Approval of Project Manager required

5.6.2.7 The work end with any contractor should be linked with the a clearance form from the GR&ID Department

5.6.3 Security Patrol

5.6.3.1 Security patrol will be running 24/7.

5.6.3.2 Security patrol will cover traffic, road, and project villages

5.6.4 Security Violation

5.6.4.1 All security violation must be investigated by security dept.

5.6.4.2 IR regulations and instructions must be complied.

5.6.4.3 Violation consequences and penalties will follow IR System.

5.6.5 Wireless Devices

5.6.5.1 The approval of EHSS Department must be obtained before ordering any walkie-talkies devices.

5.6.5.2 All devices must be registered with the Security Department

5.6.5.3 All devices must comply with the company's safety law and cybersecurity requirements

5.6.5.4 The project owner responsible for the wireless devices until the end of the project.

5.6.5.5 Lost or damaged of IR devices will be subject to the company's procedures.

5.6.5.6 Contractors' communication devices will be allowed to enter the plant after approval and It will not be allowed to take it out of the plant until the end of Project completion.

5.6.5.7 A special permit will be issued to the contractor's necessary communication devices after the approval of EHSS and the concerned department.

5.6.6 Material Gate Pass

5.6.6.1 The Material Gate Pass shall be fill with all required information and approved by Principal Contractor. Sample of gate pass is shown in **Attachment 13.**

5.6.6.2 Copy of the Material Gate Pass Form shall submitted to security gate-4.

5.6.6.3 The vehicles or trucks must be inspected by security personnel and fill the Security Inspection Form as shown in **Attachment 14.**

5.6.6.4 Some trucks or vehicles (crane, forklift, ISO tank, etc...) which needs a third party to inspect, the concerned Demolition Contractor is responsible for arranging the required inspection.

5.6.6.5 The concerned Demolition Contractor shall escort his vehicles, materials from the security gate-4 to his zone and back after loading/un-loading.

5.6.7 Traffic, Logistic And Facilities Plan

5.6.7.1 Traffic Plan

5.6.7.1.1 All equipment (i.e.: cranes, trucks and etc.) which will be traveling inside the plant shall be planned as detailed as possible before the project.

5.6.7.1.2 Security shall control all traffic during the Project. A plan shall be submitted by the Demolishing Contractor as part of the EHSS Plan indicating the number of heavy machineries, types of heavy machines, and travel routes and parking locations.

5.6.7.1.3 People movement in-out of the plant area, designated walking path should be identified as pedestrian lines along with barricade as well as signage/direction to avoid unnecessary any contact with vehicles and heavy machinery.

5.6.7.2 Lay down Area/plant area

5.6.7.2.1 Temporary site/area for contractors to locate their equipment shall be identified inside their zones.

5.6.7.2.2 It is recommended for all mobile equipment (i.e.: cranes, trucks, forklift) to be parked at this area while not in use as to avoid area congestion and create unsafe condition to the people working inside the plant.

5.6.7.2.3 Heavy Equipment, e.g. Crane, Boom Truck, etc. shall not travel without escorted and a Flagman.

5.6.7.3 Temporary Facilities Plan

5.6.7.3.1 Mess halls, Prayer rooms, Smoking Shelters, Vehicle Parking Area will be provided for project employees based on approved lay out. The following should be observed when using the facilities:

5.6.7.3.1.1 Employees should practice self-discipline especially on health & sanitation practices.

5.6.7.3.1.2 Lunch/dinner should be consumed in the Mess hall only. Never eat in the operation areas as it may lead to possible contamination.

5.6.7.3.1.3 Smoke only in the designated smoking shelter. Ensure that cigarette butts are properly disposed in designated trays/containers.

5.6.7.3.1.4 Sleeping in the Temporary Facilities and work areas is strictly prohibited.

5.7 Working Hours

5.7.1 Working hours for employee and contractors during demolishing project shall follow the following guidelines.

5.7.1.1 Working hours for employees and contractors should not exceed 12 hrs. Per day including provision for overtime as per Saudi Labor Law.

5.7.1.2 Employees and contractors should not work more than (6) days continuously without a day off

5.8 Emergency Response

5.8.1 Demolition Contractors shall develop and use their own Emergency Evacuation plan to comply with IR demolishing EHSS guidelines

5.8.1.1 All personnel shall know the ways of announcing emergencies.

5.8.1.2 All Demolition contractors are responsible to develop effective announcing emergency methods.

5.8.1.3 Demolition Contractor shall submit their emergency protocol guideline as part of their EHSS Plan for endorsement by the Principal Contractor.

5.8.1.4 Demolition Contractor shall provide their own rescue tools, and ensure to obtain prior use approval.

5.8.1.5 Demolition Contractor shall Identify proper emergency assembly points with a plot plan posted and know by all workers.

5.8.1.6 Demolition Contractors shall provide a portable clinic (first aid unit) with first aid practitioner, first aid kit, and an ambulance. (multiple contractors may have an agreement to use same unit)

5.8.1.7 Demolition Contractors shall provide the proper number and type of fire extinguishing means.

5.8.1.8 In case of Major Fire, YAMA need to be activated through phone# 0143960000/1911 by IR Shift manger.

5.8.1.9 Demolition Contractors shall provide their own rescue team with Rescue qualification

5.9 Incident Reporting and Investigation Requirements

5.9.1 All personnel shall report all work related incident occurring within the demolition project to the Site in charge, contractor management, or contractor EHS representatives.

5.9.2 Project leader (IBN RUSHD/Principal Contractor) shall be informed about incidents immediately and he should report the same to IR project Director and EHSS project leader.

5.9.3 Project leader (IBN RUSHD/Principal Contractor) is responsible to ensure the incident has been reported by the Demolition Contractor using the following reporting forms:

5.9.3.1 For English Reporting **attachment 15.**

5.9.3.2 For Arabic Reporting **attachment 16 (HCIS Report)**

5.9.4 All incidents shall be investigated timely and the report to be shared with EHSS project leader within 15 working days. If investigation need more than 15 working day, a written approval shall be granted for the agreed period.

5.9.5 On monthly bases, EHSS Statistic Report shall be submitted to the EHSS project leader using **attachment 17.**

5.10 Legal and Regulatory Requirements

5.10.1 applicable regulatory authorities such as:

5.10.1.1 HCIS-SAF and SEC, Higher Commission for Industrial Security

5.10.1.2 HRSD, Ministry of Human Resources and Social Development

5.10.1.3 RCEPCD, royal commission environmental protection and control.

5.10.1.4 Ministry of Interior

5.11 Control of Records

5.11.1 All of the below records shall be maintained until the completion of the demolition project and handed over to IR EHSS team:

5.11.1.1 Approved JSA, Job safety analysis
5.11.1.2 Approved RA, Risk Assessment
5.11.1.3 Approved EHS plan.
5.11.1.4 Incidents records.
5.11.1.5 Incidents Investigation
5.11.1.6 Incidents & observation analysis,
5.11.1.7 Environmental waste records,
5.11.1.8 EHSS Audits,
5.11.1.9 Total man-hours of (direct, contractor, subcontractors),
5.11.1.10 Project lesson learned

6 REFERENCES

6.1 Standards

Input	Interface / link
RCER-2015	Royal Commission Environmental Regulation (Rcer)-2015
HCIS-SAF	High Commission For Industrial Security (Safety)
HCIS-SEC	High Commission For Industrial Security (Security)
Yansab SHEM 08	Safe Work Practices
Yansab SHEM 10	Incident Reporting And Investigation
Yansab SHEM 11	Emergency Planning
Yansab SHEM 12	Health And Industrial Hygiene
Yansab SHEM 13	Environmental Standards
Yansab SHEM 14	Security Standards

6.2 Glossary, Formulae & Definitions

Glossary	Definition
EHSS Incident	An unwanted, unplanned or malicious event or attempted malicious act, which resulted or could have resulted in a negative EHSS consequence.
Loss of Primary Containment	An unplanned or uncontrolled release of any material from primary containment, including non toxic and non flammable materials (e.g. steam, hot water, nitrogen, compressed CO 2 , or compressed
Property Damage	All EHSS incidents that resulted in damage to YANSAB property/equipment caused by an accident but excluding damage to the property/equipment due to Fire, normal wear and tear.
Lost Workday Injury / Illness (LWI)	Any injury / illness because of which employee is unable to work the next calendar day.
API 754	American Petroleum Institute Guide to Reporting Process Safety Events

Glossary	Definition
Incident Rate – Direct Employee *	The Incidence Rate for recordable injury/illness can be computed by using the following formula: IR (SABIC Entities/Divisions employees): (Number of Recordable Injuries/illnesses x 200,000) / (Entity/SABIC Direct Hire Employees Man-hours worked)
Incident Rate – Contractor *	Contractor employees): (Number of Recordable Injuries/illnesses x 200,000) / (Contractor Employees Man-hours worked) 200,000 is the equivalent of 100 full-time employees working for 40 hours per week for 50 weeks per year (OSHA guidelines).
Process Safety Event	Unplanned release is any release that has not been designed to release (i.e.. release that is not accepted by PHA), and that has not been scheduled and prepared for (i.e.. transient operations to prepare for maintenance). Uncontrolled release is any release that resulted in one of the following consequences: * Injury * Fire * Explosion * Rainout * Discharge to a potentially unsafe location * Officially declared community evacuation or community shelter-in-place, including precautionary * Public protective measures (e.g. road closure), including precautionary * On-site shelter-in-place or on-site evacuation, including precautionary
Security Incident rate *	The Security Incident Rate can be computed by using the formula: SIR: Security [(∑Class A x 50)+(∑ Class B x 5)+(∑ Class C x 1)] x 200,000 / Total Man-hours Worked

6.3 Other References

1 OSHA Guidelines

2 OSHA_FS-3647_Welding

3 NIOSH http://www.cdc.gov/niosh/docs/2003-154/

4 API-754-Thired-ED

7 APPENDIX

Key additional material supporting the development, documentation and implementation of the standard.

Attachments	Definition	
Attachment 1	OMS-441(ASSET RETIREMENT)	YMS-OMS-P-441.00_ _Asset_Retirement.p
Attachment 2	TRANSFER OF RESPONSIBILITIES (TOR)	YMS-OMS-441.00-F-06 Transfer of Respc
Attachment 3	PLANT LAYOUT (TOR AREAS)	Zone Segregation (TOR).pdf
Attachment 4	TRANSFER OF RESPONSIBILITIES (TOR) HANDBACK	YMS-OMS-441.00-F-07 Transfer of Respc
Attachment 5	WORK PERMIT	Work Permits.pdf
Attachment 6	JOB SAFETY ANALYSIS FORM	Job Safety Analysis (JSA) Form.xlsx
Attachment 7	LIFTING GUIDELINES	Lifting_Guidelines. pdf
Attachment 8	WORKING AT HEIGHTS	Working_at_Height .pdf
Attachment 9	HIGH PRESSURISE JETTING EQUIPMENT GUIDELNIES	YMS-MPL-GL-4002 HIGH PRESSURISE W/ YMS-MPL-GL-4001 HIGH PRESSURISE W/

Attachments	Definition	
Attachment 10	ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN REPORT	Final EMMP rev 03.pdf
Attachment 11	MONTHLY WASTE REPORTS	Waste Stream Tracking Record.xlsx
Attachment 12	UNDERGROUND WATER REPORT	Format under development
Attachment 13	MATERIAL GATE PASS FORM	Format under development
Attachment 14	SECURITY INSPECTION FORM	Format under development
Attachment 15	INCIDENT ENGLISH REPORTING	EHSS Incident Notification Form.dc
Attachment 16	INCIDENT ARABIC REPORTING	HCIS Report.docx
Attachment 17	EHSS STATISTIC MONTHLY REPORT	EHSS Incident Statistics & EHSS Inc
Attachment 18	INCIDENT GUIDELINE	EHSS Incident guidelines.docx

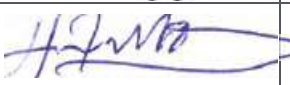
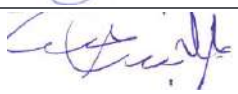
YANBU NATIONAL PETROCHEMICAL COMPANY

(YANSAB)

Document No.: YMS-OMS-P-441.00

Document Name: Asset Retirement

Rev. No.: 02

	Position	Name	Signature	Date
Originator	Element Leader	Amro M. Eid		22/12/2022
Reviewed by	Quality Assurance Team Member	Hamed Fallatah		22 Dec '22
		Wesam Taiyar		22-Dec-2022
	OMS Administrator	Abdurrahman Ogues		22.12.2022
	Dimension Chairman	Hossam Al-Hujaili		22 Dec. 2022
Approved by	OMS Leader	Majed Al-Ahmadi		25-12-2022

REVISION HISTORY

Revision No.	Effective Date	Revision Description
00	Sep-2019	Initial issue.
01	Nov-2021	Procedure enhancements and alignment of Appendix section.
02	Dec-2022	1. Closure of iMEA assessment findings. 2. Addition of new attachments as follows:- a. Decommissioning compliance checklist b. Management of disposed or mothballed assets compliance checklist c. Initiation form by operation 3. Changing attachment "Demolition Method of Statement checklist" from form (F) to checklist (CL). 4. Replacing SABIC with YANSAB in definitions. 5. Update the Demolishing part of the procedure and the relevant attachments to include the demolishing strategy and structure of IR Retired Assets Demolishing Project 6. Updated Legal and Regulatory requirement section

CONTENTS

1 PURPOSE

The purpose of this procedure is to ensure the following:-

1.1 Mitigate EHSS, reliability and integrity risks, which could arise from a decision to withdraw assets in YANSAB from service due to business considerations or at the end of their useful life.

1.2 Provide guidance to decommissioning, monitoring and demolishing of the identified assets.

This management system shall be used in conjunction with the Management of Change procedure (YMS-P-SHEM-09.00).

2 SCOPE

2.1 The scope of this procedure is applicable whenever any building, plant or equipment owned or operated by YANSAB is taken out of use.

2.2 This procedure covers the arrangements for decommissioning of the asset in preparation for either demolition, or ongoing management of the asset as either disposed or mothballed plant.

2.3 A plant or section of a plant, which will be taken out of service for less than six months, is outside the scope of this procedure.

3 ROLES AND RESPONSIBILITIES

3.1 System requirements and responsibilities communicated to ensure all involved understand the objectives and their specific responsibilities/accountabilities.

3.2 Responsibility Assignment Matrix, indicating the Responsible, Accountable, Consulted and Informed (RACI) roles for high-level activities as below.

Activity Description	YANSAB Management Team	Sr. Manager / Manager Operations	Sr. Manager, PDC	Demolishing Project Leader	APM Engineers / Manager	Ops. / Maint. / EHSS Representatives	Technical Discipline Engineers
Confirm mothballed plant/assets status (mothballed or disposed)	A	R	-	-	C	C	C
Ensure decommissioning policy is defined and implemented	-	A	-	-	R	R	C
Produce and manage an Environmental Impact Statement (EIS) for decommissioning	-	A	-	-	C	R	C

Activity Description	YANSAB Management Team	Sr. Manager / Manager Operations	Sr. Manager, PDC	Demolishing Project Leader	APM Engineers / Manager	Ops. / Maint. / EHSS Representatives	Technical Discipline Engineers
Ensure compliance to all regulatory requirements in decommissioning the assets	A	R	-	-	C	C	C
De-inventory of plant and assets	I	A	-	-	C	R	C
Define and manage isolation for all energy sources	I	A	-	-	C	R	C
Ensure Budget and resources are allocated for the management of mothballed/disposed assets	A	R	R	-	C	C	C
Develop and manage maintenance and inspection strategies for remaining equipment	I	I	-	I	A	C	R
Produce and manage a decommissioning handover dossier	I	A	-	-	C	R	R
Ensure CAPEX Budget and resources are allocated for decommissioning and management of mothballed/disposed assets	A	C	R	R	-	C	C
Manage the retired assets demolishing project	A	C	C	R	-	C	C

Table 3.1 - Responsibility Assignment Matrix

4 REQUIREMENTS

4.1 Asset Retirement

4.1.1 When a plant/asset is retired at the end of its useful life or due to business conditions, there are four phases to be considered:

4.1.1.1 Business / Technical Decision: Operation Senior Manager shall submit for YMT approval the list of assets proposed to be demolished / mothballed utilizing the Asset Retirement Initiation Form (YMS-OMS-441.00-F-08).

4.1.1.2 Decommissioning.

4.1.1.3 Interim Management of Disposed or Mothballed Plant (pending demolition or re-use).

4.1.1.4 Demolition (if determined that the asset should be disposed of).

4.1.2 An optimum mothballing procedure shall be developed considering economic alternatives, proper safeguarding, preservation at optimal cost to prevent deterioration, the expected time of recommissioning, the value of equipment involved and the maintenance cost required to maintain it in a safe state.

4.2 Asset Retirement Flow Diagram

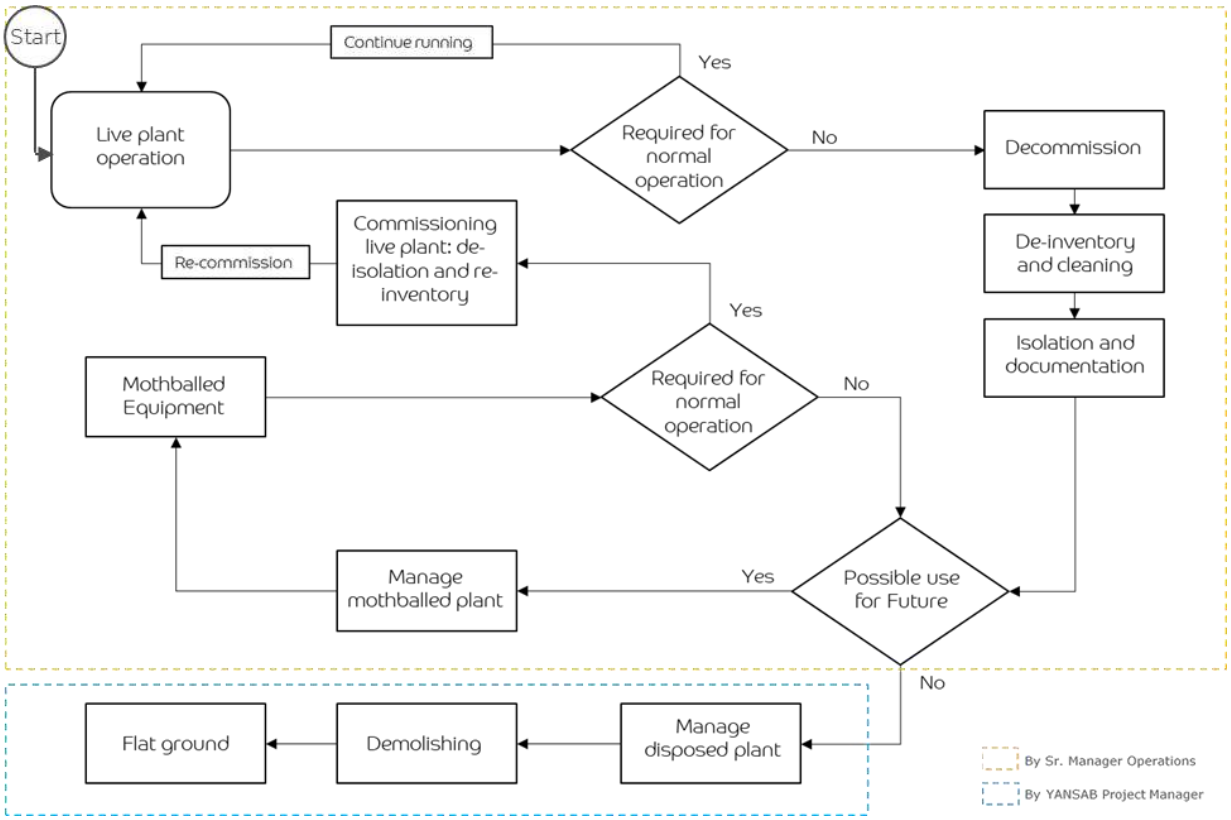


Figure 4.1 - Asset Retirement Flow Diagram

4.3 Business / Technical Analysis

4.3.1 The focus of the business / technical analysis is to identify, review and provide the list of assets to be demolished / mothballed due to business requirements, aging, obsolete assets or mechanical integrity concerns to mitigate manufacturing risks (EHSS, reliability and integrity) to aid in the decision process.

4.3.2 The following steps illustrate the decision process and requirements, which shall be implemented using the Asset Retirement Initiation Form (YMS-OMS-441.00-F-08) by Operation representative:

4.3.2.1 Identification of relevant assets

- Operation Senior Manager shall identify, assets, which based on business requirements, aging, obsolete assets, mechanical integrity concerns, historical data or threats need to be mothballed or demolished.

4.3.2.2 Approval of relevant assets

- YANSAB Master Authority Schedule (MAS) shall be followed for approval of the relevant assets retirement.

4.4 Decommissioning

4.4.1 The decommissioning phase of a plant/asset consists of three sub-phases: de-inventory phase, decontamination phase and an isolation phase.

4.4.1.1 De-inventory phase:

i. Timing: Immediately after the plant/equipment is taken out of service

ii. Main activities: Bulk transfer and recovery of working capital materials

4.4.1.2 Decontamination phase:

i. Timing: Following on from the de-inventory phase

ii. Main activities: Remove remaining residual chemicals from the plant and cleaning of systems to a safe and known documented condition. The cleaning standard may be different depending on whether the assets are managed as mothballed or as disposed plant.

4.4.1.3 Isolation and removal of non-process materials, documentation:

i. Timing: Following on from the decontamination phase

ii. Main activities: Isolation of the asset both physically and electrically to an agreed procedure and documentation of the final status of all plant and equipment.

4.4.2 All plant assets will be considered as live (and subject to normal monitoring/maintenance/inspection schedules) until equipment has been fully decommissioned to the agreed final state.

4.4.3 For detailed explanation of the decommissioning phase, attachment YMS-OMS-441.00-GL-01 (Decommissioning Guidelines) shall be referred to.

4.4.4 All decommissioning activities shall be undertaken in accordance with YANSAB EHSS policy, plans and procedures. Compliance with existing management systems and consents is required, unless formal dispensation is agreed. This procedure on its own is not a substitute the Management of Change (YMS-SHEM-P-09.00) management system.

The change of status of the assets will be considered as a 'modification'.

4.4.5 Detailed decommissioning plans, procedures, job methods and engineering definitions shall be developed for each plant area to be decommissioned, based upon the key principles contained within this document. This will cover all aspects of process and electrical isolation, decontamination and waste disposal.

4.4.6 Competent personnel in accordance with the plans, procedures, job methods and engineering definitions developed for this purpose shall complete the decommissioning activities.

4.4.7 Fully signed records shall be kept on the decontamination and standards of cleanliness achieved (based on draining from low-points, visual inspection via manways and atmospheric testing/analysis). Isolations based on 'air gap' principles are preferred rather than closed valves of plates/blinds.

4.4.8 Boundaries of decommissioned assets shall be clearly defined and marked and fenced-off where practicable. Access to decommissioned assets shall be controlled. Live equipment remaining within decommissioned asset areas shall be clearly marked.

4.4.9 A Decommissioning Handover Dossier (YMS-OMS-441.00-F-01) shall be produced for each decommissioned plant area. This dossier shall provide a record that the assets have been decommissioned safely, effectively and to what standard of cleanliness. This shall also provide essential information for the ongoing management of the asset as either mothballed or disposed plant prior to restart or eventual demolition.

4.4.10 Following decommissioning, interim ownership of the assets shall be defined and the assets shall be controlled in accordance with attachment YMS-OMS-441.00-GL-02 (Management of Disposed or Mothballed Assets Guidelines) to ensure they remain in a safe condition pending eventual restart or demolition. Demolition and dismantling activities shall be controlled in accordance with attachment YMS-OMS-441.00-GL-03 Demolition Guidelines.

4.4.11 Decommissioning compliance checklist (YMS-OMS-441.00-CL-01) shall be followed and filled by operation representative to ensure all decommissioning requirements are met.

4.5 Interim Management of Disposed or Mothballed Plant

4.5.1 All activities associated with the management of disposed or mothballed assets shall be undertaken in accordance with YANSAB EHSS policy, plans and procedures. Compliance with existing management procedures is required, unless formal dispensation is agreed.

4.5.2 There shall be clear operational ownership of the disposed or mothballed assets to ensure that they remain in a safe condition pending eventual demolition or re-use.

4.5.3 After assigning an area owner, budget and resources shall be allocated to carry out the planned tasks during the interim management period.

4.5.4 Disposed and mothballed assets shall be physically disconnected, emptied and decontaminated in accordance with clause 4.3 of this document.

4.5.5 Boundaries of disposed and mothballed assets shall be clearly defined, marked and fenced-off where practicable. Access to disposed and mothballed assets shall be controlled. Live equipment remaining within disposed and mothballed asset areas shall be clearly marked.

4.5.6 A decommissioning/handover dossier shall be produced for disposed or mothballed assets in each area. This dossier shall provide a record that the disposed or mothballed assets have been decommissioned safely and effectively in accordance with clause 4.3 of this document.

4.5.7 The developed decommissioning / handover dossier shall provide essential information for the ongoing management of the disposed or mothballed asset and for eventual demolition.

4.5.8 If mothballed or disposed assets are known to be in an area and do not have a decommissioning dossier, checks shall be conducted to understand what condition the assets are in (e.g. cleanliness, physical and electrical isolations etc.) in order to perform a suitable risk assessment and identify ongoing management controls.

4.5.9 A disposed (or mothballed) asset management plan shall be produced which will ensure compliance with any legislation and EHSS requirements, pending demolition, and ensure safe access to the asset (where required).

4.5.10 A disposed or mothballed assets register shall be produced as part of the mothballed asset management plan. Records shall be kept for the life of the asset. At the point of demolition, the requirements of clause 4.5 of this document shall apply.

4.5.11 Assets which have not been physically disconnected, emptied and decontaminated in accordance with clause 4.3 of this document cannot be regarded as disposed or mothballed assets and are not covered by this procedure. Such assets are covered by existing YANSAB procedures as per other operating assets.

4.5.12 Management of disposed or mothballed assets compliance checklist (YMS-OMS-441.00-CL-02) shall be followed and filled by operation representative to ensure all mothballing requirements are met.

4.6 Demolition

4.6.1 Demolition of Disposed Plant

The demolition process consists of four main topics:

4.6.1.1 Selecting the Demolishing Strategy.

4.6.1.2 Organizational Arrangements for Management and Supervision of Demolition

4.6.1.3 Project Arrangements.

4.6.1.4 Technical Definition.

4.6.2 Training of all relevant personnel on awareness of the requirements and responsibilities detailed in this procedure, and advanced competence in specialist topics is essential to the successful implementation of demolishing projects.

4.6.3 The disposed or mothballed assets shall be financially treated in accordance to Business direction through the Surplus Disposal Committee (SDC).

4.6.4 YMT shall nominate a Demolishing Project Leader.

4.6.5 After assigning the Demolishing Project Leader, budget and resources shall be allocated for smooth set up and execution of the Demolition Project.

4.6.6 Demolishing of any plant, equipment, structure or building shall be planned and carried out in such a manner as to prevent, as far as is reasonably practicable, any undesirable EHSS consequences.

4.6.7 Compliance with this procedure and specifically the requirement for written designs, plans, risk assessments and method statements should ensure compliance with local authority regulations.

4.6.8 A competent person shall supervise the demolition activity. Due to the nature of demolition activities, YANSAB might use external specialists, engineers and consultants to assist in the management of a demolition project and demolition contractors. YANSAB management have the responsibility for ensuring that the competence of such external advisors and engineers has been checked by means of qualifications, proven experience and demonstration of competence in the theory, methods and best practices which are relevant to demolition (e.g. structural engineering, demolition techniques, pre-weakening, lifting, cutting machinery, residual hazards on process plants).

4.6.9 Local authorities shall be given prior notice of any demolition work commencing.

4.6.10 Demolition activities in general reduce plant equipment, structures and buildings to ground floor slab level. Below ground floor slab level demolition (e.g. drains, sumps, foundations and buried pipework) shall be approved by Demolishing Project Leader after consulting YANSAB Environmental Team.

4.6.11 The need for ground remediation/rehabilitation in accordance to local regulatory authority's requirement shall be approved by Demolishing Project Leader after consulting YANSAB Environmental Team.

4.6.12 Demolition Method Statements Checklist (YMS-OMS-441.00-CL-03) shall be followed while preparing any demolition project method of statement either by YANSAB Demolishing Leader or by a principal contractor.
Distinct Roles in SABIC Demolition Projects

4.7 Legal and Regulatory Requirements

All applicable local, national, and state/regional regulations and requirements and all international standards and treaties to which YANSAB subscribes are identified and listed in YMS-OMS-235.00-L-01 (List of Applicable Regulations) and has been included in YMS-OMS-P-235.00 & assessed for compliance as per YMS-OMS-P-232.00 procedures.

4.8 Control of Records

4.8.1 The following documentation/records developed and maintained as per legal requirements and according Documentation & Control of Records (YMS-OMS-P-234.00) procedure.

4.8.2 In case of any change in the documentation and records of this procedure, the leader of this system will update leader of YMS-OMS-P-234.00.

S/N	Record Description	Type	Location	Responsibility	Retention Period
01	Approved copy of Procedure (YMS-OMS-P-441.00) & attachments	Hard	Office of OMS Administrator	OMS Administrator	3 years
		Soft	Q-Pulse / OMS Portal	TQM Specialist	3 years
02	Editable copy of procedure & attachments (Word/Excel files)	Soft	Office of OMS Administrator	OMS Administrator	Current

Table 4.1 - Documentation (Procedure)

S/N	Record Description	Type	Location	Responsibility	Retention Period
01	Handover Dossier (YMS-OMS-441.00-F-01)	Hard & Soft	Q-pulse	Operation Manager	5 Years
02	Management of Changes	Soft			

Table 4.2 - Implementation Record

5 COMPETENCY

5.1 Competency matrix is developed in accordance with Training & Competencies procedure (YMS-OMS-P-131.00). The key skills and knowledge required to implement successfully this procedure are identified in Table 5.1 below.

5.2 The criteria for the proficiency levels [D/P/A] is defined in YMS-OMS-P-131.00 (Training & Competency Procedure).

Competency	Type	YANSAB Management Team	Sr. Manager / Manager Operations	Sr. Manager PDC	Demolishing Project Leader	APM Engineers / Manager	Ops. / Maint. / EHSS Representatives	Technical Discipline Engineers
Decommissioning policies and procedures		P	P	-		A	A	P
Regulatory and environmental requirements		P	P	P		A	A	P
De-inventory and isolation procedures		-	-	A		A	-	P
Maintenance and inspection strategy development		-	-	-		A	P	P

Table 5.1 - Competency Matrix

Competency Types: Core, Leadership, Functional

Proficiency Levels: D Developing, P Proficient, A Advanced

6 CONTINUAL IMPROVEMENT

To ensure continual improvement, procedures need to employ mechanisms for regular review and challenge of performance.

The following will be defined and established:

6.1 Processes and KPIs that are required to effectively measure the performance of the impact of this procedure. The evaluation of realization of benefits from the procedure should utilize effective KPIs in alignment with Performance Management Procedure (YMS-OMS-P-211.00). The following KPIs will be used as a minimum:

6.1.1 De-commissioning Readiness (YMS-OMS-441.00-PI-002)

6.1.2 Decommissioning Schedule Index (YMS-OMS-441.00-KPI-001)

6.1.3 Maintenance ratio % (KPI197 in Bluebook)

6.1.4 Asset Retirement Management Compliance (YMS-OMS-441.00-PI-001)

6.2 Review of performance against this procedure and the results of these reviews used as input to the Continual Improvement Plans in accordance with Continual Improvement Framework (YMS-OMS-P-511.00) procedure. Regular review meetings will be conducted based on the expected duration of the impact expected, as per Table 6.1 below.

Event	Description	Frequency	Responsible	Participants
Amendment of status	Ensure that disposed and mothballed assets are subject to review to confirm whether any amendments to the status of the assets is required.	Annual	Sr. Manager, Asset Engineering	Representatives from operations, maintenance and business / commercial teams.
Confirmation of decommissioning	Confirm that the disposed or mothballed asset has been decommissioned in accordance with Section 4.3 and that the necessary documentation has been completed.	One time meeting - before commencing with disposal or place into mothballed	Assigned Manager, Operations	Representatives from operations, maintenance and business/ commercial teams.
CAPEX budget development	Ensure that disposed and mothballed assets are subject to review – e.g. as part of annual CAPEX budget development - to confirm whether any amendments to the status of the assets is required.	Annual	Sr. Manager, PDC	Representatives from operations, maintenance and business/ commercial teams.

Table 6.1 - Performance Review

6.2.1 Identification of effective CI methods and tools from the Continual Improvement Framework procedure (YMS-OMS-P-511.00).

6.3 Statistical tools will be used to analyze the performance of this procedure in accordance with Process and Continual Improvement Methodologies, Problem Solving Tools & Techniques procedure (YMS-OMS-P-521.00).

6.4 Performance improvement, as well as any associated corrective and preventive actions, will be documented and tracked, then communicated to concerned personnel and stakeholders on yearly basis.

7 REFERENCES

7.1 Links with Other OMS procedures

Input	Interface / link	Output
YMS-OMS-P-111.00	Define the leadership commitment and culture	
YMS-OMS-P-131.00	Define the training and competencies required for the workforce development programs.	

Input	Interface / link	Output
YMS-OMS-P-211.00	KPI's and Measurements	
YMS-OMS-P-235.00	Identification of any site-specific regulatory requirements	
YMS-OMS-P-234.00	Identify and describe the record control requirements pertaining to this procedure	
YMS-SHEM-P-09.00	Initiation of decommissioning process.	
YMS-SHEM-P-09.00	Request for capital budget submission for demolition of disposed assets.	YMS-OMS-P-214.00
YMS-SHEM-P-09.00	Asset status change in master data for: 'De-activation' – Temporary Asset status change in master data for: 'Deletion' – Permanent Asset status change in master data for: 'Scrapped' – Permanent	YMS-OMS-P-431.00
YMS-SHEM-P-09.00	Trigger to review asset criticality ranking and Asset Strategy of assets that are impacted due to de-commissioned assets during MOC review.	YMS-OMS-P-433.00
	Establish a rhythm to review performance against this procedure	YMS-OMS-P-511.00
	Analyze the performance of this procedure	YMS-OMS-P-522.00

Table 7.1 - Interfaces and Linkages

7.2 Glossary, Formulae & Definitions

Glossary	Definition
Decommission	Taking an asset out of operational service and leave in a defined condition in accordance with Section 4.34.3 of this document. Assets that have not been decommissioned should be subject to normal maintenance and inspection regimes, even if they are not 'on-line'.
Decommissioning Handover Dossier	A document compiled for each plant area containing comprehensive information on the status/condition of the decommissioned plant and equipment. **Note:** The dossier is not intended to contain detail on the wider range of system updates and record changes that are required by Management of Change (MOC).
Decommissioning Manager	The person nominated by the Senior Manager, Operations to manage the decommissioning activities.

Glossary	Definition
Decontaminate	Removal of remaining specified process materials, after plant de-inventory to a certified level of cleanliness (from a process chemicals/materials hazard perspective).
De-inventory	Removal of bulk plant inventory and other specified process materials.
Demolishing Project Leader	The person assigned by YMT to manage the demolition project.
Demolition	Physical removal of equipment from the asset area, typically for off-site disposal or recycling.
Disposed Assets	Assets that have permanently been taken out of service with no intention of being used again. The asset must have been decommissioned in accordance with Section 4.3 of this document to be regarded as a disposed asset.
Disposed or Mothballed Asset Management Plan	An assessment of risks arising from an asset, and an outline of all monitoring, inspection and maintenance program which are mitigations to manage risks and ensure compliance with any legislation and EHSS requirements, pending demolition, to ensure compliance with any legislation and EHSS requirements, pending demolition (plan is contained within FORM- YMS-OMS-441.00-F-01).
Disposed Plant	Assets permanently taken out of service with no intention of being used again.
EIS - Environmental Impact Statement	A document describing all waste streams (to air, land or water) arising from decommissioning and the risks posed by these streams.
Electrical Disconnection	Electrically isolated by the physical removal of a fuse or cable disconnection at the source of supply.
Manager, Operations	The person nominated by the Senior Manager, Operations for the area or equivalent as responsible for the area of the plant to be demolished (see MP 1341 - Responsibilities Map)
MOC	Management of Change
Mothballed Assets	Assets that are currently not in operation, and where future use is undefined. **Note:** Mothballed assets must have been decommissioned in accordance with Section 4.3 of this document in order to be regarded as a mothballed asset. Assets that are simply 'off-line' are not 'mothballed' and are therefore not exempted from normal inspection and maintenance regimes. Assets which are 'out of service' can have inspections suspended, but not cancelled, and should be subject to ongoing risk review under the relevant integrity management procedures.

Glossary	Definition
Mothballed Assets Management Plan	After decommissioning, an asset management plan for the mothballed assets is required to ensure compliance with any legislation and EHSS requirements whilst maintaining the equipment in such a state that it may be brought back into service with minimum cost and timescale.
Mothballed Plant	Assets temporarily taken out of service with the intention that they may be used again.
MSDS	Material safety data sheet or Safety data sheet
Non-process Materials	Materials which are present on the plant but are not processed or changed by the plant production processes i.e. lubricating oil, desiccant, catalyst, utilities. These materials may, however, be contaminated or pose hazards not described on the supplier's MSDS.
Physical Disconnection	Where equipment is separated from other equipment by physical removal of connecting pieces. In the case of piping systems, physical disconnection will involve the removal of an existing piping spool and blanking the open ends or, in the case of fully welded pipework, the cutting out of a section of pipework and installing flanges and blanks on the open ends of the remaining pipework. The exception to this is battery limit isolations. In these cases, a blank will be fitted on the 'battery limit side' and the plant side will be left open. This will apply if an existing spool is removed, or a section of pipework is removed.
Physical Isolation	Where equipment is isolated from other equipment by the closing or fitting of slip-plates or by a physical disconnection.
Principal Contractor	The main contractor who is appointed to manage and supervise the demolishing contractor(s). This contractor may be responsible for delivering other services as part of his scope to integrate and manage the project delivery. e.g. Auction services, engineering consultancy, demolishing consultancy, etc.
Process Materials	All materials that are processed or used as part of the plant production processes.
Retirement	Whenever any building, plant or equipment owned by SABIC Division/Entity is taken out of use on either a temporary or a permanent basis. It covers the arrangements for decommissioning of the asset in preparation for either demolition, or ongoing management of the asset as either mothballed or disposed plant.
Structural Advisor	A person appointed by the YANSAB Demolishing Project Leader to provide advice on management of risks arising from the structural integrity throughout the demolition project.

Glossary	Definition
	It is assumed that the advisor is member of SABIC Manufacturing Asset Integrity team. If become required and based on the complexity of the project, then the Demolishing Project Leader and the structural Advisor may choose to hire a 3rd party consultant to act as the Project Structural Advisor.
Temporary Works	Part of the demolition or dismantling activity that allows or enables construction, protection, support or access. These may be significant civil/structural items and should be properly designed and constructed in accordance with MOC. A decision should be made about whether these items will be temporary (i.e. removed at end of project) or whether they will remain in place.

Table 7.2 - Glossary and Definition

8 APPENDIX

S/N	Document Ref. No.	Document Description
01	YMS-OMS-441.00-F-01	Handover Dossier
02	YMS-OMS-441.00-F-02	Level 1 Audit Report – Record of Findings
03	YMS-OMS-441.00-F-03	Structural Integrity Risk Assessment for Demolition and Dismantling
04	YMS-OMS-441.00-F-04	Notification to the Local Authority
05	YMS-OMS-441.00-F-05	Environmental Impact Assessment
06	YMS-OMS-441.00-F-06	Transfer of Responsibilities (TOR)
07	YMS-OMS-441.00-F-07	Transfer of Responsibilities (TOR) Handback
08	YMS-OMS-441.00-F-08	Asset Retirement Initiation Form
09	YMS-OMS-441.00-F-09	Disposed Assets As-found Report
10	YMS-OMS-441.00-CL-01	Decommissioning Compliance Checklist
11	YMS-OMS-441.00-CL-02	Management of Disposed or Mothballed Assets Compliance Checklist
12	YMS-OMS-441.00-CL-03	Demolition Method Statements Checklist
13	YMS-OMS-441.00-GL-01	Decommissioning Guidelines
14	YMS-OMS-441.00-GL-02	Management of Disposed or Mothballed Assets Guidelines
15	YMS-OMS-441.00-GL-03	Demolition Guidelines

Demolition Transfer of Responsibilities	Certificate Number:	

Section 1: Purpose and Key Principles

The purpose of this Certificate is to transfer responsibility within the boundary described in Section 2 for:

- The safe control of work, and
- The management of Environment, Health, and Safety

The scope of the transfer is described in Section 2. The key principles are as follows:

1. Responsibility for the control of work and management of Environment, Health, & Safety lies with the Demolition Contractor nominated in Section 2.
2. An appointed Principal Contractor, as nominated in Section 3, will review and approve the Demolition Contractor's Construction Phase Plan, Risk Assessments and Method Statements after the consent of YANSAB Demolishing Project Leader. This does not absolve the Demolition Contractor of responsibility for the work methods or ensuring that work is undertaken in a safe and environmentally sound manner.
3. The appointed Principal Contractor will monitor the TOR area and work activities being undertaken by the Demolition Contractor on behalf of YANSAB.
4. As deemed necessary by YANSAB, the Structural Advisor nominated in Section 3 will review and comment on the structural aspects of the demolition work methods. Such reviews will not absolve the Demolition Contractor of any responsibilities for ensuring that the work activities inside and outside the TOR and their effect on each other are understood, controlled and do not create any adverse EHSS impact.
5. The Demolition Contractor shall be responsible for liaising with the YANSAB Focal point(s) nominated in Section 3 to ensure that work activities inside and outside the TOR area and effect on each other are understood, controlled and do not create any adverse EHSS impact.
6. The Demolition Contractor nominated in section 2 is responsible hire an approved Waste Consignor by the Local Authorities for all waste produced within the TOR.
7. By virtue of this TOR the Demolition Contractor referenced in Section 2.1 agrees to accept responsibility and liabilities associated with the demolition activities that will take place within the TOR area defined in Section 2.2.
8.
9. The Demolition Contractor referenced in Section 2.1 confirms their agreement to indemnify YANSAB for the activities associated with this document.

Section 2: Transfer Parties, TOR Location and Workscope	
2.1 Transfer Parties	
From:	[Site name]
To:	[Demolition Contractor Name]
2.2 TOR Location	
Site	[Site location]
Plant/Unit	

Location Drawing

Insert plot plan drawing with red line mark up to show the boundaries of the TOR area (YANSAB Demolishing Project Leader to provide)

Note: On site the location is physically defined by a fenced boundary.

2.3 Work scope

Brief narrative to describe the key components of the work scope to be undertaken in the TOR under the control and management of the Demolition Contractor (YANSAB Demolishing Project Leader to Provide)

Section 3: Key Contacts (and Circulation List when TOR Certificate Authorised in Section 8.1)		
3.1 YANSAB / Client		
Demolishing Project Leader		Tel:
EHSS Sr. Manager		Tel:
Focal Point(s)	For daily liaison with demolition contractor, may need multiple entries for shift personnel (e.g. Shift Managers)	Tel:
Structural Advisor	Typically from SABIC MFG Asset Integrity team	Tel:
3.2 Demolition Contractor: Insert Company Name		
Site Manager	Indicative titles, adjust to suit project	Tel:
Project Engineer		Tel:
EHS Manager		Tel:
Work Permit Issuer		Tel:
Incident Controller		Tel:
3.3 Principal Contractor: Insert Company Name		
Project Manager	Indicative titles, adjust to suit project	Tel:
EHS Manager		Tel:
3.4 Site Emergency Response Services		
Responsible Person	Indicative titles, adjust to suit project	Tel:

Section 4: Key Reference Documents		
#	Document Description	Unique Reference(s)
4.1	Decommissioning Handover Dossier	
4.2	Pre-Construction Information	
4.3	Contractors Traffic Management Plan	
4.4	Asbestos Survey Report(s), as applicable	
4.5	Demolition Contractor Safe Systems of Work (Approved by Principal Contractor/YANSAB)	
4.6	Demolition Contractor Construction Phase Plan (Approved by Principal Contractor/YANSAB)	
4.7	Demolition Contractor Site Waste Management Plan (Approved by Principal Contractor/YANSAB)	
4.8	Demolition Contractor/YANSAB Focal Point Liaison Plan and Proforma	
4.9	Demolition Method Statements	
4.10	Any others to be listed on a project specific basis	

Section 5: Residual Risks			
#	Description	Present (Y/N)	Comments/References
5.1	Existing underground drainage systems		
5.2	Existing underground electrical supplies/other services		
5.3	Presence, or potential presence, of hazardous insulation materials		
5.4	Adjacent live plant and equipment		Specifically note position and risks relative to the demolition TOR area – process drains/fire mains/above and below ground cables /live plant and/or storage including flammable and toxic materials, hazards as disclosed in Pre-construction Information
5.5	Potential for residual hydrocarbons or other contaminants		
5.6	Live electrical cables running through the TOR area		Specifically note position and risks relative to the demolition TOR area
5.7	Live water mains and/or hydrants within the TOR area		Specifically note position and risks relative to the demolition TOR area
5.8	Structures and walkways in poor condition		
5.9	Equipment charged with catalysts, desiccant, ...etc. within TOR area		Specify quantities and disposal process
5.10	Any others to be listed on a project specific basis		

Section 6: TOR Area Restrictions and Precautions			
#	Description	Applicable (Y/N)	Comments/References
6.1	Safe Systems of Work (SSOW)		The Demolition Contractor will apply their SSOW as referenced in section 4.5
6.2	Routine liaison between the Demolition Contractor and YANSAB Focal Point		Must take place and be formally recorded in accordance with the Liaison Plan referenced in Section 4.8 to ensure that work activities inside/outside the TOR and their effect on each other are understood and controlled to avoid any adverse EHSS consequences
6.3	Traffic Management		The Demolition Contractor will apply their Traffic Management Plan as referenced in Section 4.3
6.4	Lifting Operations		The Demolition Contractor will manage all lifting activities. Lifting operations that extend outside the TOR boundary must be reviewed in advance with YANSAB Focal Point.
6.5	**No** hot work allowed		Exceptions must be requested and approved, in writing, on a case by case basis
6.6	**No** blind hot cutting		Hot cutting where the geometry of the object to be cut means that it cannot be thoroughly visually examined and tested to ensure that no flammable material is present.
6.7	**No** confined space entries (includes but not limited to excavations, manholes, sewers, drains, tanks, vessels, tunnels, shafts, ducts, pipelines, boreholes, boilers, stacks, enclosures and other such unventilated areas)		Exceptions must be requested and approved, in writing, on a case by case basis
6.8	**No** deliberate collapse of equipment or structures		Exceptions must be requested and approved, in writing, on a case by case basis
6.9	The validity of the TOR Certificate is subject to a satisfactory 6		

Section 6: TOR Area Restrictions and Precautions			
#	Description	Applicable (Y/N)	Comments/References
	monthly audit by YANSAB EHSS team		
6.10	The validity of the TOR Certificate is subject to a satisfactory ongoing audits of the work area, work methods and work execution by YANSAB and appointed Principal Contractor		
6.11	Any others to be listed on a project specific basis		

Section 7: EHS Incident Management, Reporting and Auditing

7.1 EHS Incident Management and Reporting

The Demolition Contractor will provide a trained and competent individual to fulfil the role of 'Incident Controller' in the event of a signficant incident requiring emergency response.

The Demolition Contractor EHS Manager nominated in Section 3.2 is responsible for providing:

The YANSAB Demolishing Project Leader, EHSS Sr. Manager nominated in Section 3.1, and the Principal Contractor EHS Manager nominated in Section 3.3

With details of any accident that occurs within the TOR area.

Verbal notification must be provided as soon as practicable following any accident and an initial written summary must be provided within 24 hours. The Demolition Contractor will ensure that all accidents are investigated in the appropriate level of detail and closed out in a timely manner. YMS-SHEM-P-10.00 guidelines to be used for incident reporting.

7.2 EHS Performance Reporting

The Demolition Contractor EHS Manager nominated in Section 3.2 is responsible for providing the following data as minimum, in writing, by the third working day of each month:

1. The total man-hours expended by the demolition contractor and all sub-contractors involved in the execution of the works during the previous calendar month.
2. A summary of any accidents or incidents and their classification, near misses and observations.

After alignment with the Principal Contractor EHS Manager nominated in Section 3.3, the data shall be provided to the YANSAB Demolishing Project Leader, EHSS Manager nominated in Section 3.1 who will be responsible for internal reporting of the data.

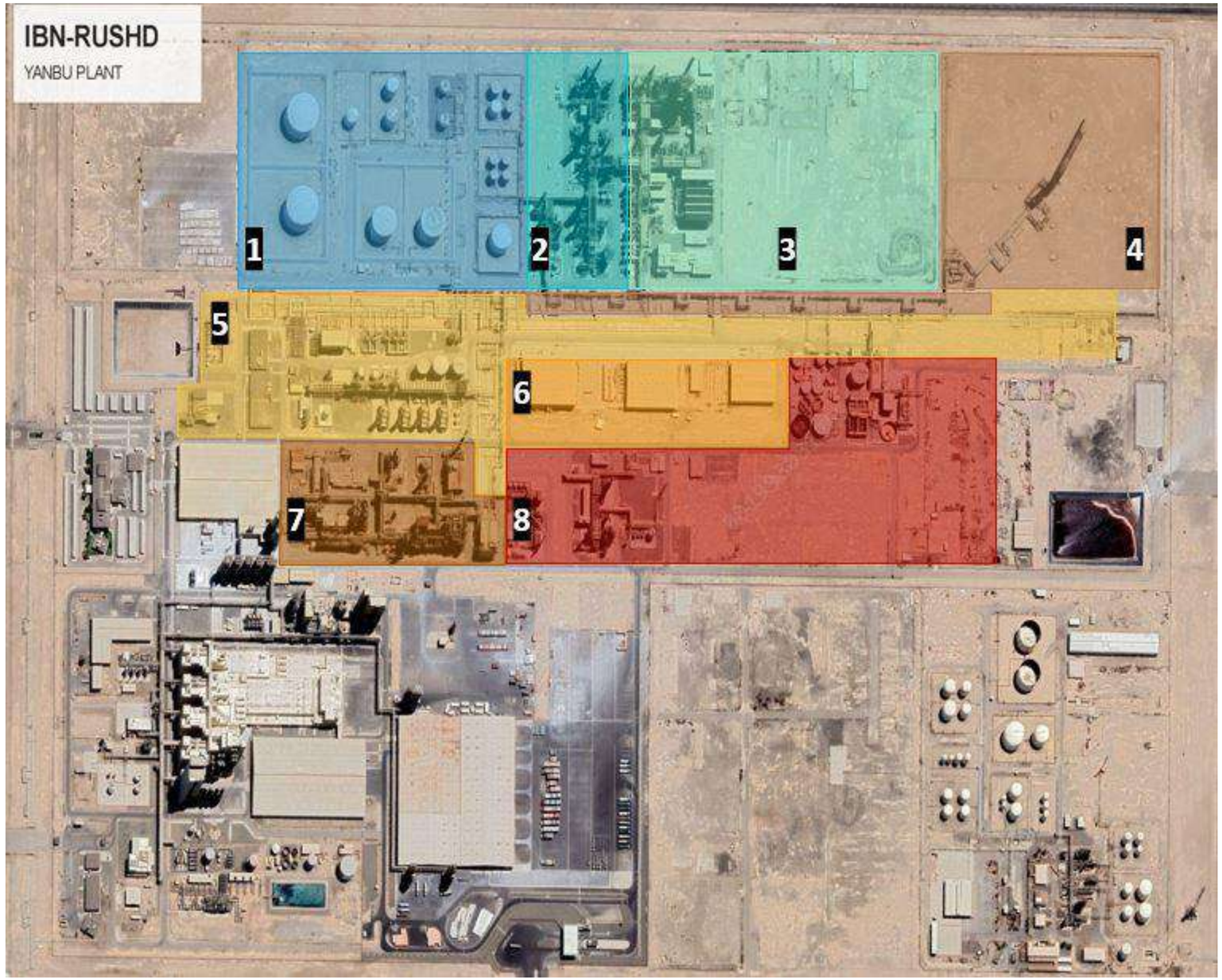
7.3 EHS Auditing

The YANSAB EHSS Manager nominated in Section 3.1 will be responsible for:

1. Establishing an appropriate audit program throughout the TOR validity period.
2. Facilitating 6 monthly audits by selective representation from YANSAB management teams and EHSS Group.
3. Co-ordinating any corrective actions arising on behalf of the YANSAB Demolishing Project Leader who is responsible for completion.

SECTION 8: HANDOVER		
8.1 Handover		
Issued By:	Insert Job Title (YANSAB Demolishing Project Leader)	Name: Signature:
Received By:	Insert Job Title Demolition Contractor Site Manager/Responsible Person	Name: Signature:
Effective From:	Date:	Time:
Forecast Handback	Date:	Time:

SECTION 9: HANDBACK		
A Handback Certificate (FORM-1406-07) has been completed and the TOR is handed back		
Issued By:	Insert Job Title Demolition Contractor Site Manager/Responsible Person	Name: Signature:
Received By:	Insert Job Title (YANSAB Demolition Project Leader)	Name: Signature:
	Date:	Time:



1 Aromatics Tank Farm

2 Aromatics Process Plants (Sulfolane Unit + Parex Unit + Isomar Unit + Fractionation)

3 Aromatics Process Plant (Cyclar&CCR + PSA Unit + Downstream + Tatoray Unit)

4 Elevated Flare Including Flare Pipelines

5 Utilities-II + Pipe rack (trench)

6 Central WS + Materials WH (+30,000 line items and spare parts) + Chemical WH

7 Purified Terephthalic Acid (PTA) / Crude Terephthalic Acid (CTA)

8 Acetic Acid Process Plant, Incinerator, Effluent Treatment Plants (ETP-II , ETP-III)

Transfer of Responsibilities	Certificate Number XXX
The purpose of this certificate is to transfer the responsibility for all operations within or associated with the Plant/Area/Location described below: **From:** Demolition Contractors Name **To:** [Site name].	
Plant: Plant / Area /Location Works: [Site location] (Delete as applicable)	
Description of Area/System Responsibility: This document covers the area of Plant / Area /Location and work associated with its demolition, dismantling and site clearance. The actual area of the site encapsulated under this document is shown on the following: Document ref	
Job Title Print: (Demolition contractor and Responsible Person) Name Print: Signed: Date and time:	
Job Title Print: (Principal Contractor) Name Print: Signed: Date and time:	
Job Title Print: (YANSAB Demolishing Project Leader) Name Print: Signed: Date and time:	
Job Title Print: (YANSAB EHSS Sr. Manager) Name Print: Signed: Date and time:	

Attach a plot plan red line map showing the area of responsibility.

YANBU NATIONAL PETROCHEMICAL COMPANY

(YANSAB)

Document No.: YMS-SHEM-P-08.10 (YMS-OMS-P-316.10)

Document Name: Work Permits

Rev. No.: 10

	Position	Name	Signature	Date
Originator	Element/(Sub) Leader	AbdulJabbar Al-Sulami		5/3/20
Reviewed by	Element Leader	Anwar Al-Ghamdi		5.3.20
	Quality Assurance Team Member	Ismail Al-Hajaji		5-3-20
		Trivedi Mukesh		5.3.2020
		Ahmad Al-Shangeeti		12/3/20
	OMS Administrator	Madhusudan Mahajan		12/3/2020
	Dimension Chairman	Esam Al-Booq		12/3/2020
Approved by	OMS Leader	Awadh Al-Ghamdi		16/3/2020

TABLE OF CONTENTS

1 PURPOSE

The purpose of this procedure is to describe the minimum requirements of the processes that shall be in place for work activities controlled through a work permit. The purpose of the work permit is to define the steps to be in place so that work activities are conducted in a safe and effective EHSS manner.

This procedure sets out the required approach to work activities controlled through the work permit process in accordance with SABIC's Life Saving Rules.

The result of this sub-element is to ensure that:

1.1 All work activities are risk-assessed and adequate controls are in place so that the work and tasks are completed in a controlled, safe manner and without incidents

1.2 Personnel involved in managing, authorizing, monitoring and implementing work activities controlled through a work permit are trained, verified as competent and understand their responsibilities

1.3 The work permit process is audited at an appropriate level to ensure its continued effective implementation

1.4 A prevention / reduction in incidents related to failures or shortcomings is achieved using the work permit process.

2 SCOPE

The scope of this procedure covers all activities including, but not limited to, maintenance (routine and non-routine), project, construction, demolition and non-routine process operations performed by employees and contractors. Any work performed by operating personnel outside the scope of their normal operating responsibilities as defined in their Standard Operating Procedures (SOPs). These types of work activities shall be conducted through a work permit process that meets the requirements of this procedure, unless formally exempted from needing a work permit.

This procedure covers the minimum requirements to recognize the initial hazard and control, as a preparation using Hazardous Assessment and control Form Appendix

(YMS-SHEM-08.10-F-09) for any work activity. Select the specific type of the work permit for carrying out work activities at Affiliate facilities.

2.1 This procedure specifies the minimum requirements of the work permit processes at Affiliate Facilities. These locations are define as:

2.1.1 Contractor operated facilities including warehouse operations when based on and within the battery limits of Affiliate owned site.

2.1.2 Pipeline distribution systems within Affiliate boundary.

2.2 All work activities require at least a Hazardous Assessment and Control form Appendix (YMS-SHEM-08.09-F-09) unless:

2.2.1 The activity is specifically exempt from the need for a Work permit as per this Management System.

2.2.2 The work activity is perform within identified permit-exempted area.

2.2.3 The activity is within the scope of an applicable Standard Operating Procedure (SOP).

2.2.4 The activity is within the scope of a specified and applicable SMP at site level (this must be defined at Affiliate level based on Risk assessment process as per YMS-SHEM-P-02.00)

2.2.5 All areas that are exempted from the requirement of issuing and/or using work permits for specified activities shall be identified, subjected to a risk assessment process as per YMS-SHEM-P-02.00 and approved by the appropriate leadership member(s) and communicated to all concerned.

2.2.5.1 The following are the areas exempted by clause number 2.2.5:

a) Yansab Operation activities, which are executed under SOP.

b) Day-to-day maintenance activities carried out inside designated maintenance workshop areas under SMP.

c) Day-to-day activities carried out inside fire station under approved procedure.

d) Sandblasting and painting activity under approved procedure (in cooling tower area)

e) Municipal waste (Garbage truck operations) located on streets (not inside plant)

2.2.6 In Vehicle fueling station (located beside the road in between LAB & PHD) , if there is any type of maintenance activity or loading activity then work permit system to be applied.

2.2.7 Vehicle refueling in the station (located beside the road in between LAB & PHD) does not require a work permit, but clear approved instruction list of how to do refueling to be clearly displayed at location (posted).

2.2.8 All activity performed in area between gate 1 and gate 2 shall be treated as following:

2.2.8.1 Street and barking area including Landscaping & irrigation activity under U&O responsibilities.

2.2.8.2 Owners of Administrator building, training building with mosque, canteen and ISD bundling shall assign a permit issuers and permit receivers.

Therefore, this procedure applies to activities including maintenance, project, construction, demolition and non-routine process operations (note; this is not an exhaustive list).

Note: All areas that are exempted from the requirement of issuing and using Work Permits for specified activities shall be identified, subjected to a risk-assessed process such as HAZAMS, task risk assessment etc. approved by the appropriate leadership member(s) and communicated to all concerned.

3 ROLES AND RESPONSIBILITIES

This procedure was developed based on the position/title respective to approved Organization Structure in accordance to Site Organization Design procedure (YMS-P-OMS-121). The Table #1.0 RACI Matrix illustrates the key roles and responsibilities for high-level activities that are described by this procedure. Other specific roles and responsibilities for activities that are detailed in the requirement section shall be followed accordingly.

Activity Description	OMS Chairman	E/SE Leader	EHSS Sr. Managers	Ops / Mtc Sr. Managers	Ops / Mtce. Managers	EHS Engineer	Issuers	Receivers	Dept. SHEM Specialist	Specialist O/M Coordinator	Gas Tester	Civil Engineer	Electrical Engineer	Mechanical Engineer
Develop, review, training and measure effectiveness of this procedure.	A	R	I	I	I	R	I	I	I	I	I	I	I	I
Coordinate work activities with issuer & receiver supervisors for hazard assessment and Formal JSA form preparation	-	C	-	A	R	C	R	R	C	R	-	-	-	-
Prepare Hazard Assessment & Control and basic steps formal JSA	-	C	-	A	R	C	R	R	C	C	-	-	-	-
Discuss the work for all types of work permits details with affected area issuer.	-	C	-	A	R	C	R	R	C	-	-	-	-	-
Participate in joint site with permit issuer and accept the permit	-	C	-	A	R	C	R	R	C	-	-	-	-	-
Before performing the actual work fill in the LMRA and explain it to the working crew	-	C	-	A	R	C	R	R	C	-	-	-	-	-

Activity Description	OMS Chairman	E/SE Leader	EHSS Sr. Managers	Ops / Mtc Sr. Managers	Ops / Mtce. Managers	EHS Engineer	Issuers	Receivers	Dept. SHEM Specialist	Specialist O/M Coordinator	Gas Tester	Civil Engineer	Electrical Engineer	Mechanical Engineer
Perform gas test before authorizing any work permit and record the results.	-	C	-	I	I	C	A	C	C	-	R	-	-	-
Fill Section 2 Fill section 3 in the excavation Clarence to Provide relevant drawings, approve shoring plan with calculations	-	C	-	A	I	C	R	I	C	-	-	R	I	I
Fill section 3 in the excavation Clarence by marking up on relevant drawing for any underground cable.	-	C	-	A	I	C	R	I	C	-	-	I	R	I
Fill section 4 in the excavation Clarence by Ensuring any underground pipelines, structure beams/obstacles	-	C	-	A	I	C	R	I	C	-	-	I	I	R
Periodic Work Permit audits	A	R	A	I	I	R	I	I	I	-	-	-	-	-

Table #3: RACI Matrix

4 REQUIREMENTS

4.1 General

4.1.1 The applicability of this procedure and each requirement given therein against all managed activities/facilities are evaluate during the development of this management system. This procedure is developed and controlled in accordance with Policy & Management System Development procedure (YMS-OMS-P-231).

4.1.2 SABIC Global Assurance shall be consulted, for any clarification to this procedure in accordance with Policy Management and System Development procedure (YMS-OMS-P -231).

4.1.3 Position(s) assigned with the responsibility of ensuring compliance with this procedure in accordance with Site Organization Design procedure (YMS-OMS-P -121).

4.1.4 Roles and responsibilities of all other positions/functions responsible for supporting implementation of this procedure are clearly identified, documented, and communicated as in accordance with Stakeholder Communication &

Engagement procedure (YMS-OMS-P -233).

4.1.5 This procedure is developed and reviewed considering all applicable local/ national/ regional/ international regulations, standards for work permit system like (RC-14001, HCIS, ISO-9001, ISO-45001 , OSHA, etc.) and other specific requirements to which Affiliate subscribes, with reference to the process described in Compliance, Assessments and Evaluation Procedure (YMS-OMS-P -232). Elements / Sub-Elements shall confirm inclusion of identified legal and regulatory requirements in this procedure and shall be complied within daily practices.

4.1.6 Suspension (Temporary Stop)

All permit conditions are to be complied with work permit procedures requirements at all times. Any deviation, without appropriate authorization, shall be result in immediate suspension of the permit. (Any employee can do the suspension and report it to the Issuer).

In case of an emergency/fire alarm situation in that specific area, the work permit shall automatically be suspended, it shall be revalidated before work can commence again

4.1.7 The following conditions shall cancel Work Permits:

4.1.7.1 If work is not started within two hours after issuance of permit, or if there is an interruption of work for more than 2 hours.

4.1.7.2 Change of work environment conditions in the unit or area, e.g., venting, liquid hydrocarbon spillage

4.1.7.3 Injury or accident during execution of work.

4.1.7.4 When emergency alarm is sounded / activated in effected unit.

Note: Emergency drill / fault alarms shall not cancel the issued work permits.

4.1.8 Closure of each Work Permit can take place only when:

4.1.8.1 Conduct Joint Site visit by both Issuer & Receiver prior closing the permit as per level authority.

4.1.8.2 The Work Permit Receiver shall ensure that:

f) All persons have withdrawn from the work site.

g) All tools and equipment have been removed.

h) All openings / enclosures have been closed, secured and/or barricade to prevent unauthorized access.

i) The work area is left clean and tidy.

4.1.9 The Permit Issuer shall: (see section 4.1.28 Permit Issuing & Receiving Authority)

4.1.9.1 Verify the conditions and safeguards as reported by the receiver are accurate.

4.1.9.2 Together with the receiver, close the Work Permit, with both parties signing and dating their confirmation of the safe condition of the

equipment and work site.

4.1.10 Work permit shall not be issued to cover a whole unit or plant and Blanket Work Permits shall not be issued in any SABIC facilities.

4.1.11 Individual work permit shall be issued for each task.

4.1.12 Multiple sub-task can be included in one permit under following conditions:

4.1.12.1 One permit type.

4.1.12.2 Same crew members.

4.1.12.3 The sub-tasks are not interfere by any operational activity and are not conflict with any other maintenance activity.

Note: Housekeeping shall not have a separate permit, because it shall be covered under the related permit in the area unless there is a separate housekeeping activity being done that is not related to an active maintenance activity.

4.1.13 No Photocopies (Xerox copies) shall be made to substitute for the Work Permits or technical confirmation forms such as excavation clearance, lifting plan and LOTO Certificates.

4.1.14 Associated certificates shall not be used or accepted as enough approval of the non-operational work without approved work permit.

4.1.15 LOTO certificate, Excavation clearance & Lifting plan shall not be closed unless related permits are completed and closed.

4.1.16 Ensured /Confirmed PPE's are inspected before use.

4.1.17 Ensured /Confirmed tools are inspected before use.

4.1.18 The plant/area owner shall be responsible for issuing work permit within owner department boundaries.

4.1.19 Work permit to be issued on common facility require obtaining affected department counter sign.

4.1.20 Issuer and Receiver cannot be the same person, however can be from same department.

4.1.21 Issuers shall be track all issued work permits and shall record it in Work Permit Control Sheet (YMS-SHEM-08.10-F-16).

4.1.22 After signatures from the Issuer and the Receiver, each one shall keep a copy of the Work Permit.

4.1.23 When the job is completed, the Permit Issuer and Receiver sign off the permits and they exchange the permit copies. All Work Permit forms shall be retained for minimum 3 months' period.

4.1.24 All Permits issued for equipment shall be closed prior to start-up of the equipment/process.

4.1.25 The Permit Issuer of Work Permit shall ensure that:

4.1.25.1 Hazard Assessment and Control Form (YMS-SHEM-08.10-F-09) and all Work Permit sections have been filled properly, completely and accurately.

4.1.25.2 Hazard Assessment and control Form and all work permit sections are signed by designated positions written in Work Permit forms.

4.1.25.3 The equipment and area are prepared and it is safe to perform the work.

4.1.25.4 Process Isolation (valves are closed, blinds are installed, lines are disconnected and vent / drains are opened) of the equipment as required for the assigned work as per Control Isolation of Hazardous Energy including LOTO procedure (YMS-SHEM-P-08.11).

4.1.25.5 Electrical LOTO obtained/ followed (e.g. Power De-energized) as per LOTO certificate requirement according to Electrical Safety procedure (YMS-SHEM-P-08.05) and Control Isolation of Hazardous Energy including LOTO procedure (YMS-SHEM-P-08.11).

4.1.25.6 Gas test conducted for all permits as required with considering the allowable concentrations & safe ranges.

4.1.25.7 Identify hazards associated from surrounding area, including potential for exposure to Heat and Cold Stress procedure (YMS-SHEM-P-12.06) and appropriate actions, including communication, PPEs, and other administrative and engineering measures taken for the safety of personnel who will carry out the assigned task.

4.1.25.8 Joint site visit (where the work is to be performed) is carried out along with the Permit Receiver of the Work permit for the area and equipment, before the Work permit is issued, to assure that the conditions and precautions are satisfactory for the work to proceed and to indicate the nearby eyewash, emergency shower, fire extinguisher and paging system.

4.1.25.9 The Permit Receiver understands the requirements, PPEs to be used, other precautions given in the Work permit \Hazard assessment and control Form and any potential of unusual conditions related to the job.

4.1.25.10 After completion of work, Work permit is closed before re-starting the equipment on which the work was performed and cosigned with issuer.

4.1.25.11 The Issuer of the work permit shall inform the concerned supervisor(s) of all the area/dept. that may affected by work and obtain their initial on the work permit.

4.1.25.12 The issuer of the work permit shall convey relative information about the issued work permit to his reliever.

4.1.25.13 The Permit Issuer shall assign concerned area operator to monitor the activity of work permit within his boundary.

4.1.25.14 The Permit Issuer shall keep the original copy in control room.

4.1.25.15 In case Permit Issuer has to leave his shift for any valid reason, he has to delegate the responsibility to another "Permit Issuer" of equivalent authority or above to carry out the responsibilities and make endorsement.

4.1.25.16 The Permit issuer is responsible for the area where the Work permit is issue.

4.1.25.17 Issuer shall not issue the permit with validity beyond his working hours.

4.1.25.18 Permit issuer shall notify the receiver and / or the work crew on conditions change and an evaluation be made as to revoking, revising, or reissuing of the permit.

4.1.25.19 Permit issuer shall ensure removal of grating, handrails or created opening through using work permit with attached working at height YMS-SHEM-08.09-F-04 temporary Removal of Grating (Platform) Guard Rail checklist.

4.1.26 Permit Receiver shall ensure: (see section 4.1.28 Permit Issuing & Receiving Authority)

4.1.26.1 The job was understood as what, where and how to be performed.

4.1.26.2 His entire crew is qualified to perform the activity as per Training & Competencies procedure (YMS-OMS-P-131), JQP and Third Party EHSS Management procedure (YMS-SHEM-P-05).

4.1.26.3 Working crew shall comply with approved SMP, Hazard Assessment and Control form Appendix (YMS-SHEM-08.10-F-09) or Job Safety Analysis(JSA) YMS-SHEM-P-02.02

4.1.26.4 Comply with all the requirements and precautions stated in the Work Permit.

4.1.26.5 Availability of standby-man and fire watch whenever permit issuer mentions in work permit form.

4.1.26.6 Electrical, Steam, Pneumatic and/or any other type of LOTO, as required, is performed.

4.1.26.7 Communicate any change in the condition or any abnormality observed to the Permit Issuer.

4.1.26.8 Housekeeping is maintained before, during and after job.

4.1.26.9 Permit Receiver shall conduct the "LMRA" Last Minute Risk Assessment method which is used to help executers to think and implement safety precautions before any job is started. Means to take two minutes before starting any job to think about (thinking before acting) and applying crewmember personal lock and Lock-Out Tag-Out for the equipment before starting the job.

4.1.26.10 "LMRA" assessments are carried out in the field prior to starting any

tasks/ jobs by the people doing the work.

4.1.26.11 To leave his shift for any valid reason, he has to delegate the responsibility to another "Permit receiver" of equivalent authority or above to carry out the responsibilities. New delegate shall sign the forms and make endorsement.

4.1.26.12 The permit hard paper copy is available\displayed at the worksite or preferably is displayed at a visible location near the worksite, until the job is completed.

4.1.26.13 To attend to next shift issuer for extension or closing the work permit as required, work shall not be resumed or Confined space re-entry made until this has been accomplished.

4.1.26.14 Close the work Permit by same issuer and receivers unless it is closed by their relievers after doing endorsement/and extension in one-hour shift change.

Note: After signatures from the Issuer and the Receiver, each one shall keep a copy of the Work Permit.

4.1.27 Permit issuer and permit receiver field visit shall achieve the following requirements:

4.1.27.1 Confirm that the exact work location is understood and that all required identification tags are in place.

4.1.27.2 Confirm that the work scope is understood, the conditions of the plant are as expected and that all required control measure are in place.

4.1.27.3 Demonstrate that the plant has been de-energized and confirm the isolations required are in place.

4.1.27.4 Comply with the control measures identified on Hazard Assessment and Control Form (YMS-SHEM-08.10-F-09).

4.1.28 Extension / Endorsement of the Permit (Re-validation)

4.1.28.1 Extension of work permits shall be done by Permit Issuer and Receiver in case the task not completed on agreed time. Revalidation is permitted subject to the following controls:

a) Scope of work activity remains as defined on the work permit.

b) Control and mitigation measures as stated in the work permit and any/all additional permits are in place.

c) The conditions at the location of the work activity have not materially changed such that additional precautions are required or that the work permit related risk assessment process is no longer valid.

d) No additional safety consideration has changed from the original work permit related risk assessment process.

e) In the event of the risk assessment process no longer being valid due to changes or omissions, a review of the risk assessment shall

take place prior to revalidating the work permit.

f) Ensure members of the work team and others impacted by the work activity have been notified about the assessed risks and the control and mitigation measures required preventing or minimizing the potential for an incident.

g) The issuer revalidating the work permit ensures that the receiver understands the content of the work permit:

1. Work activity scope.
2. The requirements in hazard assessment & control form and mitigation measures.
3. Emergency response actions.
4. Recognizing that any changes in the original intent as stated on the work both in terms of activity and controls/mitigation permit will invalidate that work permit, and therefore work shall cease and the receiver report the status immediately to the issuer.

h) During the first hour of the turnover (shift change), receiver and issuer shall communicate all information regarding the Permits that they endorsed\extend and discuss the site status before endorsement.

i) During the first hour of the turnover, the work can be resumed with responsibility of the permit receiver. Furthermore, the next shift issuer is responsible and accountable for the renewal (extension and/or endorsement) / within the first one hour.

j) Endorsement shall be made for the followings:

1. When both or either one of issuer or receiver leave the field before the time of the permit duration.
2. In case of work permit activity need to execute with high risk, then management approval shall be obtained.

4.1.29 Permit Issuing & Receiving Authority

Type of Work Permit	Activity	Permit Issuer (Direct Hire Only)	Permit Receiver
General Work Permit	Work that does not create Heat/ Sparks	Trained / Qualified/ Certified Authorized Operator and above	Trained/ Qualified/ Certified/Authorized Direct/contractor Technician/ Area owner Personnel or above
Hot Work Permit	Activity capable of supplying ignition energy for igniting flammable mixtures or combustible materials that may be released to create a potential fire or explosion hazard	Trained / Qualified/ Certified Authorized Area Supervisor/ Lead/ Selected senior operator	Trained / Qualified/ Certified Authorized Supervisor/ Lead Technician /Contractor (Supervisor or Foreman) Selected senior technician-direct hire only

	Hot Tapping	Trained / Qualified/ Certified Authorized Area Supervisor and counter sign by Area owner Sr. Manager	Trained / Qualified/ Certified Authorized Supervisor & counter sign by Concerned Maintenance/Technical Sr. Manager
Confined Space Entry Permit	Duties inside confined space	Trained / Qualified/ Certified Authorized Area Supervisor	Trained / Qualified/ Certified Authorized Supervisor-Direct Hire
Electrical work Permit	Electric activities	Trained / Qualified/ Certified Authorized Area Supervisor/ Lead	Trained / Qualified/ Certified Authorized Electrical as authorized as per Electrical Safety procedure (SHEM-08.05) and (SHEM-08.10)
Radiation Permit	Work include Radiation Hazards	Trained / Qualified/ Certified Authorized Area Supervisor / Lead	Trained / Qualified/ Certified Authorized Direct / Contractor RSO.
Lifting Work Permit	Work include Lifting Activities	Trained / Qualified/ Certified Authorized Area Supervisor/ Leader	Trained / Qualified/ Certified Authorized Direct/contractor Supervisor/ Lead
High Pressure Jetting Work Permit	Work include High Pressure Jetting Activities	Trained / Qualified/ Certified Authorized Area Supervisor/ Leader	Trained / Qualified/ Certified Authorized direct / contractor Technician or above.
Excavation Work Permit	Work include Excavation Activities	Trained / Qualified/ Certified Authorized Area Supervisor/ Leader	Trained / Qualified/ Certified Authorized Direct/contractor Supervisor/ Lead
Hazard assessment & control form	For any activity related to work permit expect confined space	Trained / Qualified/ Certified Authorized owner Supervisor	Trained / Qualified/ Certified Authorized Direct/contractor Supervisor

Table #2: Permit Issuing & Receiving Authority

4.1.29.1 For operational non-routine activities and operational routine activities inside confined space, the below table for Permit Issuing & Receiving Authority to be followed:

Type of Work Permit	Activity	Permit Issuer (Direct Hire Only)	Permit Receiver
Confined space entry permit	Routine or /and Non-Routine operation activity inside confined space	Trained / Qualified/ Certified Authorized Unite supervisor	Trained/ Qualified/ Certified/Authorized Operator and counter sign by unit manager
General Work Permit	Non-Routine operation activity outside confined space	Trained / Qualified/ Certified Authorized Unite supervisor	Trained/ Qualified/ Certified/Authorized Operator and above

a) The definition of non-routine (standard) not in SOP means that the activity never conducted before or being performed for the first time and it is not in procedure (SOP). If the activity repeated then it shall be added in SOP.
b) All non-routine activity required to conduct formal JSA as per YMS-SHEM-P-02.02

4.1.29.2 Only Direct hired Supervisor is authorized to issue or receive confined space entry permit

4.1.29.3 In case of Unit Supervisor is not available, unit official delegate will issue the permit.

4.1.29.4 Unit management (sr. manager) can nominate Selected senior operator / senior technician (direct hire only) to have an authorization based on his competency for hot work permit after obtaining the EHSS approval as Trained / Qualified / Certified / Authorized personal.

4.1.29.5 Exception: During non-working hours such as (Coverage Group or On-Call Technician) Receiver Senior Technician can be authorized to receive Hazard assessment & control form and all Work Permit except Confined Space and Lifting after fulfilling the below requirements:

a) Shall be nominated and approved by concerned Department Senior Manager for the authorization by EHSS Department.

b) Total Technician experience shall be more than 5 years and Supervisor not available.

4.1.29.6 The below guidance table is the authorization level for below conditional activity:

Condition	Authorization
Day to day activity	a).General, excavation, hydro jetting, lifting, Hot, Electrical, Radiation work permits receiving by Certified/ Authorized direct hire, SMP, & service contractor. b).Confined Space Entry Permit receiving by Certified/ Authorized supervisor / Assigned supervisor direct hire.
TAM or Major shutdown	a).All types of work permit receiving by approved Certified/ Authorized direct hire, SMP & service contractor except Confined Space Entry to be by Certified / Authorized supervisor / Assigned supervisor (As per TAM/site project temporary organization) Permit by direct.
Site Project	a.All types of work permit receiving by approved Authorization except Confined Space Entry to be by Certified / Authorized supervisor / Assigned supervisor* Permit by direct

Condition	Authorization
	Note: If the receiver not available within the site project, the concerned affiliate should assign receiver from Their side as per the above criteria.

Table #3.0

Note:

a) Official delegation for the period of more than one week, Temporary card shall be printed by EHSS.
b) For the period of less than one week, official delegation form is enough to use.
c) Temporary card must be returned back to EHSS once it expired.
d) Temporary (TAM/site project temporary organization) shall be approved by concerned Department Senior Manager

4.1.30 Validity of the Permit and Certificate.

Type	Maximum Validity
General, Hot, Confined Space entry, Electrical, Radiation, Lifting, HPW Jetting & Excavation Work permit	12 hours
Lifting Plan Technical Confirmation, Excavation Clearance Technical Confirmation & LOTO Certificate	Until completion of the Work Scope

Table #4: Validity of the Permit and Certificate

4.2 Permit Process Overview

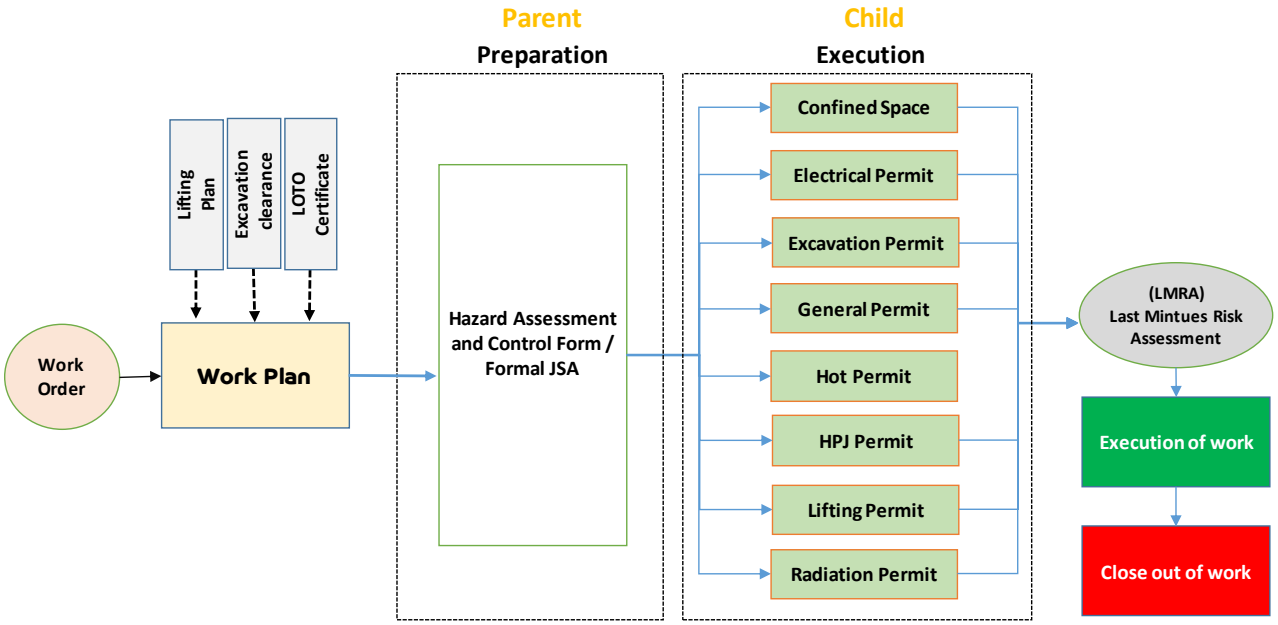


Figure #1: Permit Process Overview

4.2.1 Visual inspection or taking gauge readings can be exempted from issuing work permits. However, if the visual inspection/ taking gauge readings /safety audit/area verification is inside the confined space, then the entry person need to add the task under the confined space permit.

4.2.2 Planning of Work

The person(s) having the responsibility for planning the work activities shall:

4.2.2.1 Planner shall communicate all associated preparation of Lifting Plan Technical Confirmation & Excavation Clearance Technical Confirmation for work permit processes to all concern people and provide sufficient resources and time to enable all activities including the work permit processes to be completed to plan.

4.2.2.2 Area Specialist Operation/Maintenance Coordinator communicate with supervisor receiver to conduct Hazardous Assessment & control form and preparation of Work permit Activities Forms and as per assessment outcome ensure the risk level is properly mitigated or request to conduct formal JSA further as per YMS-SHEM-P-02.02.

4.2.3 Preparation of Forms:

4.2.3.1 Hazardous Assessment & Control Form:

A Hazardous Assessment& Control Form is a process to recognize Hazard Assessment and Control Form (YMS-SHEM-08.10-F-09) for any work activity.

a) To select the specific type of permit.

b) Required for all work activities that are performed by operating

personnel (not covered by SOP).

c) Issued and received by supervisors the authorized personnel of the area where work is to be performed even during urgent / an emergency.

d) A Hazardous Assessment and control form is the master document for all work permit types except Confined Space Entry Permit that is required Formal JSA as per YMS-SHEM-P-02.02 (. The Area Specialist Operation/Maintenance Coordinator shall organize the Hazardous Assessment and Control Form document once all the risk relevant identified and risk assessed as well as defined control measures are in place and complete.

e) Hazardous Assessment and d control form can be utilize for different time with the same scope of work activity after approval of Area Owner Managers and Maintenance Managers.

f) Issuer/receiver supervisor shall conduct the hazard evaluation then record risk rating at backside (Section-6) of Hazardous Assessment and Control form referring to risk evaluation guidelines table.

g) Hazardous Assessment and control Form shall be replace with new Hazardous Assessment form in case of the execution team competency changed.

h) Validity of this form is one week unless endorsed by both Owner Manager & Maintenance Manager up to 30 days.

i) Hazard assessment & control form retention record of the re-validated & completed forms shall be kept and available with area owner.

j) Review & Revalidate Hazardous Assessment & control form through revalidation Approval Process (Section-07) before execution of the task.

k) The decision on the requirement for a higher-level risk assessment (JSA) as per YMS-SHEM-P-02.02 shall be based on a TRF-Score (Total risk Factor) of 6 or more or when in doubt with a lower score in concurrence with the UOM. Whenever a TRF-Score of 6 or higher is identified, the Unit Operations Manager (UOM) shall be consulted. When the TRF-Score is 6, 7 or 8 the Permit Issuer together with the UOM shall decide on the necessity to complete a JSA. When a TRF-Score of 9 or 10 is calculated, a JSA as per YMS-SHEM-P-02.02 shall be completed by definition.

l) The following criteria shall be considered during Section-06 Risk evaluation guidelines Appendix (YMS-SHEM-08.10-F-09) for A, B and C risk factors as the followings:

(A) Potential Consequence of Error:

Potential of Consequences shall be identified through Hazardous

Assessment and control form section-2 (using question-1 and 2) as very low / low (2), moderate (4) and very high / high (6) with reference to SABC risk matrix Consequence.

(B) Performed Task Complexity:

Task Complexity has to be identified through Executer team capability, performed task steps and the condition of surrounding area.

(C) How Frequent Is Task Done By Team (Executer):

Based on how many time Executer Done the Task as often (Daily / Weekly / Monthly), Once in a while (At least one in every 6 months) and never.

4.2.3.2 Excavation Clearance

Excavation is any work that requires breaking the earth's surface or pavement including the removal of previously installed roadways, slabs or foundations at or below the surrounding ground level at 10 cm depth or more. Initially create Excavation Clearance for any excavation work activities with the following:

a) Excavation Clearance (YMS-SHEM-08.10-F-11), which contains all the requirements, must be filled before issuing the work permit; this Excavation Clearance only preparation stage to be ready. Authorization to perform the job, work permit is required, including:

   1. Determination of the presence and locations of under-ground services of area to be excavated.
   2. Marking out / identification on the ground the exact location and area of the excavation.
   3. Location of all known underground services shall be physically located before permitting any machine excavation.
   4. Defining the type of excavation, manual and/or machine excavation.
   5. Respective discipline shall use cable locator or other techniques such as exploratory excavation to identify location of underground services, if no drawings available.

b) De-energize and / or isolate underground services, if possible, for excavation. Otherwise, establish method of excavation to minimize hazards by such means as:

   1. Trail pit by hand excavation along the area to be excavated.
   2. Use of hand-tools in area of underground services.
   3. Insulate men and equipment from possible electrical contact.
   4. Use tools or equipment that will reduce possibility of damage to underground services and hazard to worker.

c) Ensure a plan provided by a Civil Engineer and approved by

concerned owner department Sr. Manager for excavations in excess of 3 meters, adjacent to structures, subject to vibration or ground. Calculations in support for the shoring type / method shall be specified in clearance form.

1. Work permit Issuer shall ask for gas testing with its frequency for the excavation & shall carry joint site inspection with permit receiver and define scope of excavation clearly in the excavation clearance.
2. Permit receiver is responsible to ensure Civil Engineer shall establish load carrying capacity of soil for safe use of mobile industrial equipment in or around excavation. Provide suitable protection against collapse of soil by use of mats, barricades, restricting the location of equipment, or shoring, etc.
3. Using power / machine excavation in areas where underground electrical system exists not allowed.

d) Permit receiver is responsible to ensure:

1. Gas and oxygen tests was performed prior starting the activity.
2. Provide a ladder or stairway for safe entrance and exit in accordance with Working at Height procedure (YMS-SHEM-P-08.09).
3. Provide adequate shoring or sloping of the trench wall, if the depth exceeds 1.2 meters.
4. Provide adequate arrangements to dewater the ground water.
5. Use confined space entry permit for excavation more than 1.2 meters deep.

e) Do not place excavated materials or mechanical equipment within 1 meter of the edge of any excavation. Also, keep equipment and other heavy objects at least 2 meters from the edge of the excavation. Provide sheet piling, shoring, and bracing for excavations in excess of 1.2 meters, or when it is necessary to operate heavy equipment nearer than 2 meters to the edge.

1. Protective Support System: A means of protecting employees from cave-ins. Protective systems include support systems (shoring), sloping and shield systems (trench boxes) and other systems that provide the necessary protection.
2. When excavations are 1.2 meters (4 feet) or deeper, all walls and faces of trenches/ excavations shall be sloped, shored, or trench boxes installed prior to allowing personnel to enter the trench/excavation.
3. Protective system options include proper sloping of the sides of the excavation. Supporting the sides of the excavation with timber shoring or aluminum hydraulic shoring, or placing a

shield between the sides of the excavation and the work area.

4. Protective systems shall have the capacity to resist without failure all loads that are intend or could reasonably be expected to be applied or transmitted to the system.

f) Hand tool excavation shall be used in the presence of any exposed underground services.

g) Do not cut red concrete as the red color concrete is used to mark underground electrical systems.

h) Do not use mechanical excavation within 1 meter of any underground services.

i) Carry gas test prior to start of each day or shift any excavation. The permit issuer may, if the conditions warrant, require more frequent testing or continuous monitoring.

j) Provide ladders or other suitable means of access / egress to excavations at a maximum spacing of 30 meters on the perimeter of open excavations and 7.5 meters for trench excavations greater than 1.2 meters in depth.

k) Barricades shall be placed around all excavations and flashing lights shall be installed at night if the excavation is not in a well-lit area.

l) Provide adequate support for all exposed cables and pipes.

m) Do not leave excavations, regardless of their depth, unattended without taking steps to prevent someone from inadvertently tripping, falling or driving in it.

n) Work permit receiver is responsible for providing walkways or bridges with standard handrails where employees or equipment are required or permitted to cross over excavations.

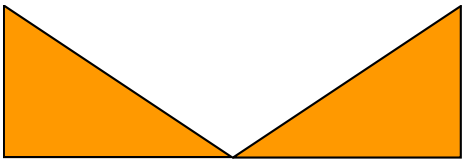
o) Shoring and / or Sloping:

1. Sloping: This is a method of protection from cave-ins by excavating to form sides that are inclined away from the excavation to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure and application of surcharge loads.

2. Support System: A structure such as underpinning, bracing, or shoring which provides support to an adjacent structure, underground installation or the sides of excavation.

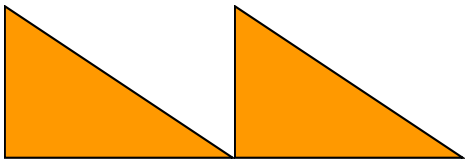
3. All sloping shall be sloped at an angle not steeper than 1.5:1 or 34° [1.5 meters (5 feet) horizontal to 1 meter (3 feet) vertical] this

would be for all excavations of less than 6 meters (20 feet) deep.



1.5: 1 Ratio

4. The walls and faces must be sloped to their angle of repose or shoring installed where employees are exposed to walls and faces of excavations and trenches 1.2 meters or more in depth.
5. Ensure the slope of the angle greater than 45 degrees when shoring is not installed. Flatten the slope when material such as silt or sand is encountered or when erosion or slide planes appear.
6. Bracing and shoring of trenches must be carried down and along with the hand excavation. Install Shoring prior to personnel entering a machine-excavated trench.



1.5: 1 Ratio

7. An easy and safe means of exit shall be provided if the excavation is 1.2 meters (4 feet) deep or greater. This exit shall be within 7.5 meters (25 feet) of every worker.
8. If a ladder is used as an exit, the ladder shall be secured and extend 1 meter (3 feet) above the landing. (No step ladders can be used; all exit ladders shall be straight ladders)

p) Excavation shall be inspected periodically for presence of groundwater, change in soil condition and effects of weather such as rain or wind. Safe means of continuing the work shall be established as any condition changes.

q) Work permit issuer & receiver are responsible to inspect excavations on daily basis & stop all work in the excavation until the necessary precautions have been taken to safeguard the employees, if evidence of possible cave-ins or slides is apparent.

r) Suspend excavation work if any unusual conditions are found or unidentified or unexpected pipe, cable, concrete or other obstructions are uncovered or permit conditions are not implemented. Subject Matter expert (civil, Mechanical, electrical engineer) shall verify condition

s) On completion of excavation work: Compact backfilled excavations to substantiate load-bearing capability of the surrounding area

before the barricades are removed.

4.2.3.3 Lifting Plan

An assessment by a competent person(s) (Certified Riggers) of the factors affecting the safety of a proposed lift and the controls necessary to manage it using YMS-SHEM-08.10-F-10.

This Plan is required for all types of lifting using crane (Fixed/Mobile). Crane is a machine which is capable of lifting, lowering and moving of heavy materials with the use of pulleys and cables. Other Manual lifting, forklift, and aerial lifts include man lift, scissor lift are exempted from lifting Plan and shall follow Lifting Equipment procedure (YMS-SHEM-08.06) and MOC procedure (YMS-SHEM-P-09-).

a) Definitions

1. Non-Critical Lift

   A Non-Critical Lift involves lower risk, simple lifting operations to which none of the Complex items applies to the lift.

2. Critical Lift

   A Critical lift which requires a higher level of experience, qualification, and/or certification in order to plan and/or execute than a non- Critical Lift.

   Note: (referring to Lifting Equipment procedure: YMS-SHEM-P-08.06 “Lifting Classification Matrix” for Non-Critical/Critical Lift details)

3. Competent Person for Rigging

   A person who, through past experience, training or qualification, has demonstrated capability in performing a particular task and has been certified for this. There are various levels of what is deemed competent for different aspects of lifting from simple lifts or basic rigging to operating different types of cranes (fixed/mobile) up to performing complex lifts. The required level of competency of the person(s) depends on the complexity and hazards of the lift. (Referring to Lifting Equipment procedure YMS-SHEM-P-08.06).

4. Lifting Equipment/Tools

   Mechanical or manual lifting device used to perform lifting operations (Crane, winch, pulley, Chain block, etc.) and auxiliary equipment used in direct association of lifting operations, e.g. to secure a load (i.e. chains, slings, spreader beams and all other lifting tackles).

5. Rated Capacity (Safe Loading Load)

   The maximum mass (in kg or tons (or local unit of measurement as applicable)) which may be handled by a crane at a specific working radius (in meters (or local unit of

measurement as applicable) and a specific boom or jib length without the strength or stability requirements being exceeded. The rated capacity shall comprise the following mass of the total lifted load and mass of the hook block in use.

6. Safe Working Load (SWL)

   The maximum load, determined by an approved certified rigger that an item of Lifting Equipment might raise, lower or suspend under particular service conditions also in line with Manufacturer specifications.

7. Working Load Limit (WLL)

   The maximum load that the lifting equipment is designed to raise, lower or suspend under ideal conditions (the Safe Working Load will usually be the same as the Working Load Limit — but can be less).

b) Persons involved in lifting activities shall be trained, qualified, certified and authorized as per Lifting Equipment procedure YMS-SHEM-P-08.06 requirements.

Note: Referring to Lifting Equipment procedure YMS-SHEM-P-08.06 “Lifting Plan General Guidelines” for Lifting Plan assessment requirements and details.

4.2.3.4 Gas Testing

a) Gas Tester: Shall be nominated by his sponsoring department Sr. Manager for training and certified by EHSS Department and meets the requirements to conduct gas test. Gas test results shall be recorded in the work permit space as per the frequency specified by the issuer in the work permit.

b) Conduct gas test to ensure that:

1. Flammable conditions do not exist
2. Employees are not exposed to harmful concentrations of toxic substances or oxygen deficient atmospheres.
3. The gas testing shall be conducted just before issuing the work permit.

c) Combustible gas detector instruments shall be used only in atmospheres containing oxygen range between 19.5%~21% as these instruments shall not measure the flammable concentration accurately in oxygen deficient or oxygen rich atmospheres.

d) Non-combustible type (e.g., infrared type) gas meters or meters designed to measure flammable concentration of gas in oxygen deficient atmospheres will be used to measure the presence of flammable material in confined spaces / piping that is purged with Nitrogen or other inert material.

e) Use chemical reaction tubes, such as Dragger tubes, or other such

instruments to check concentration of toxic or corrosive substances.

f) Maintain gas detectors in good condition (by periodic calibration of sensors and preventive maintenance recommended by vendor) because instruments can provide ignition sources for flammable mixtures. Do not use combustible gas detectors with damaged flame arrestor or without flame arrestor.

g) Prior to issue of work permit, permit issuer shall establish the need for gas testing based on the type of the work and hazards in the area. Some of the work activities that required gas test are given below:

1. Test for flammable mixtures to be performed in an area where hot work to be performed.
2. Perform toxic or corrosive substances tests when their presence is possible.
3. Confined space entry activity
4. Perform toxic or corrosive substances, flammable mixture and oxygen deficiency tests for confined space entry when their presence is possible. The test shall be conducted with purge and ventilation equipment stopped.
5. Establish periodic gas test frequency prior to issue of the work permit.
6. Gas testing for flammable vapors shall be performed.

h) Whenever issuer request to or has doubt conduct gas testing to assist operations personnel with various steps of equipment preparation. Such tests assist in purging and washing. These tests are considered preliminary and will be revalidated prior to issue of a work permit and releasing the equipment to the work crew.

i) Trained personnel authorized by department Sr. manager and certified by EHSS Department will only use gas detectors and chemical reaction tubes to perform a gas test.

j) Check the gas detectors are functioning as required for operability prior to use every time.

k) Permit Issuer shall specify repeat gas tests at defined intervals or continuous monitoring in the Hot Work Permit for the locations or conditions where there is a greater likelihood of gas release.

l) Specify continuous gas-testing throughout the course of the work or at specified intervals in some instances such as hot work or confine space where conditions could change, or tank cleaning when the work may cause a change in condition through sludge

agitation or other by products appearing.

m) Gas tester must follow below points for performing a gas test:

1. Understand specific equipment involved and the gas tests.
2. Understand LEL, UEL & oxygen deficiency.
3. Verify proper functioning of instrument.
4. Use correct chemical reaction tube / instrument to do toxic substances test.

n) Procedure for Conducting Gas Test:

1. Open Areas

- The primary concern in open areas is flammable gas. However, conduct gas tests for toxic substances if their presence is suspected.
- Check around, at and near all openings of the equipment where the work is to be done.
- Conduct gas test at sewer openings, open vents, bleeders and at any other possible locations in the area where leaks may be suspected.

2. Confined Spaces

The gas tester shall not enter the confined space for testing purposes unless the results across the cross section (top, middle and bottom sections) indicate that the oxygen level range between 19.5%~21%.

- Entrance into a confined space is not allowed if the oxygen level is below 19.5% or above 21%. Oxygen content above 23% can cause explosions or vigorous burning of flammable materials, including hair and/or clothing.
- If entry is required for testing purpose, gas tester shall be wear Self Contained Breathing Apparatus (SCBA) or supplied air respirator and with a standby man outside the confined space.
- Test cross section (top, middle and bottom sections) of the internal atmosphere of the confined space with a calibrated direct-reading instrument, before an employee enters the confined space, as per the following conditions in the order given:
  - Stop ventilation / purging at least 15 minutes, or based on risk assessment, prior to conducting the gas tests, to allow gas concentration to equalize.
  - Conduct oxygen test prior to entering a confined space or vessel.
  - Ascertain nature of other gases when oxygen percentage

is less than 19.5%. If it is inert gas, then the oxygen content shall be raised by purging with air.

- Perform gas tests throughout large spaces such as tanks, drums, towers or excavations where it may be possible for gas to be trapped in dead ends of nozzles, plugged down-comers, structural members, etc.
- Perform gas tests at multiple levels in tall vessels since some gases are heavier than air and tend to settle at the bottom and some which are lighter, will rise to the top.
- Conduct gas test considering the task to be carried out. If gas test for all of the below mentioned is required, then it will be carried out in the order specified:
  - Oxygen
  - Flammable gases and vapors
  - Potential toxic substances
  - Record initial/periodic gas tests results on work permit.
  - When the gas detector indicates more than 0% of ell of flammable gas in any confined space, personnel shall immediately come out
  - Stop hot work activities inside confined space if the flammable gas concentration exceeds 0% of LEL.
  - Use continuous monitoring instrumentation with alarms (such as gas detector) that meets proper electrical classification when specified in the permit.
  - At least one person in each confined space entry shall have a calibrated pocket sized oxygen meter with alarm.
- Test of Flammable Gases:
  - Authorized gas tester shall carry LEL test before any hot work permit is issued for any location where there is a possibility of flammables being present. The test shall be carried out no more than 2 hours prior to the issue of the permit. A fresh gas test shall be carried out before recommencing work in the event that the job is stopped for more than half of the retest frequency recommended in the permit or if re-test frequency is not mentioned then if two hours or more passes between the test and the re-start of the work.
  - Permit Issuer shall specify repeated gas tests at defined intervals or continuous monitoring in the Work Permit for the locations or conditions where there is a greater likelihood of gas release. The standard gas

tests every 2 hours. But the issuer can specify gas test <2hrs (e.g. every 1 hour)

- Measure the concentration of flammable / combustible vapors in the sampled area as percent of lower flammable limit in air.
- If gas detector indicates more than 0% of the LEL, hot work shall not be carried out. If further efforts for purging fails to remove all traces of flammable gas, the permit issuer shall authorize the hot work to proceed only if the following conditions are met:
  - The source of the flammable material is identified
  - A determination is made that the concentration cannot exceed .5 % of the LEL.
  - Gas detector gives a % LEL of the gas in air. There may be cases where a nitrogen or inert gas purge has been used and it is necessary to confirm that all the flammable gas has been removed. In such cases, a special gas detector or testing procedure (such as gas chromatography analysis) shall be required that will indicate the % of flammable gas, if any, left in the inert.
  - Confined space entry is not allowed if the gas test reading is more than 0 % of the LEL.

- Test of Toxic Substances:
  - Confined space entry and work in an atmosphere containing toxic gas or vapor in a concentration above the zero PPM shall not be allowed.
  - Follow specific written instructions, supplied with each container of toxic vapor / gas test tubes that contains limitations of the tube performance, possible interference by chemicals and an expiration date for that batch of tubes.
  - Use correct chemical reaction tube / instrument when tests for toxic substances are carried.
  - Carry gas test as close as possible to the time that work in the tested area begins for realistic assessment of toxic substances.
- Guidelines for carrying Periodic Gas Test:
  - Specify continuous gas-testing throughout the course of the work or at specified intervals in some instances such as hot work or confine space where conditions could change, or tank cleaning when the work may cause a change in condition through sludge agitation

or other by products appearing.

- Write name or signature of the person conducting the gas test, test results, date and time of the test on the work permit.

- Gas Testing Equipment Reliability:
  - Authorized gas testers shall be trained on gas detectors proper use, care, inspection, testing requirements and limitations of the detectors.
  - Before using any gas tester check calibration validity sticker affixed on the gas tester by certified agency.
  - The authorized gas tester in each department shall conduct the function test on daily basis.
  - Certified agency shall be carry out a quarterly calibration, maintenance and repair of gas detectors and relevant documents such as calibration certificate and details of repair / maintenance are kept by concerned focal point.
  - Listing all Gas detectors by respective department for monitoring and tracking
  - Tag all gas detectors that are not working properly (or out of calibration) and sent them for repair.
  - Custodian shall ensure gas detectors are checked on weekly basis by certified gas tester and record the details of checks in a logbook in the format Weekly Check List for Gas Detectors (YMS-SHEM-08.10-F-17).
  - An external, independent vendor or his representative will do calibration on a quarterly basis to ensure correct performance of the unit. Preventative maintenance will also be carried out at this time.
  - This external independent check shall be done on or before the expiry date mentioned on latest calibration tag / sticker. If due to any reason, calibration is delayed DO NOT use the gas detector until calibration is done and new tag / sticker is affixed.
  - Tag and dispatch for repair any gas detector that fails to recharge satisfactorily or calibrate through normal adjustment.
  - Create tag number for new gas detectors and include tag number, manufacturer serial number and custodian details in gas detectors register format as per Weekly Check List for Gas Detectors YMS-SHEM-08.10-F-17). Take out any damaged or inoperative gas

detector from service and send it for repair.

- Keep gas detectors instruction manuals with each custodian for reference.

4.3 Work Permits

Work permits are used to perform any activities by non-operations personnel. The Work Permit shall be issued by an authorized "permit issuer" of the area where work is to be performed. The following types of work activities shall have a work permits:

4.3.1	General Work Permit	YMS-SHEM-08.10-F-01
4.3.2	Hot Work Permit	YMS- SHEM-08.10-F-02
4.3.3	Electrical Work Permit	YMS- SHEM-08.10-F-03
4.3.4	Confined Space Entry Permit	YMS- SHEM-08.10-F-04
4.3.5	Excavation Work Permit	YMS- SHEM-08.10-F-06
4.3.6	Radiation Work Permit	YMS- SHEM-08.10-F-07
4.3.7	Lifting Work Permit	YMS- SHEM-08.10-F-05
4.3.8	High Pressure Jetting Work Permit	YMS- SHEM-08.10-F-08

4.4 General Work Permit

Written authorization to perform non-operations activity that does not create enough heat or sparks to ignite flammable gas-air mixtures or flammable materials. In classified / non-classified areas, General work will primarily be done with hand-held, hand operated tools, which do not normally produce sparks and work not in electrical hazardous classification area. General work permit may also require gas test.

A General Work Permit (YMS- SHEM-08.10-F-01) shall be required for all such activities. Some examples are:

4.4.1 Vehicle Entry in non-hydro carbon area/common area.

4.4.2 Work at height activity.

4.4.3 Flange tightening, gland packaging & gasket tightening activities.

4.4.4 Installing & removal of blind activities.

4.4.5 Adjusting & repairing of instruments

4.4.6 Plant Area cleaning and housekeeping activities (not part of Operational activities)

4.4.7 Visual monitoring - Any machinery or instrument monitoring such as vibration or noise testing.

4.4.8 Plumbing work

4.4.9 Changing Lamps in buildings.

4.5 Hot Work Permit

Written authorization to perform operations activity capable of supplying ignition energy for igniting flammable mixtures or combustible materials that may be released to create a potential fire or explosion hazard using Hot Work Permit (YMS- SHEM-08.10-F-02).

Work requiring a Hot Work Permit is hot work in combination with any of the Factors below:

4.5.1 The actual or potential exposure to sources of ignition in the following locations:

4.5.1.1 Any area that has Hazardous Area Classification for Flammable Gases and Vapors.

4.5.1.2 Any area that is proximity of any combustible/flammable materials (including dusts).

4.5.1.3 Any area within proximity of potential flammable and combustible material release points (flanged and/or threaded piping connections, instrumentation bleeds, separators, tanks, dehydrators, pig traps, regulators, meters, compressor stations, transfer pumps, and other equipment).

4.5.1.4 Any area where combustible / flammable material whilst not in immediate proximity, are readily ignitable and/or where situated near adjacent wall or floor openings.

4.5.1.5 Any area where combustible / flammable materials are adjacent to the opposite side of metal partitions, walls, ceiling, or roofs and have the potential to be ignited by heat conduction or radiation.

4.5.1.6 Vehicle Entry in hydrocarbon area or potential hydrocarbon existence.

4.5.2 The following Activities (but not limited to) shall be covered under Hot Work Permit scope:

4.5.2.1 Gas/flame cutting, grinding, welding, brazing, soldering etc.

4.5.2.2 Using heat or flame for any activity, etc.

4.5.2.3 Operation of internal combustion engines in classified areas.

4.5.2.4 Any release of flammable gases materials.

4.5.2.5 Use of any sparks-producing machine or devices such as drills, grinders, etc. or flash photography inside the plant or hydrocarbon area.

4.5.2.6 Hot tapping activity.

4.5.3 Hot Work Control

Isolate combustibles and flammables that cannot be relocated from ignition sources by flame-proofed covers or otherwise shielded with metal or fire-resistant guards or curtains.

4.5.3.1 Fire Watch Responsibility.

Fire Watch shall be an employee (direct hire (ERT Members)/or Short/Long Term contractor employee certified by Third party agency) who is trained and certified by EHSS department authorized by his Department Sr. Manager. Fire watch is responsible and authorized to immediately stop the hot work if hazardous conditions arise. His role includes:

a) Monitor flammable and combustibles, spark containment and for any abnormal event.

b) Being familiar with the area and potential hazards and knowing how to obtain assistance in an emergency.

c) Stop the hot work if a fire (or unsafe situation) is observed, inform operations supervisor and initiate appropriate.

d) Monitors the hot work area for changing conditions and watches for fires, and extinguishes them if possible.

e) Ensure that the area is covered with fire blanket and all openings in nearby area to control sparks and slags.

f) Whenever fire watch leave the activity area, the job shall be stopped or endorse to another qualified fire watch.

g) Fire watch shall stay at hot work location at least 30 min. after completion of the work and/or Where there is any possibility fires, maintaining area during lunch, all breaks, and for at least one-half hour after completion of the hot work activity.

4.5.4 Welding, Cutting and other Mechanical hot activities:

4.5.4.1 Permit receiver shall deploy qualified welders only. For a particular type of welding job, welder qualification, experience and competency shall be verified by concerned department and recorded in Welding Job Checklist (YMS- SHEM-08.10-F-13).

4.5.4.2 Ensure to relocate all moveable fire hazards in the vicinity at least 15 meters from the hot work site.

4.5.4.3 Provide adequate ventilation (natural, mechanical, or respirator) for all welding, cutting, brazing and related activities to ensure permissible exposure levels are not exceeded.

4.5.4.4 Provide local exhaust ventilation, Self-Contained Breathing Apparatus (SCBA) or an airline respirator when welding, heating or burning galvanized or cadmium-plated metal.

4.5.4.5 Permit receiver must fill the Welding Job Checklist YMS- SHEM-08.10-F-13) and submit it at the time of receiving permit.

4.5.4.6 PPE and clothing requirements for cutter, welder and welder's helper shall be in accordance with PPE procedure (YMS-SHEM-P-08.08).

4.5.5 Usage of Oxygen (O2):

4.5.5.1 Use Oxygen only for intended purpose.

4.5.5.2 Do not use Oxygen for the following cases:

4.5.5.3 As a substitute for compressed air.

4.5.5.4 In pneumatic tools, in oil preheating burners, to start internal combustion engines, to blow out pipelines, to dust clothing or work, or to create pressure for ventilation.

4.5.5.5 To strike an oily surface, clean greasy clothing, or added to fuel oil or other storage tanks.

4.5.6 Usage of Torch:

4.5.6.1 Check torch connections for gas tightness after assembly and before lighting.

4.5.6.2 Use soapy water or equivalent to check leakages. Do not use open flame to find out leakages.

4.5.6.3 Purge hoses individually, before lighting the torch for the first time each day.

4.5.6.4 Hoses shall not be purged into confined spaces or near ignition sources.

4.5.6.5 Use friction lighters for ignition. Do not use matches, cigarette lighters or hot metals for lighting torches.

4.5.6.6 Follow manufacturer's recommendations with respect to the sequence of operations in lighting, adjusting, and extinguishing torch flames.

4.5.6.7 Comply with cylinders, hoses and accessories specifications, handling & storage requirements in accordance with Material Handling & Storage procedure (YMS-SHEM-P-08.03). Communicate with welders to take appropriate actions of closing the cylinder's valves in case of any leakages, fires and/or when not in use from the cylinder valves / regulators.

4.5.7 Electric Current

4.5.7.1 Ratings shall be adequate to handle the job.

4.5.7.2 Welding machines shall not be operated above the electric current ratings and corresponding rated duty cycles as specified by the manufacturer, and are not to be used for application other than those specified by the manufacturer.

4.5.7.3 For safety during welding, the Negative terminal of welding machine must be connected as close as possible to the work piece. This ensures that the return current flows back to the machine through shortest path and hence prevents overheating and sparking in that area.

4.5.7.4 Chains, wire ropes, and hoists shall not be used to carry welding current.

4.5.7.5 Welding current shall be returned to the welding machine by a single cable extending from the work to the welding machine.

4.5.8 Welding Cable

4.5.8.1 Welding Cable shall be of the flexible type designed especially for welding service and of a size adequate for expected current and duty cycles.

4.5.8.2 Coiled welding cable shall be spread before use to avoid overheating and damage to insulation.

4.5.8.3 The welding machine operator shall inspect welding cable for wear or damage before each use and Maintenance Department, and shall inspect every six months for wear or damage of welding cable.

4.5.8.4 Welding cable shall be of a size suitable for the current rating of the welding machine.

4.5.9 Grounding

4.5.9.1 The work piece of metal to be welded shall be grounded.

4.5.9.2 The work lead shall not be used as the grounding lead.

4.5.9.3 All fixed welding machines shall be grounded. The welder shall verify all grounds.

4.5.9.4 Grounding may be accomplished by locating the work on a grounded metal floor, plate, or by connection to a grounded building frame or by connecting through the grounding of the welding machine.

4.5.10 Electrode Holder

4.5.10.1 When welding is interrupt for about half an hour, the electrode holder shall be de-energized by turning off the machine.

4.5.10.2 When not in use, electrodes shall be removed from holders and placed so they cannot make contact with persons, conducting objects, flammable liquids, or compressed gas cylinders.

4.5.10.3 When the machine is to be moved outside its radius, the input power supply to the equipment shall be electrically disconnected.

4.5.10.4 Electrode holders shall be insulated and kept in good condition.

4.5.10.5 Damaged holders shall be discarded.

4.5.10.6 Electrode holders shall not be cooled by immersion in water.

Note: Permit issuer to ensure each worker permit receiver takes-out his lock from LOTO (if installed) after closeout of hot work permit.

4.5.11 Hot Tapping

A procedure used in the repair, maintenance and services activities, which involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure, in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

4.5.11.1 Use Hot-Tapping option only where it is impractical to take the equipment out of service. In order for this work to be, accomplished safely, proper precautions must be taken and proper work procedures are developed and followed.

4.5.11.2 Follow guidelines given in Guidelines for Equipment Preparation for Maintenance (Appendix YMS-SHEM-08.10-GL-03).

4.5.11.3 Conduct formal JSA as per YMS-OMS-P-311.02, implement recommendations and Management of Change (MOC) review and approval process.

4.5.11.4 Fill Hot Tapping Data Sheet (YMS-SHEM-08.10-F-18)

4.6 Electrical Work Permit

Work on, with or proximity of live electrical installation such as testing and measurement, repairing, replacing, modifying, extending, erecting, maintaining and inspecting using Electrical Work Permit (YMS-SHEM-08.10-F-03).

The Electrical Work Permit is to, Safeguard authorized personal working in order to prevent unexpected power isolation affecting the normal operation of the plant and prevent unexpected incidents during restoration of power also while Isolation and Restoration of Transformer Feeders, Switchgears, Motors and Transfer of Automatic Transfer Switches or other Electrical Equipment.

This section provides additional requirements for Electrical Work Permits to cover the related electrical risks in support of a Hazardous Assessment and control Form.

Additional information relating to Electrical Safety can be found in Electrical Safety procedure (YMS-SHEM-P-08.05) as well as in SABIC Manufacturing Standard (SMS) ED003 (Electrical Authorization Levels).

4.6.1 Work requiring an Electrical Work Permit is electrical work in combination with any of the factors below:

4.6.1.1 Working near electrical system(s): Working close enough to expose the worker to any electrical hazard according to ARC flash study (refer to Electrical Safety procedure: YMS-SHEM-P-08.05).

4.6.1.2 Working on energized electrical system(s): Intentional contact with energized circuit parts or conductors (or entry within the prohibited approach boundary) with the purpose of installing, modifying and/or repairing equipment.

4.6.1.3 All rack-out/in with Electrical Work Permit.

4.6.1.4 Work on\with an electrical installation such as testing and measurement, repairing, replacing, modifying, extending, erecting, maintaining and inspecting.

4.6.2 Electrical work activities shall be controlled through an Electrical Work Permit which is complimentary to Hazardous Assessment and control Form. The only deviation permitted from this requirement is to be made through an approved and authorized risk based process.

4.6.3 Electrical equipment and wiring shall meet the requirement of the hazardous area classification in accordance with the applicable standards/ regulation, such as NEC, IEC 79, EN50, API RP 540, etc.

4.6.4 Use only certified components or enclosures in hazardous areas. Class group and area classification shall be marked on the equipment and to be used in accordance with area classification.

4.6.5 Electrical safety equipment (i.e., gloves, sleeves, blankets, hot sticks) shall be

used and inspected prior to each use as per Electrical Safety procedure (YMS-SHEM-P-08.05).

4.6.6 Once the job is initiated, review of the job execution shall be carried out. Then each step shall be carefully identified with help of relevant SOP/SMP.

4.6.7 Approval shall be taken from the relevant authority before execution of the job.

4.6.8 The decision on the requirement for a higher-level formal Job Safety Analysis (JSA) based on the outcome of the hazard assessment and control form as per (YMS-SHEM-P-02.02)

4.6.9 Competent Electrical Person CEP (Work Permit Receiver)

A person authorized by the Electrical Installation Responsible Person (EIRP) with the necessary competence (training experience and knowledge) to recognize and avoid danger. Responsible for safe working at the work site as per SHEM08.05.

4.6.10 Electrical Work

Work on, with or near an electrical installation such as testing and measurement, repairing, replacing, modifying, extending, erecting, maintaining and inspecting.

4.6.11 Grounded

Free from any electrical connection to a source of potential difference and from electrical charge; not having a potential different from that of the earth.

4.6.12 High Voltage

Line voltage: higher than 1000VAC, phase ground higher than 1500VDC.

Note: Additional information on specific definitions above and other definitions relating to Electrical Safety can be found in Electrical Safety procedure (YMS-SHEM-P-08.05) as well as in SABIC Manufacturing Standard (SMS) ED003 (Electrical Authorization Levels).

4.6.13 Working on De-Energized Electrical Equipment

4.6.13.1 Confirmation of the details of the work to be carried out.

4.6.13.2 Confirmation of the exact equipment which has been made dead and its precise location.

4.6.13.3 The LOTO process shall form the basis of the isolation requirements.

4.6.13.4 Confirmation that the equipment is isolated from all sources of electrical energy.

4.6.13.5 Confirmation of the points of electrical isolation/disconnection.

4.6.13.6 Confirmation that all points of electrical isolation have been secured by the use of locks and tags.

4.6.13.7 Confirmation that the electrical equipment has been proved dead with an approved voltage indicator at the point of work.

4.6.13.8 Confirmation of the named competent person responsible for the work who will be present for the duration of the work.

4.6.13.9 Confirmation of the PPE requirements specific to any electrical work.

4.6.13.10 Confirmation that the conditions and limits specified in the Electrical Work Permit and additional permits have been communicated by the receiver and are understood by the assigned work team and all others involved with the task.

4.6.13.11 Confirmation of the points where the conductors are earthed (grounded) including any earths/grounds attached adjacent to the work.

4.6.13.12 Confirmation that the earths/grounds cannot be removed without the use of a tool or key and authorization by the Permit issuer.

4.6.13.13 Confirmation of the points where warning notices have been placed to indicate adjacent live equipment.

4.6.14 Working on energized electrical system(s)

4.6.14.1 Confirmation that it is unreasonable for the equipment to be dead.

4.6.14.2 Confirmation that the persons performing the work are trained and competent to avoid danger during their work on an energized electrical system.

4.6.14.3 Confirmation that suitable precautions including tools, equipment and PPE are in place.

4.6.14.4 Confirmation of controls to prevent access to energized parts.

4.6.14.5 Confirmation that an additional electrical authorized and competent person is present whose sole task is to make sure that all necessary safety aspects shall be addressed during the work on energized electrical systems.

4.6.14.6 Confirmation that suitable PPE is available for personal protection from arc flash where appropriate.

4.6.14.7 Working on energized electrical system shall be performed according to Electrical Safety procedure (YMS-SHEM-P-08.05) (voltage level guidelines).

4.7 Confined Space Entry Permit

This unit shall set up the minimum requirements for Confined Space Entry Permit to protect personnel from hazards such as oxygen deficiency, toxic materials, flammable substances and energy or movable parts of power-driven equipment when working in confined spaces as well as rescue requirements using Confined Space Entry Work Permit (YMS-SHEM-08.10-F-04).

Confined Space is any enclosure space (though not always entirely) having a limited opening for entry and exit; presents serious hazards to occupants; or which is not intended for continuous employee occupancy. The space is large enough and configured to allow entry (including partial entry) of a person (s) for the performance of an assigned task. Confined spaces include, but are not limited to, storage tanks, process vessels, ventilation and exhaust ducts, manholes, pits, and excavations more than 1.2 meters in depth.

To stay in tune with new opportunities of controlling Confined Space Entry, Camera Controlled processes are being used nowadays. This process includes a number of aspects such as camera control inside and at the Confined Space Entrance(s), direct communication via intercom system and continuous monitoring of the Confined Space conditions. In a centralized control room multiple Confined Spaces can be monitored by one or more Safety persons. Risk assessment is mandated to capture all relevant aspects (eg. continuous entry control, number of Entry/Manhole Attendants and their availability in a specified area, availability and deployment of a rescue team, registration of entrants, alarming method, ...) The Site needs to document the details and outcome of the risk assessment and needs to decide whether this creates an adequate level of Safety for the entrants before this method is used.

4.7.1 A permit required confined space is a confined space in combination when any of the factors below are in place:

4.7.1.1 The atmosphere is or could become hazardous, either because of its normal contents or because of the nature of the work to be done.

4.7.1.2 The walls are inwardly converging such that an entrant could be trapped or asphyxiated by the internal configuration.

4.7.2 Specific terms used in this procedure;

4.7.2.1 Atmosphere

Environment within the confined space that may expose the entrants to risk of death or injury due to presence of flammable or toxic materials, or oxygen deficiency.

4.7.2.2 LEL (Lower Explosive Limit)

The lowest concentration at which a flammable substance can catch fire upon contact with an ignition source. The LEL shall be Zero (0%) for any entry into Confined Space at all.

4.7.2.3 Breathing Air Apparatus

a) Self-Contained

b) A positive pressure respirator in which the supply of air is carried by the wearer In Line through portable pressurized cylinder.

c) A positive pressure respirator on which air is made available to the wearer via a hose connected to a remote, and dedicated breathing air supply.

4.7.2.4 Standby Man (Entry Attendant)

Standby Man Shall be direct hire or Short/Long Term contractor employee who is trained/qualified, certified and interviewed by EHSS Department, authorized by his sponsoring Department Sr. Manager and to monitor the entry site and seek emergency assistance to ensure the safety of personnel present within the confined space.

4.7.2.5 Rescue Plan

A Rescue Plan (YMS-SHEM-08.10-F-12) that is used to rescue the

persons from the Confined Space in case of Emergency. Rescue plan shall be approved and all actions shall be taken prior to work permit. Rescue Plan shall be prepared followed by the formal Job Safety Analysis (JSA) and shall be approved by all concerned prior to initial entry.

4.7.3 General Guidelines for Confined Space Entry Permit

4.7.3.1 Respective area owner shall identify all Confined Spaces by posting signs stating “DANGER – CONFINED SPACE – ENTER BY PERMIT ONLY” at entry points in case of entry.

4.7.3.2 Area Owner shall establish a master list of all confined space in their area by a team consists of Operation, EHSS engineer, support maintenance team, technical discipline if required and to be approved by Concern Owner Sr. Manager.

4.7.3.3 Only one Confined space entry permit shall be issued for entry to specific confined space and shall governor the other groups entering the confined space to execute their activities.

4.7.3.4 Blind list with process equipment to be attached to the LOTO.

4.7.3.5 Marked P & ID’s

4.7.3.6 Rescue plan (YMS-SHEM-08.10-F-11) in case if confined space.

4.7.3.7 Once a Rescue team is deployed to perform a Confined Space rescue all Confined Space Entries on site that depend on that same Rescue team shall stop their activities until the Rescue team is fully available again for rescue.

4.7.3.8 Confined Space Ventilation plan (YMS-SHEM-08.10-F-20)

4.7.3.9 For Excavation jobs, there may be some situations when Ventilation plan and Electrical lay out plan is not applicable due to wide-open areas and not being used any electrical equipment(s) in excavation. In such cases, ventilation and electrical hazards to be discussed thoroughly in Formal JSA as per YMS-SHEM-P-02.02 (if any) by the team and ventilation and electrical lay out plan may be not required.

4.7.3.10 Standby Man shall be mandatory for all confined space entry permits. No Confined Space Entry shall be allowed without Standby Man.

4.7.3.11 Shall assign one standby man for each confined space entrance whenever having multiple selected entry points

4.7.3.12 Permit issuer shall ensure that Confined Space Entry Permit is obtained before entry is authorized.

4.7.3.13 As issuer only Supervisors\ assigned supervisors and above are authorized to issue. And as receiver Supervisor-direct hire are authorized to receive the Confined Space Entry Permit, then all work permit types inside Confined Space shall be issued & received by supervisors after joint site visit.

4.7.3.14 Permit issuer shall suspend the Confined Space Entry Permit when a

condition is not met the requirement of the Confined Space Entry Permit.

4.7.3.15 Permit issuer shall ensure atmosphere within the confined space is tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of hazardous gases.

4.7.3.16 In case entry is not perform inside the confined space within half hour after Confined Space permit issued, the confined space work permit shall be considered as suspended and need to do the gas test and reconfirm all requirements again before entering the confined space permit.

4.7.3.17 The default maximum frequency for gas test inside the confined space is every 2 hours. In case of continuous gas test requirement, this frequency (logging in Gas Test Log sheet in task related work permit) shall not exceed one hour recording.

4.7.3.18 DO NOT assign Standby Man and Fire watch with any other duties while acting in the capacity of Standby Man & Fire Watch and allow leaving their post while workers are still inside.

4.7.3.19 Display confined space entry permit at the job site or confined space entry point to allow entrants to confirm that permit entry requirements are in place.

4.7.3.20 In case of radiation activity inside confined spaces, The RSO shall not allow any entrants including stand by Man to enter the barricaded area except radiographers. The Radiographers can be trained as Stand by man to do stand by man roles inside barricaded area as well as his roles for radiography purposes.

4.7.3.21 The confined space does not contain sludge or deposit of hazardous material likely to give off harmful fumes, when disturbed. (e.g., Hydrocarbon pockets in polymer chunk inside a reactor dealt with great care).

4.7.3.22 The pressure requirement and supply volume of air shall match the equipment specification to achieve the desired ventilation. It is recommended that a particle strainer be in-stalled to prevent blockage of the small orifices in the air movers/ fan. Only explosion proof electric fans/air movers shall be used to ventilate confined spaces that may contain flammable gases or dust. The use of nitrogen or any other compressed gas (e.g. oxygen) to operate an appropriate type air mover/ventilate confined space is prohibited.

4.7.3.23 Care shall be taken to ensure that contaminants are not drawn into the Confined Space from external sources, such as internal combustion engines, sewer drains, process vents, or hot work activities located close to open man ways. Ventilation arrangements shall not interfere with the entry and exit of personnel.

4.7.3.24 Only explosion proof electric fans/air movers shall be used to ventilate confined spaces that may contain flammable gases or dust. Fans and

air movers must be electrically bonded to the vessel/ grounded to prevent the accumulation and discharge of static electricity.

4.7.3.25 Ventilation of vessel showing only the bottom manway open this ensures that the whole vessel is ventilate. If the Middle or top Man way is opened the air flow will short circuit and there may be hydrocarbons in the bottom of the vessel.

4.7.3.26 Sight Glass connected to a process flare or drains must be blinded. Local sight glass need only be isolated and drain valve open and drain proved to be clear and not blocked.

4.7.3.27 Ensure air supply is monitored and entanglement of air and / or lifelines are taken care of. Prevent air lines being damaged so that the airflow is restricted or stopped. Ensure all entry and exit ways are clear.

4.7.3.28 DO NOT exceed the duration of activities in Confined Space beyond the time required to complete the task or job identified on the Confined Space Entry Permit.

4.7.3.29 Permit receiver & issuer shall inspect retrieval system prior to initial entry into the confined space area to ensure that the equipment is functioning properly.

4.7.3.30 Comply with Working at Height procedure (YMS-SHEM-08.09) for use of scaffolding in confined space. If scaffolding will create additional hurdle to entrance or exit, then it shall be considered in the rescue plan”

4.7.3.31 Keep compressed gas cylinders and welding machines outside, when welding or cutting is being performed in any confined space as Welding gas cylinders are not permitted inside the confined space.

4.7.3.32 Immediately prior to the use of gas welding equipment, the Maintenance Supervisor shall inspect and ensure that all equipment is free of leakage.

4.7.3.33 Any person entering to confined space shall have inspected O2 meter showing Oxygen concentration continuously and alarm in case of oxygen variation. In case of group entry, one person out of four shall have pocket oxygen meter.

4.7.3.34 Interior heat stress shall be monitored by following Heat and Cold Stress procedure (YMS-SHEM-P-12.06) requirement.

4.7.3.35 Air Conditioner can be installed wherever it is convenient.

4.7.3.36 Each person entering confined space with vertical entry shall wear a full body harness attached to a lifeline at all times with provisions made for rescue from the point of entry. The free end of the lifeline shall be secured outside the confined space (One end is hooked to entrant, other end must be secured (hooked, tighten) outside for retrieval purpose).

4.7.3.37 There may be situations where it shall not be practical to keep lifeline

attached to personnel working within a confined space due to confined space configuration, which will impact the rescue to be safe. Lifelines need not be used in the following cases but shall be clearly mentioned in formal JSA as per YMS-SHEM-P-02.02 and Rescue Plan:

a) Where the concentration of structural members piping, equipment and other obstructions to free travel within the confined space is such as to render a lifeline useless for rescue purposes.

b) Where the concentration of workers within the confined space is such that the use of lifelines is likely to cause line entanglement, there-by impeding the rescue effort.

c) Switch off lights and welding torch from confined space when not in use. (This applies to lunch/dinner and coffee/tea breaks as well)

d) Use of rope ladder is not allowed unless no other alternative method is being possible to be used and shall be controlled through approved formal JSA.

e) When work is complete and the confined space is ready to be returned to normal service, the confined space shall be inspected to ensure all Fire protection equipment is installed back and functioning.

4.7.4 Preparation of Confined Space for Maintenance Activity:

4.7.4.1 Isolation:

a) Energy source shall be considered de-energized when the source is removed, locked out / tagged out. Refer to Control Isolation of Hazardous Energy including LOTO procedure (YMS-SHEM-P-08.11) Electrical Safety procedure (YMS-SHEM-P-08.05).

b) Equipment Isolation (Mechanical Isolation): For a confined space entry, the minimum requirement is rated capacity blinding or physical disconnection. Refer to Control Isolation of Hazardous Energy including LOTO procedure (YMS-SHEM-P-08.11) for more details.

Note: N2 connection source to the confined space shall be blinded before allowing entry. In case of N2 header (plant/unit/complex) at battery limit is not blinded, N2 utility stations surrounding the confined space shall be blinded unless N2 source is highly needed; the source can be used through the approval of formal JSA.

4.7.5 Decontamination/Purging:

Equipment to be entered shall be decontaminated and cleaned utilizing different methods as applicable, which include; Draining, De-Pressurizing, Purging, Flushing, Washing, and Steaming etc.

4.7.5.1 Discharge liquids or solids from the equipment. Thoroughly clean pumps and associated equipment of sludge, sediment, and residue.

4.7.5.2 Flush with water and if practical, fill with water and boil.

4.7.5.3 De-contamination shall be perform for the equipment to ensure free of toxic/hydrocarbons before handling the equipment.

4.7.5.4 Purge with inert gas if the equipment previously contained flammable material.

4.7.5.5 Purge with air. Open manholes and atmospheric vent lines. If oily sewer is close by, it should be covered to avoid ingress of hydrocarbon vapors into the confined space.

4.7.5.6 Ensure the low point drains shall remain open to eliminate water accumulation.

4.7.5.7 Achieve safe levels of decontamination for entry into confined spaces by decontaminated the process to the acceptable safe limits.

4.7.5.8 In case of system\equipment, safe limit could not be achieved with decontamination activities risk assessment shall capture the control measures as per safer procedure (YMS-SHEM-P-02.00).

4.7.6 Ventilation

A positive means of ventilating the confined space shall be established and kept operated the entire time while work is in progress. Following tips shall be considered for ventilation: Positioning of mechanical aspirators, drawing of fresh air, routing of exhaust air.

4.7.6.1 Confined Space Ventilation plan (YMS-SHEM-08.10-F-20) shall be prepared and approved.

4.7.6.2 Site shall develop master list including all confined space in each area as per Master list YMS-SHEM-08.10-L-01

4.7.6.3 Only pneumatic driven blower, fans and movers are allow to ventilate the confined spaces.

4.7.6.4 Air conditioners can be installed as an alternate of ventilation wherever it is convenient. Air Conditioners capacity will be used to identify the ventilation rate required. However, in case of use of Air Conditioners for ventilation, Air Movers shall be kept ready to use in case of Air Conditioners shutdown or any emergency.

4.7.6.5 Fans and air movers shall be ensured that it is electrically bonded and grounded to the vessel.

4.7.6.6 Comply with following point for continuous forced/induced air ventilation in confined space;

4.7.6.7 Ventilation of a space will also vary depending on the type of material that is being ventilated from the space.

4.7.6.8 The ventilation rate inside the confined space including the ventilation rate in the breathing zone shall be 15-20 complete air changes per hour or one cycle every 3-4 minutes for a confined space. It can also be calculated by dividing ventilating equipment flow rate (capacity) over volume of confined space using the same unit system.

4.7.6.9 Do not use Oxygen/Nitrogen to ventilate confined spaces, as this could lead to oxygen enrichment/deficiency of the space.

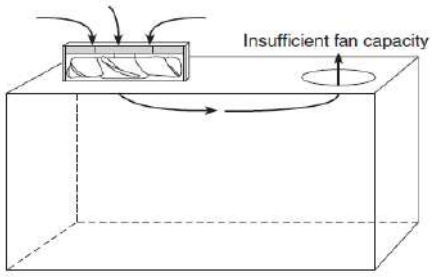
4.7.6.10 Ensure air supply for the forced air ventilation comes from clean source and shall not increase the hazards in the space.

4.7.6.11 The exhaust air must be routed so that personnel or equipment is not exposed when a ventilator is used to purge a hazardous atmosphere from the confined space.

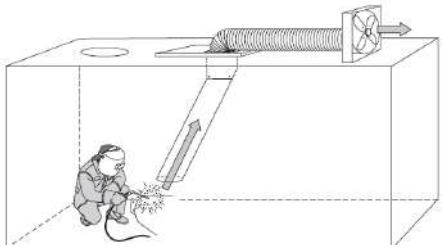
4.7.6.12 Do not stop the ventilation system while personnel are inside the confined space, in any case.

4.7.6.13 Ventilation strategy must be developed to ensure thorough air changes within the complete confined space preventing any channeling or pockets of hazardous contaminants still present inside (see Figure#2 A and Figure#3).

Figure #2: Example of effective



In-Effective Air Changes#A



Effective Air Changes#B

4.7.6.14 Local exhaust ventilation shall be used during welding activities to extract hazardous fumes and vapors generated during the activity see figure #2B.

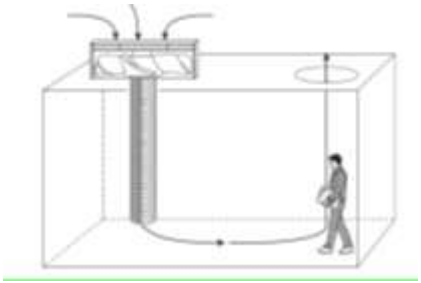


Figure #3: Example of effective

4.7.6.15 Atmospheric monitoring is essential to be done in vicinity of air movers / air conditioners making sure that the air supplied to confined space from external atmosphere is free from any hazardous contaminants.

4.7.7 Work Signboard Requirement

4.7.7.1 During Entry

When personnel are inside the confined space, a signboard containing

the following information must be posted at the point of entry of ground level as appropriate.

CAUTION

PHYSICAL ENTRY IN PROGRESS

PERSONNEL WORKING INSIDE CONFINED SPACE

4.7.7.2 Interruption of Entry

When entry is interrupted for any reason, a signboard containing the following information must be posted at each point of entry.

CAUTION

ENTRY IS NOT PERMITTED

4.7.8 Gas Testing Requirements

4.7.8.1 Gas testing of the atmosphere of Confined space: Only authorized gas tester shall perform the gas test by using only calibrated gas detectors.

4.7.8.2 Different toxic substances produce different health effects at different concentrations. It is therefore essential to know and find out what toxic substances could be present in the confined space so that the correct gas testing equipment and their corresponding alarm concentrations on this equipment can be preset to provide a warning in response to a dangerous.

4.7.8.3 Conduct gas test to ensure that:

a) Flammable conditions do not exist;

b) Employees are not exposed to harmful concentrations of toxic substances or oxygen deficient / enriched atmospheres;

c) Toxic and combustible gases shall be within safe limit.

d) Stop ventilation / purging at least 15 minutes prior to conducting the initial gas tests, to allow gas concentration to equalize.

e) Perform gas tests throughout large spaces such as tanks, drums, towers or excavations where it may be possible for gas to be trapped in dead ends of nozzles, plugged down-comers, structural members, etc.

f) The gas tester shall not enter the confined space for testing purposes unless the results across the cross section (top, middle and bottom sections) indicate that the oxygen level range between 19.5%~21%.

g) In case of the gas tester need to enter confined space, he shall fulfill

the following requirements:

1. Shall wear SCBA
2. Assign standby man to monitor his entry through log sheet.
3. For continues basis gas testing, Test results shall be recorded on the confined space entry permit. Testing on a continuous basis or continuous monitoring must be required depending upon conditions.
4. Flammable Vapors: Atmosphere within the confined space shall be checked with an approved and calibrated gas detector. If entry is required to carry out complete testing, continuous explosively measurement shall be made as the confined space is entered. Under no circumstances shall entry for testing be continued if measurement of explosively exceeds 0% of LEL (Lower Explosive Limit) at any stage of entry.
5. Oxygen Content: Level in the confined space shall be measured with an approved & calibrated oxygen meter. Entry shall only be permitted if the oxygen presence is range between 19.5%~21%.

4.7.9 Tools, Equipment's and PPE's Requirements:

4.7.9.1 Tools Requirement

a) Pneumatic tools to be used inside confined space shall only be connected to an air compressor approved for breathing air service and monitored to guard against contamination of the intake air.

b) The inspection of hand power tools shall be done as per Tools Handling procedure (YMS-SHEM-P-08.07).

c) Respiratory protection equipment: Based on the results of the gas tests and a review of the work to be performed, if abnormal atmospheres can be expected, lifeline must be used.

4.7.9.2 Electrical Equipment's Requirements

a) For any confined spaces, only 24V explosion proof light shall be used for illumination.

b) All electrical equipment shall be inspected and tested including the GFCI before operating them prior to initial use. One GFCI can be used in distribution panel for number of cables as per capacity.

Note: In conducting confined spaces (where contact with metal cannot be avoided) electrical equipment shall only be used in accordance with Electrical Safety procedure (YMS-SHEM-P-08.05). In the absence of regulations, electrical equipment shall only be used when one of the following is met:

a) Own source of energy (battery)

b) Extra Low Voltage: ≤ 50VAC or ≤120VDC

c) Class 2 connected to a galvanic separation transformer located

outside the confined space

d) Each Confined Space shall have spare approved classified / explosion proof flashlight available with Standby Man.

e) Flexible/extension cords, hand and stand lights shall be provided with an electrical inspection sticker for Confined Space separately. The sticker shall include clear yellow mark “For Confined Space Only”, name of the inspector, date of the inspection and the date of the expiration.

f) Damaged/frayed Flexible cords/cables/wires shall not be used. Cords shall be inspected before each use. Flexible cords shall be used only in continuous lengths without splice or tape.

g) All electrical cables and wires shall be arranged and organized to prevent any slip, trip or even any other hazards.

4.7.10 Scaffolding Requirements inside Confined Space

4.7.10.1 Fall protection shall be adhered as per Working at Height procedure (YMS-SHEM-P-08.09) requirements and anchorage points / lifelines shall be as per NFPA 1983 certified or equivalent (1/2” 9000lb strength – Static Kernmantle Construction Rope)

4.7.10.2 Aluminum tubing shall not be used where there is likelihood of contact with materials harmful to aluminum such as caustic liquids, damp lime, wet cement, and seawater.

4.7.11 PPE’s Requirements (For confined space)

4.7.11.1 SCBA (Self Contained Breathing Apparatus) is mandatory to be worn during the gas testing for toxic atmosphere and oxygen deficiency atmosphere

4.7.11.2 SCBA is mandatory to be with Standby Man at the equipment entrance.

4.7.11.3 All personal protective equipment shall be in good condition prior to be used as specified in the work permit.

4.7.11.4 Authorized entrants must wear safety harnesses or a built-in harness with lifeline for confined space entries and only if rescue plan require it.

4.7.11.5 Lifelines shall must be tied securely outside the confined space to prevent inadvertently pulling the lifelines into the confined space.

4.7.11.6 In some confined space areas, it may not be practical to have the lifelines attached due to the configuration of the confined space or the number of people involved in the confined space. Such cases shall be discussed in formal JSA & rescue plan for alternate safe rescue arrangements. I.e. Full body harness or safety coveralls with a built in harness shall always be worn and the lifelines shall be kept ready at the confined space entry access point for emergency use.

4.7.12 Emergency Equipment Requirements

4.7.12.1 Permit issuer & receiver shall ensure concern users inspected lifelines for any defects or damages prior to all confined space entries.

4.7.12.2 The following minimum equipment must be maintained ready for emergency use at the point of entry:

a) Appropriate length of lifeline.

b) Self-contained, 60 minutes' positive pressure breathing air apparatus (Air Pak).

c) Fire Extinguisher.

d) Radio/Air horn or other adequate communication device(s) to summon additional help in case of an emergency.

4.7.13 Hot Work inside the Confined Space

Consider following points for hot work activities in confined spaces:

4.7.13.1 Ensure adequate ventilation at all times when performing hot work in a confined space.

4.7.13.2 No gas torches shall be left unattended inside any confined space.

4.7.13.3 Disconnect the hose at regulator, if removal of the torches is impractical inside confined space.

4.7.13.4 Do not permit welding or cutting activities in an oxygen-enriched atmosphere.

4.7.13.5 Any hot work shall consist of minimum dry chemical fire extinguishers located at the work site outside the confined space in addition to any unit fire protection equipment available at the area. Water hose, fire resistant blankets etc. shall be readily available for use whenever and wherever hot work is performed. Ensure all measures taken for fire prevention & fire protection.

4.7.13.6 Remove any flammable and combustible material from the area. If maintenance activity requires combustible materials to be used inside confined space during Mechanical Hot activities (wood scaffolding, paint ....) shall be permitted through Formal JSA

4.7.13.7 Fire blankets shall be UL listed (Under Writer laboratory) FM approved (Factory Mutual) or any other certified, recognized international organization.

4.7.13.8 Disposable (white/light) coverall is not allowed to be worn during any hot work activities.

4.7.13.9 Do not permit more than one Hot Work Activity at same time in one confined space.

4.7.14 Standby Man Responsibilities:

Standby Man Shall be direct hire or contractor employee who is trained/qualified, certified and interviewed by EHSS Department, authorized by his sponsoring Department Sr. Manager

4.7.14.1 To monitor the entry site

4.7.14.2 Seek emergency assistance to ensure the safety of personnel present within the confined space.

4.7.14.3 Maintain a record of all persons entering / exiting the confined space at each entry or exit at the back of confined space permit. Additional sheet can be used upon requirement.

4.7.14.4 Wear Color vest for identification.

4.7.14.5 Terminate the entry in case of any condition changes at site as per Confined Space permit.

4.7.14.6 Notify to Fire Watch/ permit issuer/Permit Receiver if a confined space entry is aborted due to premature termination of action, equipment failure, and inadequate procedure, medical or other emergency that requires immediate departure from the confined space.

4.7.14.7 Not enter in confined space in any circumstance and shall not leave the site.

4.7.14.8 Monitor the entry site and seek emergency assistance to ensure the safety of personnel present within the confined space.

4.7.14.9 Maintain visual /verbal contact and maintain eye contact with entrants with the workers inside the confined space.

4.7.14.10 Stop work if the conditions deteriorate.

4.7.14.11 Sounding the air horn alarm to notify everyone that the confined space shall be evacuated.

4.7.14.12 Use of a portable radio for communication or air horn.

4.7.14.13 Notify the permit issuer if a confined space entry is aborted due to premature termination of action / operation occupancy of the confined space due to equipment failure, inadequate procedure, medical or other emergency that requires immediate departure from the confined space.

4.7.14.14 Standby man shall ensure entrants condition by frequent communication.

4.7.14.15 Ask all the entrants to leave the confined space immediately in case of emergency, and perform the headcount ensuring all safe and no one leftover.

4.7.14.16 Assist in evacuating personnel during the emergency without entering confined space.

4.7.14.17 Maintain eye contact with the entrants as much as possible. In certain cases, eye contact and visibility of entrants to confined spaces can be hindered due to the size of the equipment or the configurations. In such cases, additional standby men (if required) can be added with one stationed outside the entry point and the other being inside who can maintain eye contact with the entrants and the external standby

man.

4.7.14.18 Familiar with the Emergency Alarm Manual Call Point/Assembly Area.

4.7.14.19 Whenever Standby Man leave the activity area, the job shall be stopped or endorse to another qualified Standby Man.

4.7.15 Rescue Plan

The Rescue Plan (YMS-SHEM-08.10-F-12) is an integral part of Confined Space Entry Permit. No Confined Space Entry is allowed without approved Rescue Plan. For rescue plan, below guidelines to be followed in addition of Rescue Plan (YMS-SHEM-08.10-F-11).

4.7.15.1 Rescue plan shall be conducted by a formal team consisting of Fire Captain (Fire shift Supervisor) or above (Incident Commander or Fire Manager), Operation (Supervisor & above) and Maintenance (Supervisor & above).

4.7.15.2 Rescue Plan (YMS-SHEM-08.10-F-11) shall be attached with confined space entry permit at site.

4.7.15.3 Rescue Plan shall be approved /revalidate by Fire Captain (Fire shift Supervisor) / Incident Commander / Fire Manager, before start of any confined space entry and Permit issuer shall notify Fire Captain (Fire shift Supervisor) or above (Incident Commander or Fire Manager), about any change in the confined space during the time of entry.

4.7.15.4 Ensure availability of a retrieval system (retrieval line, full body harness, and a lifting device) to retrieve personnel from vertical type confined spaces more than 1.5-meter deep “if applicable by rescue plan”.

4.7.15.5 Attach other end of the retrieval line to a mechanical device or fixed point outside the confined space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary.

4.7.15.6 Fire captain (fire shift supervisor)/ Incident Commander / Fire Manager is responsible to provide specifications of Mechanical device used for rescue purpose in Rescue Plan.

4.7.15.7 Use safety harness that permits easy rescue of personnel from the confined space during emergency conditions and avoid suspending a person in an upright position either due to harness type that or the wrist type rescue harness. (A hoisting device or other effective means for lifting personnel from confined spaces is preferred).

4.7.15.8 The permit issuer (Supervisor) shall notify the Fire captain/ Incident Commander / Fire Manager about the activity each shift as per the rescue plan.

4.7.15.9 Rescue Man is required as per rescue plan output; Rescue Man is required to be at location during the job execution.

4.7.15.10 Rescue Man shall be available at location and responsible for:

a) Familiarize with provided rescue equipment and certified as rescue-

II from SFTC.

b) Guide ERT team in case of emergency initiated

4.7.15.11 During Confined Space Entries, area qualified operators shall ensure the full compliance of confined space guidelines and do the necessarily actions to eliminate unsafe act/conditions by monitoring the condition of the areas for vapor releases, alarms or other situations that could endanger personnel working inside the confined spaces.

4.7.16 Personnel Entering Confined Space (Entrants)

4.7.16.1 Ensuring that Work Permit related to the physical entry for the confined space is available.

4.7.16.2 Informing the entry attendant before entering and after exiting the confined space by filling and signing the Confined Space Entry Log Sheet.

4.7.16.3 On columns, vessels etc., personnel who enter from one manhole and intend to exit from another manhole shall register at the manhole they intend to exit from i.e. they shall sign the confined space log sheet and inform the entry attendant at the manhole of their planned exit, before entering the vessel.

4.7.16.4 Complying with all the requirements of the safe work permit for entry.

4.7.16.5 Knows and understand the hazards in the Confined space.

4.7.16.6 Knows and uses equipment properly,

4.7.16.7 Is able to communicate with the attendant.

4.7.16.8 Knows what the acceptable entry conditions for the space are,

4.7.16.9 Knows how to contact the attendant if conditions become unacceptable,

4.7.16.10 Exits the space when ordered, when alarm sounds, or when dangerous situation is noted.

4.8 Excavation Work Permits

Excavation means any activity where the surface of the ground is penetrated starting from 10 cm depth.

Excavation Work Permit (YMS-SHEM-08.10-F-06) issuing in classified and non-classified area regardless of tools to be used (Manual/Machine Excavation). Hazardous Assessment and control Form shall be made by the receiver and permit issuer to seek an alternative means of completing the required activity.

Excavation Clearance (YMS-SHEM-08.10-F-11) shall be obtained & approved prior to excavation work permit.

4.8.1 All underground areas and services including foundations, pipelines, cables, drains and channels shall be identified (e.g. through P&ID's, site & plant layout drawings) as part of the process for raising an excavation permit for the specified area of work. This to make people aware about the underground risks prior to

breaking the ground.

4.8.2 Use of a cable locator and/or other techniques such as exploratory excavation to identify the location of underground services shall be implemented.

4.8.3 If the presence of any underground services is indicated, the underground services shall be exposed and exactly located by hand tool excavation only.

4.8.4 No mechanical excavation shall be made within 1 meter of any underground services and is only allowed to a depth where it is confirmed that no services are in place.

4.8.5 All activities involving excavations and/or ground disturbance shall follow the work permit process unless specifically exempted through an approved risk assessed process which documents the reasons why they were exempted.

4.8.6 The Excavation Work Permit is a basic Assessment for the excavation work to be conduct, which should be sufficient for most activities. If the hazard assessment and control form does not cover the total risk of the specified activities, a formal JSA as per YMS-SHEM-P-02.02 shall be completed. The decision on the requirement for formal JSA shall be the responsibility of the Permit issuer together with the permit receiver of the Excavation Work Permit Appendix (YMS-SHEM-08.10-F-06). This agreement is to be documented through signatures on the Excavation Work Permit.

4.8.7 Any precautions or checks required to verify the presence of buried pipelines, communications and electrical services.

4.8.8 The potential for an oxygen deficient or hazardous atmosphere to develop within the excavation.

4.8.9 The potential for collapse of the excavation and/or ingress of ground water. Included in this consideration shall be an assessment of the environmental conditions (weather) that may change during the period of the work permit.

4.8.10 The potential hazards to be considered shall include those additional ones from the work being performed in the work area.

4.8.11 The requirements for barriers and signage.

4.8.12 The requirements for shoring and/or additional supports.

4.8.13 Excavation more than 1.2 meters (4 feet) deep shall be treated as work requiring a Confined Space Entry Permit in addition to the Excavation Work permit.

4.8.14 The requirements for routine and emergency access/egress.

4.9 Radiation Work Permit

To minimize the exposure to any radiation amount and risk associated with it; also to define safety requirements for working with or near radioactive source equipment, for additional information refer to Ionizing Radiation procedure (YMS-SHEM-P-12.07). This permit applies to all employees and contractors who design, specify, order, purchase, receive, install, move, relocate, store, ship and work in the vicinity of any equipment containing radioactive materials of any amount using Radiation Work Permit (YMS-SHEM-08.10-F-07) Radiation safety officer (RSO) is responsible for the survey of radiation level around the sources and whenever it is required during NDT, to safeguard the safety

of the personnel, and is responsible for maintaining the monitoring equipment, distribution and collection of TLD badges and documentation of personal exposure recorded.

4.9.1 CONTROLLED AREA: shall be established in locations where worker may be exposed to dose limit greater than 3/10 of the occupational exposure limit (3μSv/h).

4.9.2 RADIATION SAFETY OFFICER (RSO): A person who has been selected to be responsible for overseeing radiation safety in organization.

4.9.3 RADIOACTIVE SOURCE: Any source of radiation where the radiation is produced by the decay of radioactive materials rather than electrically, as in an X-Ray machine.

4.9.4 RADIOACTIVE WASTE: The radioactive substances resulting from a source within a practice, which was retained in order to limit emission rates into the ambient environment regardless of the physical state of such substances.

4.9.5 RADIOGRAPHY: The examination of the materials by non-destructive methods utilizing radioactive isotopes or X-Ray generating equipment.

4.9.6 SEALED SOURCE: Sealed capsule containing radioactive material.

4.9.7 Before doing any job on nuclear instruments, the technician/Operator shall:

4.9.7.1 Get Radiation Work permit using Guidelines for Equipment preparation for Maintenance (Appendix YMS-SHEM-08.10-F-07).

4.9.7.2 Use his dosimeter - Barricade the work area and the stairs leading to it.

4.9.8 Radiation hazard due to the work shall be announced using Paging system before starting the work.

4.9.9 While working, the source shall be in “closed” or “off” position, (it is not allowed to work on powered "ON" sources). Technician shall lock the shield (use LOTO) in the closed position and stick on a “Do Not Operate” Tag.

4.9.10 It is not allowed to proceed with any practices involving exposure to ionizing radiation without notifying the RSO one week ahead.

4.9.11 Personal Exposure Monitoring equipment (Direct reading dosimeter or (TLD) Thermo-Luminescent Dosimeter shall be provided to all radiation classified workers.

4.9.12 Personal entering the radiation control area during installation, maintenance and removing of source.

4.9.13 All companies’ contractors shall be licensed by the regulatory authority to proceed with any practices involving the use of radioactive sources within Affiliate premises. RSO approval shall be taken in advance.

4.9.14 Concerned plant representative shall be notified in writing at least one week prior to the actual work to ensure that the contractor is qualified, authorized and follows proper procedures.

4.9.15 Radiation Permit shall be issued by Area Supervisor and Owner Department

Manager's shall be informed.

4.9.16 NDT (Non-distractive test) shall be done when a minimum number of employees are in the plant.

4.9.17 Safe distance shall be calculated according to NDT source strength and redistricted area shall be barricaded with suitable warning signs.

4.9.18 Provide their employees who work in radioactive classified areas with the required training.

4.9.19 Provide their employees with the necessary monitoring equipment.

4.9.20 No person may engage in any activities involving radiation exposure before receiving adequate training on such activity, gaining knowledge of the methods and criteria of protection from radiation and methods of safe work. Therefore, only the authorized worker can work in the same area. Only authorized workers can handle the radioactive sources.

4.9.21 Radiation work permit provides a tool to advice on radiation protection and safety. It contains information about radiation in the given job and means to enhance radiation protection and safety.

4.10 Lifting Permit

This section sets out the requirements for Work Permit controlled lifting operations in accordance with SABIC's Life Saving Rules and with the prime objective of protecting personnel from injury and property from damage using Lifting Work Permit (YMS-SHEM-08.10-F-05) in supporting with Lifting Plan (YMS-SHEM-08.10-F-10).

The organization including SABIC, contractors and subcontractor responsible for performing the lift shall keep auditable records of lifting equipment certification and competencies of those involved in the lift (including appropriate certification/licenses for the task as required by local regulations).

Note:

1. Lifting permit shall be issued before the entry of lifting equipment into the classified area to consider the potentiality of fire ignition hazard of lifting equipment.
2. Lifting activity through fixed crane (overhead crane) for operation and preventive maintenance jobs shall be executed under approved SOP\SMP. In case of lifting condition or scope changed, then hazard assessment & control form, lifting plan and lifting permit shall be obtained.
3. Lifting operations which are routinely carried out as part of normal operations or maintenance activities with already built in overhead crane shall be covered by a SOP or SMP with full compliance to Lifting Equipment procedure (YMS-SHEM-P-08.06) requirements. In the SOP/SMP, the lifting activities risk shall be assessed and the controls built into the specified work method.

4.10.1 Definitions:

4.10.1.1 Lifting Permit: Lifting Permit control any lifting operations which are essentially non-routine activities.

4.10.1.2 Lifting Operations: Lifting operations are the lifting of any load/object

using a Crane (Fixed/Mobile) and chain block.

4.10.2 Lifting operations shall be controlled through a Lifting Permit, which is required the Hazardous Assessment and Control Form in addition to Lift Plan and shall be aligned with Lifting Equipment procedure (YMS-SHEM-P-08.06) requirements on safe lifting.

4.10.3 The isolation of personnel from lifting operations (by barricading the affecting area using of physical barricades to create an exclusion zone) shall be considered in the Lifting Permit for the task.

4.10.4 Immediately prior to starting lifting operations or recommencing lifting operations following permit revalidation, the issuer shall:

4.10.4.1 Verify that the risks have been assessed, and the control and mitigation measures are in place.

4.10.4.2 Verify safe conditions through workplace inspection.

4.10.5 Lifting Permit Implementation

4.10.5.1 Lifting operations shall be conducted by Affiliate competent staff, accredited contractors or sub-contractors engaged through contractors Affiliate accredited to manage sub-contractors.

4.10.5.2 Workforce members who are not involved with the lift shall be restricted from the lift zone through effective barrier management and the placement of exclusion zones.

4.10.5.3 Personnel involved in lifting operations shall not walk under the load once the lift has commenced.

4.10.6 Lifting Permit shall include the following:

4.10.6.1 Number of personnel, roles and certification references.

4.10.6.2 References to associated documentation (Lifting Equipment inspection checklist, The Hazardous Assessment and Control Form, Formal JSA as per the YMS-SHEM-P-02.02 and Lifting Plan).

4.10.6.3 Other proximity hazards e.g. lifting over live plant, overhead power cables, public roads, etc.

4.10.6.4 Verification that specified lifting equipment has been visually inspected and certified accordance to Lifting Equipment Inspection Checklist in Lifting Equipment procedure (YMS-SHEM-P-08.06) prior to the lift commencing.

4.10.6.5 Consideration of the placement of lifting equipment, plus potential consequences of catastrophic failure or unintended motion of the load or equipment, with particular attention to other proximity hazards and areas where people congregate.

4.10.6.6 Load integrity and dropped object inspections.

4.10.6.7 Wind / weather (e.g. limitations of cranes, sail area of load).

Note: Issuer and Receiver shall confirm that each individual lifting task is correctly assessed and planned for the conditions it is to be

conducted in.

4.11 High Pressure Jetting Work Permit

This section provides requirements for HP water jetting & Sand Blasting Work Permit using High Pressure Jetting Work Permit (YMS-SHEM-08.10-F-08). Where possible and available hands-free High Pressure water Jetting & Sand Blasting utilizing machine shall be the preferred option to be followed. HPWJ shall only take place after the following steps have been completed.

Hazardous Assessment and Control Form shall be performed by the receiver and permit issuer to seek an alternative means of completing the required activity without the need for HPJ. That this assessment has taken place shall be documented on the HPJ permit following a conclusion having been reached that this activity is required.

4.11.1 Definitions.

4.11.1.1 Anti-Withdrawal Device (Back Out Preventer)

A device installed on the pipe entrance to prevent the nozzle on the end of the hose from being pulled out of the pipe under pressure.

4.11.1.2 Dry Shutoff Control Valve

A valve that is normally manually controlled by the Lance or Nozzle Operator to start and stop the flow of water to the nozzle. Although closing this valve stops the water flow to the nozzle, it keeps the pressure in the supply line at the system's working pressure. When this valve is used, the system must be fitted with an automatic pressure-regulating valve to ensure the system's working pressure is not exceeded.

4.11.1.3 Jetting Gun (Shotgun)

A hand-operated device that is used in manual water jetting. It is normally connected to the high-pressure system by a high-pressure hose assembly. The gun is made up of a control valve mounted within a guard, a lance section, and a nozzle assembly which may include one or more nozzles. The gun may also include a support bracket and shoulder pad and/or one or more support handles. The gun can be further defined by the type of control valve that is used to release the pressure. If the pressure is released to atmosphere it is a dump gun. If the pressure is retained in the system by using a Dry Shutoff Control Valve, then it is a dry shutoff gun.

4.11.1.4 Lancing

An application where a rigid or flexible lance and nozzle combination is inserted into and extracted from the interior of a pipe or tubular opening.

4.11.1.5 Moleing

A hose fitted with a nozzle is inserted into and retracted from the interior of a pipe. It is commonly used with a self-propelling nozzle for cleaning the internal surface of pipes and drains. Moles can be self-

propelled by their backward-directed jets or manufactured to be fitted with various shapes, sizes, and combinations of forward-directed and backward-directed jets. A mole should include a section of rigid pipe or tubing directly behind the nozzle assembly that is sufficiently long enough to prevent the mole from turning around within the pipe.

4.11.1.6 Nozzle Operator

The member of a HPWJ Team who holds a gun, lance, or delivery hose and controls the motion and direction of the jet(s).

4.11.1.7 Stinger

Rigid tubing or pipe mounted behind the nozzle assembly for use with a flexible lance or hose. Stingers are generally used on small-diameter piping and heat exchanger tubes.

4.11.1.8 Whip Check

A short length of wire or cable looped over each end of two hoses that are connected by a coupling. A whip check is designed to stop the ends of hoses from whipping around if the coupling breaks.

4.11.2 Planning and Preparing for Rescue

Emergency response arrangements shall include:

4.11.2.1 The arrangements for contacting emergency response resources.

4.11.2.2 The provision of a Fire watch who is dedicated to the specific work activity, is trained and has been verified as competent for this role.

a) Conducting and Monitoring HPJ.

b) The HPJ Permit shall be displayed at the worksite.

c) If a potentially hazardous condition is detected during the work:

1. The Permit shall be withdrawn.
2. All the members of the work party shall leave the area adjacent to the work immediately.
3. The receiver shall immediately notify the responsible issuer.
4. The cause of the changed conditions at the work site shall be evaluated to determine how the hazardous condition developed. Measures shall be implemented to eliminate the hazardous prior to any subsequent work.

Note: If an HPJ work activity is stopped due to the premature termination of the work, due to equipment failure, inadequate procedure, medical or other emergency that requires immediate departure from the work site, the permit receiver shall notify the responsible issuer as soon as possible.

4.11.3 Sandblasting Hazards

Abrasive blasting operations can create high levels of dust and noise. Abrasive material and the surface being blasted may contain toxic materials (e.g., lead

paint, silica) that are hazardous to workers.

4.11.4 Control Measures

4.11.4.1 Substitution

a) Use a less toxic abrasive blasting material.

b) Use abrasives that can be delivered with water (slurry) to reduce dust.

4.11.4.2 Isolation and Containment

a) Use barriers and curtain walls to isolate the blasting operation from other workers.

b) Use blast rooms or blast cabinets for smaller operations.

c) Use restricted areas for non-enclosed blasting operations.

d) Keep coworkers away from the blaster.

4.11.5 Ventilation

Use exhaust ventilation systems in containment structures to capture dust.

4.12 Authorization and Renewal

Each employee or contractor who is qualified under any of the sections of this procedure shall be issued a wallet size authorization card (see document: Work Permit Authorization Card- YMS-SHEM-08.10-F-19) approved by EHSS Senior Manager. This card shall be identified the employee or contractor employee's qualifications and shall be carried on by the person while at work.

4.12.1 Work Permit Authorization card has a Validity of three years for direct hire employees.

4.12.2 Contractor WP card authorization card has a Validity as per Affiliate Contractor ID card.

4.12.3 Affiliate Concerned department shall maintain list of authorized personnel

4.12.4 Refresher Training shall be provided to employees/contractors:

4.12.5 Every three years.

4.12.6 After major revision of this procedure.

4.12.7 Authorization card expired

4.12.8 The duration of this refresher is one-day classroom training. It consists of overview of updating permit procedure, explanation case study for all previous incidents or findings related to safe work practice.

4.12.9 Refresher Training shall include passing a test that ensures the employee understands the interpretation and intent of this procedure to acquire the knowledge and skills necessary for the safe performance of their assigned duties, if the employee fails then he shall apply for re-test and if failed again, he shall attend Three days new training program.

4.13 Training

4.13.1 This procedure covers the qualification of the following:

4.13.1.1 Permit Issuer

4.13.1.2 Permit Receiver

4.13.1.3 JSA training

4.13.1.4 Gas Tester

4.13.1.5 Fire watch/Standby Man

4.13.1.6 Plant manager (half day class training).

4.13.2 Work Permits procedure (YMS-SHEM-P-08.10) Sub-Element shall develop specific training and competence verification routes for each roles.

4.13.3 Refresher training programs is developed for each role listed above. This refresher training is conducted at a minimum frequency of every three years.

4.13.4 Work Permit Instructor Qualifications Eligibility:

4.13.4.1 Has total experience 10 years' in industrial plants.

4.13.4.2 Has completed minimum training skills (Train the Trainer).

4.13.4.3 Attend and pass Work Permit exam.

4.13.4.4 Approved as work permit instructor by Element Leader/Sub-Element Leader after deliver at least one success Work Permit session.

4.13.5 Permit Issuer and Receiver Qualifications Eligibility:

Criteria	Permit Issuer	Permit Receiver	
Employee Status	Direct Hire	Direct Hire	Contractor
English Level	3		
Years of Experience	Minimum 3 years' experience in Affiliate or overall 5 years' industrial experience.	Minimum 3 years' experience in Affiliate or overall 5 years industrial experience.	Minimum 3 years' experience in Affiliate or overall 5 years industrial experience.

Table #5: Permit Issuer and Receiver Qualifications Eligibility

4.13.6 The following criteria shall be met before & after attending the class:

4.13.6.1 Competency of employees & contractor nominated person has to be ensured by Dept. Sr. Manager.

4.13.6.2 Nominated by his management to attend the class.

4.13.6.3 Trainer has to submit the work permit training attendees & result to representative department.

4.13.7 The candidate shall meet the following requirements:

4.13.7.1 As a Pre-requisite employees /Contractor attending the work permit shall complete the following Safe Work Practices procedure (YMS-SHEM-08.00) Awareness session.

a) YMS-SHEM-P-08.01: General EHSS Rules

b) YMS-SHEM-P-08.03: Material Handling and Storage

c) YMS-SHEM-P-08.04: Prevention of Fires and Explosions from Combustible Dust

d) YMS-SHEM-P-08.05: Electrical Safety

e) YMS-SHEM-P-08.06: Lifting Equipment

f) YMS-SHEM-P-08.07: Tools Handling

g) YMS-SHEM-P-08.08: Personal Protective Equipment

h) YMS-SHEM-P-08.09: Working at Height

i) YMS-SHEM-P-08.11: Control Isolation of Hazardous Energy including LOTO

4.13.7.2 Successfully complete Work Permit Training class by achieving overall minimum score of 80% on the work permit test.

4.13.7.3 The candidate shall be able to exercise the work permit filling, if not able to do, he shall not be eligible for test.

4.13.7.4 If he failed in work permit test, the candidate maybe appear for the second test within two months'. If candidate fails for the second time, the candidate shall attend the class again and re-tested.

4.13.7.5 If he failed in third test, the candidate shall not be allowed to attend the class unless his management entitled him into OMS competency training program as per Training & Competencies procedure (YMS-OMS-P-131) & Third Party EHSS Management procedure (YMS-SHEM-P-05).

4.13.8 Work Permit Training

A comprehensive training program followed by tests shall be conducted for required employees covering as minimum required of the following course content:

Days	Items
Day 1	Introduction
	Hazard Assessment & Control Form as well as JSA workshop
	Work Permit Process Overview
	Preparing & Planning
Day 2	Monitoring and Control of Permitted Work Activity
	Certificates
	General Work Permit
	Hot Work
Day 3	Confined Space Entry Permit Hazards
	Excavation Permit
	Electrical Permit
	Lifting Permit
	High Pressure Jetting Permit

Days	Items
	Radiation Permit
	Exam

Table #6: Work Permit Training Matrix

Work Permit Training For Line Management	
Days	Items
Day 1	Introduction
	Hazard Assessment & Control and JSA
	Work Permit Process Overview
	Monitoring and Control of Permitted Work Activity
	Preparing & Planning

Table #7: Work Permit Training for Line Management

4.13.9 Gas Testing Training

4.13.9.1 Department Senior Manager shall nominate the gas tester. EHSS department shall issue the authorization of gas tester.

4.13.9.2 Training and qualification program includes classroom and field instruction. Such training will be completed prior to the employee using the equipment without supervision.

4.13.9.3 Training program includes instruction course on types of gas meters used in Plant, their proper use, care, user inspection / calibration, routine replacement of consumable parts (batteries, filters, bulbs, hoses, and carrying straps) and limitations.

4.13.9.4 Gas testers' shall pass a written test with a minimum 80% score. In addition to passing the written qualification test, trainees shall demonstrate, to the satisfaction of the instructor, their ability to perform pre-operation checks, demonstrate proper use, care, user inspection / auto calibration, routine replacement of consumable parts (batteries, filters, bulbs, hoses and carrying straps) and give its limitations.

4.13.10 Fire Watch/Standby Man Qualifications

4.13.10.1 Fire watch shall attend training and pass the Fire watch/Standby Man test with minimum core of 80%.

4.13.10.2 Training shall include basic use of Fire extinguisher.

4.13.10.3 English level shall be minimum Level 2.

4.13.11 Yearly 4th quarter WFD training coordinator shall communicate to all plant manager identifying year plan activities such as TAM, planned & unplanned shutdown, number of expired authorization card required for open classroom.

4.13.12 Periodic Compliance Audit

Conduct periodic inspections to verify that all work permit requirements are being met using Work Permit Compliance Checklist (YMS-SHEM-08.10-F-15) as per below table.

Auditor	Frequency
Element/ Sub-Element Leader	Quarterly
EHS representative/ SHEM Administrator	Monthly

Table #8: Periodic Compliance Audit

5 COMPETENCY

The following competency matrix is developed based on Affiliate Organization Structure as per the requirements of Training & Competence Procedure (YMS-OMS-P-131). The matrix identifies the key skills and knowledge required to successfully implement this procedure. These competencies are mapped to critical functional roles within the organization structure.

Competency (Skill / Qualification)	Type	(Plant) Line Managemen	EHSS Sr. Mgr.	Area Mgr.	SHEM Specialist	Elect/ Civil/ Mech Engr.	Issuers	Receivers	Standby/Fire Watch	Gas Tester
Knowledge of this procedure requirements		D	D	P	P	P	A	A	P	P
Demonstrated competence on the effective implementation of this procedure		D	D	P	P	P	A	A	P	P
Remain up-to-date on relevant knowledge through periodic refresher training		D	D	P	P	P	A	A	P	P

Table #9: Competency Matrix for Critical Functions

Competency Types: Core, Leadership, Functional
Proficiency Levels: D Developing, P Proficient, A Advanced

6 CONTINUAL IMPROVEMENT

6.1 Measures Indicators (MI), Performance Indicators (PI) and Key Performance Indicator (KPI) are defined below.

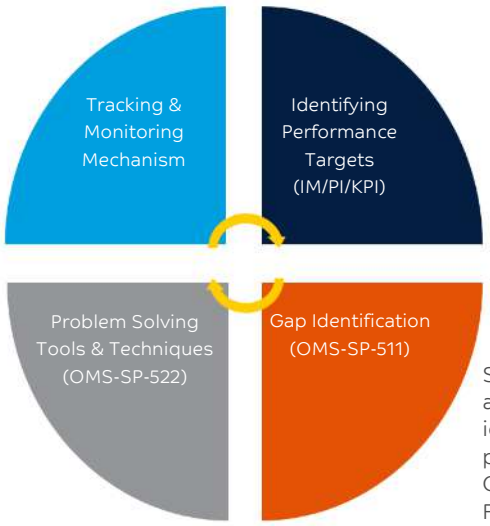
Reference # Performance Management (YMS-OMS-P-211)	Title	Frequency	Rhythm
01	# Overdue Action Plans	Monthly	Sub-Element Committee Meeting
02	Reduction Class A,B,C & HiPo incident	Annually	
03	100% completed number of Periodic Inspections	Monthly	

Table #10: KPI

6.2 Continual Improvement Process

Recommendations shall be included in OMS objectives in accordance to OMS-122 using Appendix OMS-122 H. Required corrective and preventive actions shall be generated and tracked appropriately to organization personnel and stakeholders on a regular basis using Q-Pulse or other tracking system.

Measures Indicators (MI), Performance Indicators (PI) and Key Performance Indicator (KPI) are defined in Table 6.1: KPI.



Effective problem solving methods and tools shall be identified and utilized to close the gaps in accordance with Process Improvement Methodologies & Problem Solving Tools & Techniques Procedure (OMS-521) and generate recommendations.

Statistical tools shall be used to analyze the performance and identify the gaps of this procedure in accordance with Continual Improvement Framework Procedure (OMS-511).

7 REFERENCES

7.1 Links with Other SHEM/OMS procedures

Input	Interface / link	Output
Leadership Commitment and Culture (YMS-OMS-P-111)	Leadership, Commitment & Culture	

Input	Interface / link	Output
Site Organization Design (YMS-OMS-P-121)	Site Organization Design	Work Permits (YMS-SHEM-P-08.10)
Management of Personnel & Organizational Change (YMS-OMS-P-123)	Management of personal & organizational change	
Training & Competencies (YMS-OMS-P-131)	Training & Competency	
Performance Management (YMS-OMS-P-211)	Performance Management	
Policy & Management System Development (YMS-OMS-P-231)	Policy & Management System Development	
Compliance, Assessments and Evaluation (YMS-OMS-P-232)	Compliance Assessments & Evaluation	Work Permits (YMS-SHEM-P-08.10)
Stakeholder Communication and Engagement (YMS-OMS-P-233)	Stakeholder Communication & Engagement	
Documentation and Control of Records (YMS-OMS-P-234)	Documentation & Control of Records	
Continual Improvement Framework & Continual Improvement Qualification & Certification (YMS-OMS-P-511)	Continual Improvement Framework	
Process Improvement Methodologies & Problem Solving Tools & Techniques (YMS-OMS-P-522)	Problem Solving Tools & Techniques	
Health and Safety Risk Assessment (YMS-SHEM-P-02.02)	Risk assessment requirements for JSA and explanation about the JSA process.	
Third Party EHSS Management (YMS-SHEM-P-05)	Use of approved contractors.	
Pre-startup SHE Reviews (YMS-SHEM-P-06)	Pre-startup SHE Review	
General EHSS Rules (YMS-SHEM-P-08.01)	Requirements for use of tags.	
Material Handling and Storage ((YMS-SHEM-P-08.03)	Cylinders, hoses and accessories specifications and handling and storage requirements.	
Electrical Safety ((YMS-SHEM-P-08.05)	Requirements on electrical aspects and classification.	
Lifting Equipment ((YMS-SHEM-P-08.06)	Requirements on safe lifting.	Work Permits (YMS-SHEM-P-08.10)
Tools Handling (OMS-316.07)	Correct use of tools considerations.	
Personal Protective Equipment (YMS-SHEM-P-08.08)	Identification of PPE and clothing requirements.	
Working at Height (YMS-SHEM-P-08.09)	Working at Height	
Control Isolation of Hazardous Energy including LOTO (YMS-SHEM-P-08.11)	Requirements on lock out, tag out, isolation and line break in connection with work permits.	
Management of Change (OMS-317)	MOC process to be followed in case of changes.	
EHSS Incident Reporting, Classification, Investigation & Analysis ((YMS-SHEM-P-10)	EHSS Incident Reporting, Classification, Investigation & Analysis	
Emergency Planning and Response ((YMS-SHEM-P-11.00)	Identification of rescue plans and availability of the emergency response equipment and crew during emergencies.	
Heat and Cold Stress (YMS-SHEM-P-12.06)	Heat and General Stress	

Input	Interface / link	Output
Ionizing Radiation (YMS-SHEM-P-12..7)	Ionizing Radiation	
Transportation Safety (Road Transportation of Materials) (YMS-SHEM-P-15)	Road Transportation of Materials	
Material Handling and Storage (YMS-SHEM-P-08.03)	Material Handling & Storage related Product SDS/Label Preparation & Communication	
HCIS-SAF	SAF-13 related Work Permit	
Third Party EHSS Management (YMS-SHEM-P-05)	3rd Party EHSS Management	

Table #11: Interfaces and Linkages

7.2 Control of Records

The following records are identified and described in the record control requirements pertaining to this procedure in accordance with Documentation & Control of Records procedure (YMS-OMS-P--234):

Sr. No.	Record Description	Type	Location	Responsibility	Retention Period
1	Approved procedure (YMS-SHEM-P-08.10)	Hard	OMS Administrator's office	OMS Administrator	Current
2	Approved procedure (YMS-SHEM-P-08.10)	Soft	Yansab Portal / Approved digital storage	TQM Specialist	Current & Previous Revision
3	Active Approved Procedure Word / excel file (YMS-SHEM-P-08.10)	Soft	OMS Administrator's Office	OMS Administrator	Current

Table 12a: Documentation (Procedure)

No.	Document	Record Owner	Location	Retention Time	Retention Purpose
7.2.1	All type of Work Permit	Permit Issuer	Supervisor Office	3 month	Auditing & Investigation
7.2.2	Hazard assessment & control form	Permit Issuer	Supervisor Office	3 month	Auditing & Investigation
7.2.3	Daily / Weekly Checklist for Gas Detectors	Permit Issuer	Supervisor Office	1 Year	Track History Of Gas Detectors care

No.	Document	Record Owner	Location	Retention Time	Retention Purpose
7.2.4	welding checklist	Permit Issuer	Supervisor Office	3 month	Auditing & Investigation
7.2.5	Hot Tapping Data Sheet	Permit Receiver	Manager Office	1 Year	Analysis & Investigation
7.2.6	Tracking of KPIs	OMS-316 EL	OMS-316 EL	3 Year	Knowledge

Table #12b: Control of Records

7.3 Glossary, Formulae & Definitions

This section shall list all the Glossary, Formulae and Definitions relevant to this procedure.

Glossary	Definition
ACGIH	American Conference of Governmental Industrial Hygienists
AIR	Accident Incident Recommendations
EL	Element Leader
EHS	Environment, Health & Safety
EHSS	Environment Health Safety Security
EMS	Environmental Management System
ERP	Emergency Response Preparedness
HCP	Hearing Conservation Program
HLVI	High Learning Value Incident
KPI	Key Performance Indicator
LMS	Learning Management System
MOC	Management of Change
NIHL	Noise Induced Hearing Loss
NIOSH	National Institute for Occupational Safety & Health
OSHA	Occupational Safety & Health Administration
OMS	Operations Management System
PHA	Process Hazard Analysis
PI	Performance Indicators
PPE	Personal Protective Equipment
Q-Pulse	Quality Pulse (OMS Data Base)
RACI	Responsibility, Accountability, Consulted, Informed
SEL	Sub-Element Leader
SHE	Safety, Health & Environment
SHEM	Safety, Health & Environment Management
SHEMS	Safety, Health & Environment Management System
SM	Supplementary Manpower
STS	Standard threshold shift
W&CI	Work Force Development & Continual Improvement
TWA	Time Weighted Average
UOM	Unit of measurement

Table #13: Glossary, Formulae & Definitions

8 APPENDIX

No.	Appendix No.	Appendix Title
8.1	YMS-SHEM-08.10-F-01	General Work Permit
8.2	YMS-SHEM-08.10-F-02	Hot Work Permit
8.3	YMS-SHEM-08.10-F-03	Electrical Work Permit
8.4	YMS-SHEM-08.10-F-04	Confined Space Entry Work Permit
8.5	YMS-SHEM-08.10-F-05	Lifting Work Permit
8.6	YMS-SHEM-08.10-F-06	Excavation Work Permit
8.7	YMS-SHEM-08.10-F-07	Radiation Work Permit
8.8	YMS-SHEM-08.10-F-08	High Pressure Jetting Work Permit
8.9	YMS-SHEM-08.10-F-09	Hazard assessment and control form
8.10	YMS-SHEM-08.10-F-10	LIFTING PLAN
8.11	YMS-SHEM-08.10-F-11	Excavation Clearance
8.12	YMS-SHEM-08.10-F-12	Rescue Plan
8.13	YMS-SHEM-08.10-F-13	Welding Job Checklist
8.14	YMS-SHEM-08.10-L-01	List of Confined Space
8.15	YMS-SHEM-08.10-F-15	Compliance Checklist
8.16	YMS-SHEM-08.10-F-16	Work Permit Control Sheet
8.17	YMS-SHEM-08.10-F-17	Weekly Check List for Gas Detectors
8.18	YMS-SHEM-08.10-F-18	Hot tapping data sheet
8.19	YMS-SHEM-08.10-F-19	Work permit Authorization card form
8.20	YMS-SHEM-08.10-F-20	Ventilation Plan
8.21	YMS-SHEM-08.10-GL-01	Lifting Plan General Guidelines
8.22	YMS-SHEM-08.10-GL-02	Lifting Classification Matrix
8.23	YMS-SHEM-08.10-GL-03	Guidelines for Preparation Work on Tanks -Vessels -Pipe lines
8.24	YMS-SHEM-08.10-L-02	Areas Exempted from Work Permits

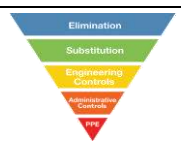
Table #14: Appendix

Job Safety Analysis (JSA) Form

Area (Zor	Job Title:	JSA ID: Plant/Unit:
Job Description:		Mention Applicable Procedures:
	Dept.: Date:	Use additional sheets if necessary. Attachments: YES / NO if YES, state number of pages:

No.	Job Steps	Potential Impact Due to Exposure	C	L	Risk Level	Steps to reduce Risk (Control Measures)	C	L	Remaining Risk Level (value)	Responsible	Implemented
					0				0		
					0				0		
					0				0		
					0				0		
					0				0		
					0				0		
					0				0		
					0				0		

Hazard Control Methodlogy ☐



PPE Details if necessary:

JSA Team Leader: Name & ID: Position: Sign: Date:	**JSA team members:** Name & ID: Position: Sign: Date: Name & ID: Position: Sign: Date: Name & ID: Position: Sign: Date: Name & ID: Position: Sign: Date:
Contractor Safet leader Name & ID: Sign: Date:	
EHSS Leader Representative Name & ID: Sign: Date:	
Contractor/Sub-contractor: I have reviewed and agreed with all steps of this JSA Name & ID: Sign: Date: Name & ID: Sign: Date: Name & ID: Sign: Date:	**Zone site Manager**: I have reviewed and agreed with all steps of this JSA Name & ID: Sign: Date: Approval Demolition Project leader (YANSAB/principle contractor): Name & ID: Sign: Date:

YANBU NATIONAL PETROCHEMICAL COMPANY

(YANSAB)

Document No.: YMS-SHEM-P-08.06 (YMS-OMS-P-316.06)

Document Name: Lifting Equipment

Rev. No.: 07

	Position	Name	Signature	Date
Originator	Element/(Sub) Leader	Saleh Al-Amoudi		25/07/2022
Reviewed by	Element Leader	Bandar Al-Nomani		27/07/2022
	Quality Assurance Team Member	Mohammed Badri		28-Jul-2022
		Muhammed Al-Husain		28.07.2022
	OMS Administrator	Abdurrahman Ogues		28.07.2022
	Dimension Chairman	Habeeb Al-Subhi		28.07.2022
Approved by	OMS Leader	Majed Al-Ahmadi		28.07.2022

REVISION HISTORY

Revision No.	Date	Revision Description
00	Sep- 2011	Original issue
01	Apr-2012	Update to close audit Findings & Observations
02	Mar-2013	Update to close audit Findings & Observations
03	Nov-2015	1. Modified Procedure as per latest Template structure & requirements of YMS-SHEM-P-00.03. 2. Close the gap generated from SHEM Internal audit 2014. 3. More clarification introduced for expected results, definitions, procedure define step by step for some of the requirements. Roles and responsibility defined as per RACI. Verification process modified, feedback mechanism flow chart introduced. Link reference clause number introduced, Attachment defined and introduced in tabular format.
04	Jun-2016	1. Updated Procedure as per revised YMS-SHEM-P-00.03 requirements 2. Updated as per latest SHEM Audit findings / observations 3. Updated as per latest SHEM clarifications
05	Dec-2017	1. Close the gap generated from SHEM SABIC Audit 2016. 2. More Clarification on heavy equipment movement inside plant. Section 5.6.9. 3. Detail criteria for hiring Auto Mechanic section 5.7.31 4. General lighting of Heavy equipment to be inspected and recorded annually, section 5.8.5 5. Concentration level of CO2 to be monitor and recorded Section 5.8.6
06	Oct-2019	Updated as per revised SABIC SHEM 08.06 and OMS Requirement / format.
07	Jul-2022	1. Included Pallet Jacks / Trolleys – Section 4.4 2. Included top loader equipment as per RCA recommendation – Section 4.3 3. YANSAB 2021 iMEA Assessment Findings

CONTENTS

1 PURPOSE

The purpose of this OMS Sub-element Procedure is to define minimum requirements for operation and prevention of hazards associated with cranes, forklifts and motorized equipment (used for lifting and carrying loads and aerial lifts for working at height) operations.

2 SCOPE

This OMS sub-element procedure applies to crane, forklift and motorized equipment operations within the YANSAB facility. Also applicable to all personnel within YANSAB facility who operate and use lifting equipment.

3 ROLES AND RESPONSIBILITIES

3.1 Communicate the system requirements and responsibilities to ensure all involved understand the objectives of the system and their specific responsibilities/ accountabilities to the system.

3.2 Responsibility Assignment Matrix, indicating the Responsible, Accountable, Consulted and Informed (RACI) roles for high-level activity as below.

3.3 Positions shall be defined as per below RACI Matrix format.

Activity Description	Sponsor	OMS Leader	Dimension Chairman	OMS -3110 Element Owner	OMS 3110.06 Sub-element owner	Sr. Managers/ Managers	EHSS Sr. Manager / Manager	Operation Engr. / Analyst	Maintenance Engineer / Analyst / Supervisor	Operators / Riggers / Technician/ All Employees
Evaluate applicability of this element	I	A	R	R	R	I	I	I	I	I
Develop and implement Level 3 documents	A	R	R	R	R	I	C/I	I	I	I
Identify training requirements	I	I	C	A	R	C	C	I	I	I
Develop and track performance indicators	C	C	A	R	R	I	I	I	I	I
Periodic safety compliance assessments		I	I	R	A	I	I	I	I	I
Ensure management of Sub Element Leaders Assignment				A	R					

Table 3.1 - High Level RACI Matrix

Activity Description	Sr. Manager Manit/Oper/Project	Manager Manit/Oper/Project	Sr. Manager Maint. Services	OMS -3110 Element Owner	OMS 3110.06 Sub-element	Manager , Garage	Heavy Equipment Supervisor	Lifting Equipment Operator	Rigger	Work Permit Issuer	Work Permit Receiver
Qualified crane operators shall only be permitted to operate the cranes			A			R	I	R			
Ensure all cranes shall be fitted with a load/radius indicator chart. Ensure Chain blocks, pulley wheels, and similar devices shall have the maximum safe working load clearly marked upon them			C I			AR	R				
Ensure when crane is in the stationary lifting mode, truck mounted cranes shall always have their outriggers fully extended							AR	R	R	R	R
Ensure if mobile cranes are traveling with a suspended load, the load shall be as near to the ground as possible and secured to prevent swinging. In any case, traveling with a suspended load shall be kept to a minimum							AR	R	R	R	R
Ensure Loads lifted by crane shall always be under the direction and signals from a properly trained banks man/flagman or rigger.							AR	R	R	R	R
Ensure Personnel shall not be permitted to stand or walk under suspended loads						I	AR	R	R	R	R
Ensure Cranes should have give a distinctive sound/alert while moving			I			AR	RR	R	R	R	R
Ensure the movement of cranes inside the premises shall be restricted and permitted on approved routes. Approved routes shall be provided in the Lifting plan.							R	R	R	A	R
Ensure Tagline shall be used to control long or unwieldy loads							AR	R	R		R
Lifting Plan & Lifting certificate Preparation and approval for normal Lifting activities		R					R	R	R	A	R
Lifting Plan & Lifting certificate Preparation and approval for critical Lifting activities						R	R	R	R	A	R

Activity Description	Sr. Manager Manit/Oper/Project	Manager Manit/Oper/Project	Sr. Manager Maint. Services	OMS -3110 Element Owner	OMS 3110.06 Sub-element	Manager , Garage	Heavy Equipment Supervisor	Lifting Equipment Operator	Rigger	Work Permit Issuer	Work Permit Receiver
Slings and other lifting gear shall be properly stored away from sources of corrosion or damage							AR	R	R		
Ensure manufacturer's specifications and limitations applicable to the operation of the cranes and derricks shall be followed. Where manufacturer's specifications are not available, the limitations shall be based on the determinations of YANSAB Rigging Supervisor in consultation with Garage Manager, such determinations will be appropriately documented and recorded. Ensure Attachments used with cranes shall not exceed the capacity, rating, or scope recommended by the manufacturer.						AR	R	R			
Ensure Rated load capacities, a load-rating chart, recommended operating speeds, special hazard warnings, or instruction, shall be posted at a visible location on all cranes. Instructions or warnings shall be visible to the operator while he is at his control station						A	R	R	R		
Barricading of crane operating area							A	R	R	C	R
Ensure exhaust pipes of the cranes shall be guarded or insulated in areas where contact by personnel is possible in the performance of normal duties. Ensure Platforms and walkways shall have anti-skid surfaces.						C	AR	R	R		
Ensure Minimum clearance between the crane and electrical distribution and transmission lines shall be maintained.						C	AR	R	R	R	R
Ensure Cranes capacities shall not be modified without the written approval of the manufacturers						A	R	R	R		
Cranes mounted on rail tracks shall be equipped with limit switches limiting the travel of the crane.		R	A			R					

Activity Description	Sr. Manager Manit/Oper/Project	Manager Manit/Oper/Project	Sr. Manager Maint. Services	OMS -3110 Element Owner	OMS 3110.06 Sub-element	Manager , Garage	Heavy Equipment Supervisor	Lifting Equipment Operator	Rigger	Work Permit Issuer	Work Permit Receiver
Initial and periodic Inspection of Gantry & overhead cranes			CI			A	R	R			
Ensure Training & Certification of crane operator			CI			AR	R				
Annual inspection and certification of cranes by certified third party			CI			A	R	R			
A crane which has been idle for a period of one month or more, but less than 6 months, shall undergo an inspection before placing in service.						A	R	R			
Initial and periodic Inspection of cranes			CI			A	R	R			
Ensure All overhead and gantry cranes shall meet the design specifications of the applicable local standards / regulations requirements, if available. If not, they shall be in accordance with the American National Standard Safety Code for Overhead and Gantry Cranes, ANSI B30.2-2005. Ensure compliance with crane stops, Bumpers, Rail Sweeps, foot walk, Brakes, electrical equipment, Guards, Resistors, switches, Controllers, Hoisting equipment, warning devices requirements.		R	A			R					
A gantry / overhead crane which has been idle for a period of one month or more, but less than 6 months, shall undergo an inspection before placing in service.		R	A			R	R				
A crane which has been idle for a period of over 6 months shall be given a complete inspection in accordance with before placing in service.						A	R	R			
A gantry / overhead crane which has been idle for a period of over 6 months shall be given a complete inspection before placing in service			A			R	R	R			
Standby mobile cranes shall be inspected at least semi-annually. Standby cranes exposed						A	R	R			

Activity Description	Sr. Manager Manit/Oper/Project	Manager Manit/Oper/Project	Sr. Manager Maint. Services	OMS -3110 Element Owner	OMS 3110.06 Sub-element	Manager , Garage	Heavy Equipment Supervisor	Lifting Equipment Operator	Rigger	Work Permit Issuer	Work Permit Receiver
to adverse environments should be inspected more frequently by Crane Operator											
Standby gantry / overhead cranes shall be inspected at least semi-annually. Standby cranes exposed to adverse environments should be inspected more frequently by Crane Operator		R	A				R	R			
Ensure compliance with cranes Testing requirements for mobile cranes. Ensure testing is conducted annually, prior initial use, after overhauling and after any alteration by certified third party			CI			A	R	R			
Ensure compliance with cranes Testing requirements for Gantry & overhead cranes. Ensure testing is conducted annually, prior initial use, after overhauling and after any alteration by certified third party.			A			R	R	R			
Ensure compliance with mobile cranes maintenance requirements including preventive maintenance & corrective maintenance.			CI			R	R	R			
Ensure compliance with gantry / overhead cranes maintenance requirements including preventive maintenance & corrective maintenance.		R	A			R	R				
Compliance with precautions before adjustments and repairs of mobile cranes			CI			A	R	R			
Ensure the inspections requirements shall be corrected before operation of the mobile crane is resumed if any unsafe condition disclosed by crane operator			CI			A	R	R			
Ensure the inspections requirements of this procedure shall be corrected before operation of the gantry / overhead crane is resumed if any unsafe condition disclosed by crane operator			A			R	R	R			

Activity Description	Sr. Manager Manit/Oper/Project	Manager Manit/Oper/Project	Sr. Manager Maint. Services	OMS -3110 Element Owner	OMS 3110.06 Sub-element	Manager , Garage	Heavy Equipment Supervisor	Lifting Equipment Operator	Rigger	Work Permit Issuer	Work Permit Receiver
Compliance with Mobile crane rope inspection			CI			A	R	R			
Compliance with gantry / overhead crane rope inspection			A			R	R	R			
Compliance load handling requirements by mobile crane						CI	AR	R	R		
Compliance with load handling requirements by gantry / overhead crane						CI	AR	R	R		
Movement of mobile cranes inside the plant area is not allowed without guiding by a flag-man							AR	R	R		
Ensure compliance of all new forklifts with requirements			CI			A	R	R	R		
Initial inspection of newly acquired or rented forklift prior to initial use						AR	R	R			
Ensure Forklift trucks shall have a functional horn and back-up alarm with a distinctive sound, loud enough to be heard clearly above other local noises		R	A			R	R	R			
Conduct Training and qualification/certification program shall be in place for forklift operators by certified third party		R	A			R	R	R			
Ensure each Forklift Operator shall be re-trained and re-qualified every three years. Ensure requirements shall be met to become "Qualified Forklift Operator". Ensure certification card is issued to the certified forklift operator. Ensure only qualified operators, who have been issued certification card, shall be permitted to operate a forklift truck		R	A			R	R	R			
Ensure Forklift operators shall observe traffic regulations, including authorized plant speed limits. Ensure Stunt driving and horseplay shall not be permitted							A	R			

Activity Description	Sr. Manager Manit/Oper/Project	Manager Manit/Oper/Project	Sr. Manager Maint. Services	OMS -3110 Element Owner	OMS 3110.06 Sub-element	Manager , Garage	Heavy Equipment Supervisor	Lifting Equipment Operator	Rigger	Work Permit Issuer	Work Permit Receiver
Ensure Duckboard or bridge plates shall be properly secured before they are driven over. Duckboard or bridge plates shall be driven over carefully and slowly and their rated capacity never exceeded							A	R			
No person shall be allowed to stand or pass under the elevated portion of any forklift truck.							A	R	R		
Ensure unauthorized passengers shall not be permitted to ride on powered industrial trucks. Ensure Arms or legs are prohibited from being placed between the uprights of the mast or outside the running lines of the truck						A	R	R	R		
Ensure following the precautions whenever a truck is equipped with vertical only, or vertical and horizontal controls fitted to the lifting carriage or forks for lifting personnel			CI			A	R	R	R		
Ensure the forklift operator not leaving the forklift unattended. Ensure load engaging means should be fully lowered, controls should be neutralized, power should be shut off, and brakes set to prevent movement. Wheels shall be blocked if the truck is parked on an incline						A	R	R	R		
Ensure sufficient headroom shall be maintained (Minimum Six Feet) under overhead installations, lights, pipes, sprinkler system, etc. Ensure overhead guard shall be used as protection against falling objects						A	R	R			
Ensure each forklift truck operator shall inspect his vehicle at the start of each shift and document this inspection on a Forklift Daily Inspection checklist (YMS- MSE-F-011) and report any noted condition that affects the safety of the Forklift truck to his supervisor for corrective action						CI	A	A			

Activity Description	Sr. Manager Manit/Oper/Project	Manager Manit/Oper/Project	Sr. Manager Maint. Services	OMS -3110 Element Owner	OMS 3110.06 Sub-element	Manager , Garage	Heavy Equipment Supervisor	Lifting Equipment Operator	Rigger	Work Permit Issuer	Work Permit Receiver
Ensue conducting periodic inspection – 1 to 12 month intervals. Periodic inspections shall be performed by third party certified inspector						A	R	R			
Ensure Forklift trucks that are defective, in need of repair or are unsafe, shall be tagged "Danger – Do Not Operate," and taken out of service until restored to safe operating condition						A	R	R			
A maintenance log shall be kept for each forklift truck with Garage supervisor to determine when required maintenance is due.											
Ensure maintenance and repair shall be performed only by a qualified Auto Mechanic				C I		A	R	R			
Ensure refueling and battery changing operations shall be performed only in designated areas of the plant. Open flames, smoking, sparks or electric arcs shall be eliminated from refueling and battery charging areas						A	R	R			
Ensure copies of the manufacturer's operating instructions for each type of forklift truck shall be readily available for review by operators and concerned supervisors						A	R	R			
Movement of loaded forklift in the workshop or inside the plant area is not allowed without guiding by a flag-man						A	R	R	R		
Ensure only authorized personnel shall operate motorized vehicles						A	R	R			
Ensure Vehicle accidents or near-misses shall be reported as per YMS-OMS-P-318						A	R	R			
The storage and handling of liquid fuels such as gasoline and diesel fuel shall meet Saudi Arabian Standards Organization (SASO) No. 317/1987, No. 347, No. 348/1987, and No. 349/1987. In addition the National Fire						A	R	R			

Activity Description	Sr. Manager Manit/Oper/Project	Manager Manit/Oper/Project	Sr. Manager Maint. Services	OMS -3110 Element Owner	OMS 3110.06 Sub-element	Manager , Garage	Heavy Equipment Supervisor	Lifting Equipment Operator	Rigger	Work Permit Issuer	Work Permit Receiver
Protection Association (NFPA) No. 30-1969 code should be referenced											
The storage and handling of liquefied petroleum gas fuel shall be in accordance with SASO No. 346/1987 and/or NFPA No. 58-1969						A	R	R			
Ensure General lighting shall meet the requirements						A	R	R			
Concentration levels of carbon monoxide gas created by powered industrial truck operations shall meet the requirements						A	R	R			
Ensure All traffic regulations and Safe practices shall be observed, including the plant speed limits		R	A			R	R	R	R		R
Ensure only stable or safely arranged loads shall be handled. Ensure Caution shall be exercised when handling off-center loads that cannot be centered. Ensure Only loads within the rated capacity of the truck shall be handled. Ensure the long or high loads that may affect capacity shall be adjusted						A	R	R	R		
Ensure All motorized vehicles shall be in safe condition, periodically (daily, monthly & annually) inspected, and taken out of service if in an unsafe or suspect condition. Ensure Defective or unsafe vehicle truck shall be taken out of service until it has been restored to safe operating condition. Ensure Repairs shall be carried out in a safe location, by a qualified Auto-mechanic						A	R	R	R		
Ensure Fuel tanks shall not be filled while the engine is running and Spillage shall be avoided						A	R	R			
Ensure Spillage of oil or fuel shall be carefully washed away or allowed to						A	R	R			

Activity Description	Sr. Manager Manit/Oper/Project	Manager Manit/Oper/Project	Sr. Manager Maint. Services	OMS -3110 Element Owner	OMS 3110.06 Sub-element	Manager , Garage	Heavy Equipment Supervisor	Lifting Equipment Operator	Rigger	Work Permit Issuer	Work Permit Receiver
evaporate completely and the fuel tank cap replaced before restarting the engine											
No vehicles shall be operated with a leak in the fuel system until the leak has been corrected			CI			A	R	R			
Ensure Appropriate precautions against fire hazards shall be taken for checking electrolyte level in storage batteries or gasoline levels in fuel tanks						A	R	R			
Ensure Explosion safe vehicle shall be used to monitor the air based on hazardous area classification. if water mufflers are used, it shall be filled, by the operator, daily or as frequently as is necessary to prevent depletion of the supply of water below 75% of the filled capacity. Vehicles with mufflers having screens or other parts that may become clogged shall not be operated while such screens or parts are clogged.		A				R	R	R			
Ensure Vehicles shall be kept free of excess oil, and grease. Noncombustible agents should be used for cleaning trucks		A				R	R	R			
Ensure Aerial devices are designed and constructed as per the requirements.			CI			AR	R				
Ensure any modification for uses of Aerial lifts other than identified by the manufacturer is approved in writing by manufacturer or by a other nationally recognized agency and in accordance with Management of Change Procedure			CI			AR	R				
Ensure if work is to be performed near overhead energized lines, the lines shall be de-energized and grounded before work started and precautions followed to prevent personnel from contacting such lines		R				R	R	R	R	A	R
Ensure before the Ladder trucks and tower trucks are moved for highway travel, aerial						A	R	R	R		

Activity Description	Sr. Manager Manit/Oper/Project	Manager Manit/Oper/Project	Sr. Manager Maint. Services	OMS -3110 Element Owner	OMS 3110.06 Sub-element	Manager , Garage	Heavy Equipment Supervisor	Lifting Equipment Operator	Rigger	Work Permit Issuer	Work Permit Receiver
ladders shall be secured in the lower traveling position											
Lift controls shall be tested each day by the certified operator prior to use to determine that such controls are in safe working condition and reporting any deficiencies immediately to Garage Supervisor.						CI	A	R		R	R
Ensure Only trained and authorized /certified personnel by certified third party shall operate an aerial lift						A	R	R	R		R
Ensure Belting off to an adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted						A	R	R	R		R
Ensure personnel shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position						A	R	R	R		R
Ensure body harness shall be worn and a lanyard attached to the boom or basket when working from the aerial lift		CI				A	R	R	R	R	R
Ensure Boom and basket load limits specified by the manufacturer shall not be exceeded						A	R	R	R	R	R
Ensure the brakes shall be set and outriggers, when used, shall be positioned on pads or a solid surface. Ensure wheel chocks shall be installed before using an aerial lift on an incline						CI	AR	R	R	R	R
Ensure an aerial lift truck shall not be moved when the boom is elevated in a working position with men in the basket, except for equipment that is specifically designed for this type of operation						CI	AR	R	R	R	R
Ensure Articulating boom and extendable boom platforms, primarily designed as personnel carriers, shall meet the requirements			CI			A	R				

Activity Description	Sr. Manager Manit/Oper/Project	Manager Manit/Oper/Project	Sr. Manager Maint. Services	OMS -3110 Element Owner	OMS 3110.06 Sub-element	Manager , Garage	Heavy Equipment Supervisor	Lifting Equipment Operator	Rigger	Work Permit Issuer	Work Permit Receiver
Ensure the insulated portion of an aerial lift shall not be altered in any manner that might reduce its insulating value			CI			A	R	R			
Ensure before moving an aerial lift for travel, the boom(s) shall be inspected to see that it is properly cradled and outriggers are in stowed position						A	R	R	R		
Ensure before moving an aerial lift for travel, the boom(s) shall be inspected to see that it is properly cradled and outriggers are in stowed position			CI			AR	R	R	R		
Refueling and battery changing operations shall be performed only in designated areas of the plant. Open flames, smoking, sparks or electric arcs shall be eliminated from refueling and battery charging areas						A	R	R	R		
All vehicles movement shall follow the Road Transportation Procedure		R	CI			R	R	R	R	R	R

Table 3.2 - Detailed RACI Matrix

4 REQUIREMENTS

4.1 General Requirement

4.1.1 This OMS procedure is developed and implemented as management system that accomplishes the requirements of this sub-element in accordance with Policy and Management System Development Procedure YMS-OMS-P- 231.00.

4.1.2 Any change to this OMS shall follow YANSAB Document Change requirements in accordance with Documentation & Control of Records Procedure YMS-OMS-P-234.00.

4.1.3 For any clarification to this OMS, it must be in accordance with Policy and Management System Development Procedure YMS-OMS-P-231.00.

4.1.4 Designated personnel with responsibility for developing written operating procedures, or developing or conducting training associated with this procedure, shall be adequately trained to fulfill those responsibilities.

4.2 Cranes

4.2.1 Any crane operation shall required work permit as per YMS-OMS-316.10 and all requirement shall be followed for all work involving:

4.2.1.1 YANSAB owned or managed cranes

4.2.1.2 Contractor owned or managed cranes

4.2.2 Only qualified, certified and competent crane operators authorized by YANSAB shall be permitted to operate the cranes. The following requirements shall be met to become a 'Qualified Crane Operator'.

4.2.2.1 Medical fitness.

4.2.2.2 Possession of a valid driver's license as per local rules and regulations.

4.2.2.3 Passing of a written test.

4.2.2.4 Satisfactory performance of the demonstrated capability requirements. This includes knowledge of crane operations, load charts, rigging and hand signals, crane matting, proximity to power lines, inspection of crane including safety devices, procedures related to hazard recognition and controls, working at height, movement of cranes etc. related to cranes.

4.2.3 All cranes shall be fitted with a load/radius indicator chart.

4.2.4 Chain blocks, pulley wheels, and similar devices shall have the maximum safe working load clearly marked upon them.

4.2.5 When in the stationary lifting mode, truck mounted cranes shall always have their outriggers fully extended.

4.2.6 If mobile cranes are traveling with a suspended load, the load shall be as near to the ground as possible and secured to prevent swinging. Traveling with a suspended load shall be kept to a minimum.

4.2.7 Loads lifted by crane shall always be under the direction and signals of a trained banksman or rigger.

4.2.8 Personnel shall not be permitted to stand or walk under suspended loads. Lifting areas and load travel routes should be barrier off to prevent access wherever possible.

4.2.9 Cranes should give a distinctive sound/alert while moving.

4.2.10 The movement of cranes inside the Affiliates premises shall be restricted and permitted only on approved routes. Approved routes shall be provided in the rigging plan.

4.2.11 Taglines shall be used to control long or unwieldy loads.

4.2.12 Prior to conducting any lifting activities, a lifting plan shall be prepared by a qualified member of personnel. Such a plan shall take into account the types of cranes, hazards, load capacities and restricted areas of operation and shall meet local standards/regulations requirements.

4.2.13 All lifting accessories shall be subject to periodic inspection. Such accessories include lifting slings (natural and man-made fiber ropes, steel wire rope slings, etc.) and their components.

4.2.14 Periodic inspections of lifting accessories shall be performed by appointed personnel who have been trained in the task, following lifting sling manufacturer guidelines and/or as per local rules and regulations.

4.2.15 Such periodic inspections shall be conducted at 1 to 12 month intervals, based on manufacturer guidelines and local standards/regulations. The review shall include examination and maintenance procedure.

4.2.16 Slings and other lifting gear shall be properly stored away from sources of corrosion or damage.

4.2.17 The manufacturer's specifications and limitations applicable to the operation of cranes and derricks shall be followed. Where manufacturer's specifications are not available, the limitations assigned to the equipment shall be based on the determinations of a qualified YANSAB Rigging supervisor / engineer competent in this field. Such determinations will be appropriately documented and recorded. Attachments used with cranes shall not exceed the capacity, rating, or scope recommended by the manufacturer.

4.2.18 Rated load capacities, a load-rating chart, recommended operating speeds, special hazard warnings or instructions shall be posted at a visible location on all cranes. Instructions or warnings shall be visible to the operator while he is at his control station.

4.2.19 Accessible areas within the swing radius of the rear of the rotating superstructure of the crane, either permanently or temporarily mounted, shall be barricaded in such a manner as to prevent personnel from being struck or crushed.

4.2.20 Exhaust pipes of cranes shall be guarded or insulated in areas where contact by personnel is possible in the performance of normal duties.

4.2.21 Platforms and walkways shall have anti-skid surfaces.

4.2.22 Minimum clearance between the crane and electrical distribution and transmission lines shall be maintained in accordance with Electrical Safety YMS-OMS-P-316.05.

4.2.23 Crane capacities shall not be modified without the written approval of the manufacturers.

4.2.24 Cranes mounted on rail tracks shall be equipped with limit switches limiting the travel of the crane.

4.2.25 Cranes and derricks with variable angle booms shall be equipped with a boom angle indicator that is readily visible to the operator.

4.2.26 Cranes with telescopic booms shall be equipped with a device to indicate clearly to the operator, at all times, the boom's extended length or an accurate determination of the load radius to be used during the lift.

4.2.27 A positive acting device shall be used which prevents contact between the load block and the boom tip (anti-two-blocking device), or a system shall be used which deactivates the hoisting action before damage occurs in the event of a two-blocking situation (two-block damage prevention feature).

4.2.28 If hoisting ropes run near to other parts making fouling or chafing possible, guards shall be installed to prevent this condition.

4.2.29 A guard shall be provided to prevent contact between bridge conductors and hoisting ropes if it is possible they could come into contact.

4.2.30 Exposed moving parts such as gears, set screws, projecting keys, chains, chain sprockets, and reciprocating components which might constitute a hazard under normal operating conditions shall be guarded.

4.2.31 All overhead and gantry cranes shall meet the design specifications of applicable local standards/regulations requirements, if available. If not, they shall be in accordance with the American National Standard Safety Code for Overhead and Gantry Cranes, ANSI B30.2.2.

4.2.32 For crane cabs, the applicable local standards/regulations requirements shall be followed:

4.2.32.1 The general arrangement of the cab and the location of controls and protective equipment shall be such that all operating handles are within convenient reach of the operator when facing the area to be served by the load hook, or while facing the direction of travel of the cab. The arrangement shall allow the operator a full view of the load hook in all positions.

4.2.32.2 The cab shall be located to afford a minimum of 7.5 cm clearance from all fixed structures within its area of possible movement.

4.2.32.3 Access to the cab and/or bridge walkway shall be by a conveniently placed fixed ladder, stairs, or platform requiring no step over any gap exceeding 30 cm.

4.2.32.4 All windows in cabs shall be of safety glass, or equivalent, that introduces no visible distortion to interfere with safe operation of the machine.

4.2.32.5 Guardrails, handholds, and steps shall be provided on cranes for easy access to the cab.

4.2.32.6 The clearance of the cab above the working floor or passageway should be not less than 2 meters.

4.2.32.7 Tools, equipment, and other articles shall be stored in a toolbox, and shall not be permitted to lie loose in or about the cab.

4.2.32.8 A carbon dioxide or dry chemical hand fire extinguisher shall be kept in the cab. Carbon tetrachloride extinguishers shall not be used. In addition, operators shall be trained in correct operation and procedures for the use of portable fire extinguishers.

4.2.32.9 Illumination in the cab shall be sufficient to enable the operator to see clearly enough to perform his work.

4.2.32.10 Crane operations shall take into account wind and weather conditions when determining whether, and how, to perform the lifting operations. For work using the crane, wind direction and wind speed are important factors to be considered and observed before and during the job to optimize stability and load handling with the crane.

4.2.32.11 It is expected that a qualified member of personnel shall evaluate the wind speed based on the equipment, height of operations, load and crane manufacturer guidelines.

4.2.32.12 In absence of manufacturer's guidelines or evaluation by qualified personnel, the following limits shall be applied to determine whether to conduct lifting operations.

Task	Wind Speed Limit
Normal lifting operation with crane	25 mph (40.2 km/hour)
Critical lifting operation with crane	20 mph (32 km/hour)
Man basket crane lifts	15 mph (25 km/hour)

4.2.32.13 Other weather condition such as rain, heat and Humidity shall also be consider.

4.2.33 For crane foot walks and ladders, the applicable local standards/ regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.33.1 If sufficient headroom is available on cab-operated cranes, a foot walk shall be provided on the drive side along the entire length of the bridge of all cranes having the trolley running on the top of the girders. To give sufficient access to the opposite side of the trolley, there shall be provided either a foot walk mounted on the trolley, a suitable foot walk or platform in the building, or a foot walk on the opposite side of the crane at least twice the length of the trolley.

4.2.33.2 Foot walks should be located to give headroom not less than 2 meters. In no case shall headroom of less than 1.2 meters be provided. If 1.2 meters of headroom cannot be provided, foot walks shall be omitted from the crane and a stationary platform or landing stage built to provide access for repairs.

4.2.33.3 Foot walks shall be of rigid construction and designed to sustain a distributed load of at least 50 pounds per square foot (250 kg/m2).

4.2.33.4 Foot walk shall have a walking surface of the anti-slip type.

4.2.33.5 Foot walks shall be continuous and permanently secured.

4.2.33.6 Foot walks should have a clear passageway at least 56 cm wide except opposite the bridge motor, where they should not be less than 38 cm. The inner edge shall extend at least to the line of the outside edge of the lower cover plat or flange of the girder.

4.2.34 Toe boards shall be 10 cm in height from their top edge to the level of the floor, platform or ramp. They shall be securely fastened in place and with not more than ¼-inch (6 mm) clearance above floor level. Handrails shall have a vertical height of 105 cm from upper surface of the top rail to the floor, platform or ramp. A standard railing shall consist of top rail, intermediate rail, and posts. The top rail shall have a smooth surface throughout the length of the railing. The intermediate rail shall be approximately half way between the top rail and the floor (refer SASO Section 2.5 for additional requirements).

4.2.34.1 Gantry cranes shall be provided with ladders or stairways extending from the ground to the foot walk or cab platform.

4.2.34.2 Stairways shall be equipped with rigid metal handrails. Walking surfaces shall be of an anti-slip platform.

4.2.34.3 Ladders shall be permanently and securely fastened in place and shall be constructed in compliance with OSHA standard 29 CFR 1910.27 and/or SASO Section 2.4.

4.2.34.4 Hands shall be free from encumbrances while personnel are using ladders. Articles too large to be carried in pockets or belts shall be lifted and lowered by a hand line.

4.2.35 For crane stops, bumpers, rail sweeps, and guards, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.35.1 Stops shall be provided at the limits of travel of the trolley.

4.2.35.2 Stops shall be capable of resisting all forces applied when contacted.

4.2.35.3 A stop engaging the tread of a wheel shall be of a height at least equal to the radius of the wheel.

4.2.35.4 Bridge bumpers. All cranes shall be provided with bumpers or other automatic stopping methods unless one of the following conditions (or similar) is met:

a. The crane travels at a slow rate of speed and has a fast deceleration rate due to the use of sleeve bearings
b. The crane is not operated near the ends of bridge and trolley travel
c. Travel is restricted to a limited distance by the nature of the crane operation and there is no hazard of striking any object in this limited distance

The bumpers shall be capable of stopping the crane (not including the lifted load) at an average rate of deceleration not to exceed 0.9m/sec² (3ft/sec²), when traveling in either direction at 20 percent of rated load speed.

4.2.35.5 The bumpers shall have sufficient energy absorbing capacity to stop the crane when traveling at a speed of at least 40 percent of rated load capacity.

4.2.35.6 The bumpers shall be mounted such that there is no shear on bolts.

4.2.35.7 Bumpers shall be designed and installed to minimize parts falling from the crane in case of breakage.

4.2.35.8 A trolley shall be provided with bumpers or other equivalent automatic means unless one of the following, or similar, conditions is met:

a. The trolley travels at a slow rate of speed

b. The trolley is not operated near the ends of the bridge and trolley travel

c. Operation is restricted to a limited distance on the runway and there is no hazard of striking any object in this limited distance

The bumpers shall be capable of stopping the trolley (not including the lifted load) at an average rate of deceleration not to exceed 1.5 m/sec2 (4.7 ft./sec2), when traveling in either direction at one third of the rated load speed. When more than one trolley is operated on the same bridge, each shall be equipped with bumpers or equivalent on their adjacent ends.

4.2.35.9 Bumpers or equivalent means shall be designed and installed to minimize parts falling from the trolley in case of breakage.

4.2.35.10 Bridge trucks shall be equipped with sweeps which extend below the top of the rail and project in front of the truck wheels.

4.2.35.11 If fouling or chafing of hoisting ropes is possible, guards shall be installed to prevent this condition. In addition, a guard shall be provided to prevent contact between bridge conductors and hoisting ropes.

4.2.35.12 Exposed moving parts such as gears, set screws, projecting keys, chains, chain sprockets, and reciprocating components shall be guarded. Guards shall be fastened in place.

4.2.35.13 Each guard shall be capable of supporting without permanent distortion the weight of a 90 kg (200 lb.) person unless the guard is located where it is impossible for a person to step on it.

4.2.36 For crane brakes, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.36.1 Each independent hoisting unit of a crane shall be equipped with at least one self-setting brake, hereafter referred to as a holding brake, applied directly to the motor shaft or an appropriate part of the gear train.

4.2.36.2 Each independent hoisting unit of a crane, except worm-geared hoists whose worm angle is such as to prevent the load from accelerating in the lowering direction shall, in addition to a holding brake, be equipped with a means of control braking to prevent over speed.

4.2.36.3 Holding brakes for hoist motors shall have no less than the following percentage of the full hoisting torque at the point where the brake is applied:

a. 125 percent when used with control braking means other than mechanical

b. 100 percent when used in conjunction with a mechanical control braking means

c. 100 percent each if two holding brakes are provided

4.2.36.4 Holding brakes on hoists shall have ample thermal capacity for the frequency of operation required by the service.

4.2.36.5 Holding brakes on hoists shall be applied automatically when power is removed.

4.2.36.6 Where necessary, holding brakes shall be provided with a means of adjustment to compensate for wear.

4.2.36.7 The wearing surface of all holding brakes drums or discs shall be smooth. Each independent hoisting unit of a crane handling hot metal and equipped with power control braking shall be equipped with at least two holding brakes.

4.2.36.8 A means of power control braking such as regenerative, dynamic or counter torque braking, or a mechanically controlled means of braking shall be capable of maintaining safe lowering speeds of rated loads. The control braking equipment shall have ample thermal capacity for the frequency of operation required by service.

4.2.36.9 Foot operated brakes shall not require an applied force of more than 30 kg (70 pounds) to develop the manufacturer's rated brake torque.

4.2.36.10 Brakes may be applied by mechanical, electrical, pneumatic, hydraulic, or gravity means.

4.2.36.11 All foot brake pedals shall be constructed so that the operator's foot will not easily slip off the pedal.

4.2.36.12 Brakes for stopping the motion of the trolley or bridge shall be of sufficient size to stop the trolley or bridge within a distance in meters equal to 10 percent of full load speed in ft/min or m/min when traveling at full speed with full load.

4.2.36.13 If holding brakes are provided on the bridge or trolleys, they shall not prohibit the use of a drift point in the control circuit.

4.2.36.14 Brakes on trolleys and bridges shall have ample thermal capacity for the frequency of operation required by the service to prevent impairment of functions from overheating.

4.2.36.15 On cab-operated cranes with the cab on a trolley, a trolley brake shall be required. A drag brake may be applied to hold the trolley in a desired position on the bridge and to eliminate creep with the power off.

4.2.36.16 On cab-operated cranes with cab on bridge, a bridge brake is required.

4.2.36.17 On cab-operated cranes with the cab on a trolley, a bridge brake of the holding type shall be required.

4.2.36.18 On all floor, remote and pulpit-operated crane bridge drives, a brake or non-coasting mechanical drive shall be provided.

4.2.37 For crane electrical equipment, the applicable local standards/ regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.37.1 Wiring and equipment shall comply with standards/regulations (including Saudi Arabian Standard Organization (SASO) Section 7.0 for KSA sites).

4.2.37.2 The control circuit voltage shall not exceed 600 volts for AC or DC current.

4.2.37.3 The voltage at pendant pushbuttons shall not exceed 150 volts for AC and 300 volts for DC.

4.2.37.4 Where multiple conductor cables are used with a suspended pushbutton station, the station must be supported in some satisfactory manner that will protect the electrical conductors against strain.

4.2.37.5 Pendant control boxes shall be constructed to prevent electrical shock and shall be clearly marked for identification of functions.

4.2.38 For crane guarding, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.38.1 Electrical equipment shall be located or enclosed so that live parts will not be exposed to accidental contact under normal operating conditions.

4.2.38.2 Electric equipment shall be protected from heat, dirt, grease, oil and moisture.

4.2.38.3 Guards for live parts shall be substantial and so located that they cannot be accidentally deformed to contact live parts.

4.2.39 For crane controllers, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.39.1 Cranes not equipped with spring-return controllers or momentary contact push buttons shall be provided with a device which will disconnect all motors from the line on failure of power and will not permit any motor to be restarted until the controller handle is brought to the 'OFF' position, or a reset switch or button is operated.

4.2.39.2 Lever operated controllers shall be provided with a notch or latch which in the 'OFF' position prevents the handle from being inadvertently moved to the 'ON' position. An 'OFF' detent or spring return arrangement is acceptable.

4.2.39.3 The controller-operating handle shall be located within convenient reach of the operator.

4.2.39.4 As far as practical, the movement of each controller handle shall be in the same general direction as the resultant movements of the load.

4.2.39.5 The control for the bridge and trolley travel shall be so located that the operator can readily face the direction of travel.

4.2.39.6 For floor-operated cranes, the controller or controllers, if rope operated, shall automatically return to the 'OFF' position when released by the operator.

4.2.39.7 Pushbuttons in pendant stations shall return to the 'OFF' position when pressure is released by the crane operator.

4.2.39.8 Automatic cranes shall be so designed that all motors shall fail-safe if any malfunction of operation occurs.

4.2.39.9 Remotely-operated cranes shall function so that if the control signal for any crane motion becomes ineffective the crane motion shall stop.

4.2.40 For crane resistors, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.40.1 Enclosures for resistors shall have openings to provide ventilation, and shall be installed to prevent accumulation of combustible matter near hot parts.

4.2.40.2 Resistor units shall be supported to be as free from vibration as possible.

4.2.40.3 Provisions shall be made to prevent broken parts of molten metal falling upon the operator or from the crane.

4.2.41 For crane switches, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.41.1 The power supply to the runway conductors shall be controlled by a switch or circuit breaker located on a fixed structure, accessible from the floor, and arranged to be locked in the open position.

4.2.41.2 On cab-operated cranes, switches or circuit breakers of the enclosed type, with provision for locking in the open position, shall be provided in the leads from the runway conductors. A means of opening these switches or circuit breakers shall be located within easy reach of the operator. The disconnect shall be mounted on the bridge or foot walk near the runway collectors. One of the following types of floor-operated disconnects shall be provided.

a. Non-conductive type attached to the main disconnect switch

b. An under-voltage trip for the main circuit breaker operated by an emergency stop button in the pendant pushbutton station

4.2.41.3 The hoisting motion of all electric traveling cranes shall be provided with an over-travel limit switch in the hoisting direction.

4.2.41.4 All cranes using a lifting magnet shall have a magnetic circuit switch of the enclosed type with provision for locking in the open position and a battery back-up system. A means of discharging the inductive load of the magnet shall be provided.

4.2.41.5 Conductors of the open type mounted on the crane runway beams or overhead shall be so located or so guarded that persons entering or leaving the cab or crane foot walk normally cannot come into contact with them.

4.2.41.6 If a service receptacle is provided in the cab or on the bridge of cab-operated cranes, it shall be a grounded three-prong type permanent receptacle, not exceeding 300 volts.

4.2.42 For crane hoisting equipment, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.42.1 Sheave grooves shall be smooth and free from surface defects that could cause rope damage.

4.2.42.2 Sheaves carrying ropes which can be momentarily unloaded shall be provided with close-fitting guards or other suitable devices to guide the rope back into the groove when the load is applied again.

4.2.42.3 The sheaves in the bottom block shall be equipped with close-fitting guards that will prevent ropes from becoming fouled when the block is lying on the ground with ropes loose.

4.2.42.4 Pockets and flanges of sheaves used with hoist chains shall be of such dimensions that the chain does not catch or bind during operation.

4.2.42.5 All running sheaves shall be equipped with a means of lubrication. Permanently lubricated, sealed and/or shielded bearings meet this requirement.

4.2.42.6 The rated load divided by the number of sections of rope shall not exceed 20 percent of the normal breaking strength of the rope.

4.2.42.7 The rope shall be secured to the drum as follows:

a. No less than two wraps of rope shall remain on the drum when the hook is in its extreme low position.

b. Rope end shall be anchored by a clamp securely attached to the drum, or by a socket arrangement approved by the crane or rope manufacturer.

c. Rope clips attached with U-bolts shall have the U-bolts on the dead or short end of the rope. Clips shall be dropforged steel in appropriate commercially manufactured sizes. When a newly installed rope has been in operation for an hour, all nuts on the clip bolts shall be re-tightened.

d. Wherever ropes may be exposed to temperatures at which fiber cores would be damaged, rope with an independent wire-rope or wire-strand core, or other temperature-damage resistant core shall be used.

e. If a load is supported by more than one section of rope, tension in the sections shall be equalized.

4.2.43 For crane warning devices, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/regulations, a gong or other effective warning signal shall be provided for each crane equipped with a power traveling mechanism, except floor operated cranes.

4.2.44 For crane inspection, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.44.1 Prior to initial use, all new and modified cranes shall be inspected to insure compliance with the provisions of this subparagraph. Inspection procedure for cranes in regular service is to be divided into two general classifications based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the nature of the critical components of the crane and the degree of their exposure to wear, deterioration, or malfunction. The two general classifications are herein designated as 'Frequent' and 'Periodic' with respective intervals between inspections as defined below:

a. Frequent inspection – Daily to monthly intervals. Frequent inspections will be performed by crane operators who have been trained certified by third party with regard to operation and inspection techniques for cranes as defined in this section. It is the responsibility Garage Manager / Contractor Company of crane operator to provide adequate training weather by the manufacturer or Third party. Noted deficiencies identified during frequent inspections shall be immediately reported to the Garage supervisor or to Owner Department site supervisor if the crane is not under YANSAB (Under contractor) to take immediate action for required repaired / rectification.

b. Periodic inspection – 1 to 12 month intervals. Periodic inspections shall be performed by appointed personnel who have been trained in operation and correct inspection techniques for overhead and gantry cranes as defined in this section

c. Refer following forms shall be used for crane inspection and PM.

   - YMS-MSE-F-001: Crane Daily Inspection Checklist
   - YMS-MSE-F-006: Crane Monthly Maint. & Inspection Checklist
   - YMS-MSE-F-007: Crane Quarterly Maint. & Inspection Checklist
   - YMS-MSE-F-009: Crane Annual Maint. & Inspection Checklist

4.2.44.2 The following items shall be inspected for defects at intervals in accordance with Section 4.2.45 of this sub-element or as specifically indicated, including observation during operation for any defects that might appear between regular inspections. All deficiencies listed shall be carefully examined and a determination made as to whether they constitute a safety hazard:

a. All functional operating mechanisms for maladjustment interfering with proper operation (daily)

b. Deterioration or leakage in lines, tanks, valves, drain pumps, and other parts of air or hydraulic systems

c. Hooks for deformation or cracks

d. All functional operating mechanisms for excessive wear of components

4.2.44.3 Complete inspections of the crane shall be performed at intervals in accordance with Section 4.2.45.2. Any deficiencies as listed below (and any others not listed) shall be carefully examined and corrected if faulty:

a. Deformed, cracked, or corroded members

b. Loose bolts or rivets

c. Cracked or worn out sheaves and drums are prohibited and shall be replaced

d. Worn out, cracked or distorted parts such as pins, bearings, shafts, gears, rollers, locking and clamping devices shall be removed or replaced

e. Excessive wear on brake system parts, linings, pawls, and ratchets

f. Load, wind, and other indicators tested over their full range for any significant inaccuracies

g. Gasoline, diesel, electric, or other power plants for improper performance or noncompliance with applicable safety requirement

h. Excessive wear of chain drive sprockets and excessive chain stretch

i. For crane hooks, magnetic particle or other suitable crack detecting inspections should be performed at least once each year

j. Electrical apparatus, for signs of pitting or any deterioration of controller contactors, limit switches and push button stations

4.2.44.4 A crane which has been idle for a period of 1 month or more, but less than 6 months, shall undergo an inspection in accordance with Section 4.2.45.2 and 4.2.48.2 before placing in service.

4.2.44.5 A crane which has been idle for a period of over 6 months shall be given a complete inspection in accordance with Sections 4.2.45.2, 4.2.45.3 and 4.2.48.2 before placing in service.

4.2.44.6 Standby cranes shall be inspected at least semi-annually in accordance with Sections 4.2.45.2 and 4.2.48.2. Standby cranes exposed to adverse environments should be inspected more frequently

4.2.45 For crane testing, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/ regulations, the requirements shall be in accordance with the following:

4.2.45.1 All testing will be performed by an appointed individual(s) who is trained and knowledgeable in the testing procedures and operation of various cranes within the facility

4.2.45.2 Prior to initial use all new and modified cranes shall be tested to ensure compliance with this paragraph including the following functions:

a. Hoisting and lowering

b. Trolley travel

c. Bridge travel

d. Limit switches, locks and safety devices

4.2.45.3 The trip setting of hoist limit switches shall be determined by tests with an empty hood traveling in increasing speeds up to the maximum speed. The actuating mechanism of the limit switch shall be located so that it will trip the switch, under all conditions, in sufficient time to prevent contact of the hook or hook block with any part of the trolley.

4.2.45.4 Prior to initial use all new, extensively repaired, and altered cranes should be tested by certified third party Inspector authorized person who is to confirm the load rating of the crane. The load rating should not be more than 80 percent of the maximum load sustained during the test. Test loads shall not be more than 125 percent of the rated load unless otherwise recommended by the manufacturer. The test reports shall be placed or filed to be available with YANSAB Garage Section Supervisor.

4.2.46 For crane maintenance, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.46.1 A preventive maintenance program based on the crane manufacturer's recommendations shall be established.

4.2.46.2 Before adjustments and repairs are started on a crane the following precautions shall be taken:

a. The crane to be repaired shall be run to a location where it will cause the least interference with other cranes and operations in the area

b. All controllers shall be at the 'OFF' position

c. The main or emergency switch shall be open and locked in the open position

d. Warning or 'Out of Order' signs shall be placed on the crane, also on the floor beneath or on the hood where visible from the floor

e. Where other cranes are in operation on the same runway, rail stops or other suitable means shall be provided to prevent interference with the idle crane

f. Where temporary protective rail stops are not available, or practical, a signalman should be placed at a visual vantage point for observing the approach of an active crane and warning its operator when reaching the limit of safe distance from the idle crane

g. After adjustment and repairs have been made the crane shall not be operated until all guards have been reinstalled, safety devices reactivated, and maintenance equipment removed

4.2.46.3 Any unsafe condition disclosed by the inspection requirements of Section 4.2.45 of this sub-element shall be corrected before operation of the crane is resumed. Adjustments and repairs shall be performed only by Auto-mechanic / Millwright authorized by garage manager. The authorized Auto-mechanic / Millwright shall possess the knowledge required to perform necessary repairs on overhead and gantry cranes as specified in this sub-element procedure.

4.2.46.4 Adjustments shall be maintained to assure correct functioning of components. The following are examples:

a. All functional operating mechanisms

b. Limit switches

c. Control systems

d. Brakes

e. Power plants

f. Repairs or replacements shall be provided promptly as needed for safe operation

4.2.47 For crane rope inspection, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.47.1 A thorough inspection of all ropes shall be made by a qualified Auto Mechanic / maintenance technician jointly with the certified crane operator at least once a month and a full written, dated and signed report of rope condition shall issue utilizing the Rope Inspection Checklist Refer attachment 8.3: YMS-OMS-316.06-F-01 and kept on file for available to Garage Section supervisor. Any deterioration or damage as described below shall prohibit further use of the rope:

a. Reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wire

b. A number of broken outside wires and the degree of distribution or concentration of such broken wires

c. Worn outside wires

d. Corroded or broken wires at end connections

e. Severe kinking, crushing, cutting, or un-stranding

f. Corroded, cracked, bent, worn out or improperly applied end connections

4.2.47.2 Any rope which has been idle for a period of a month or more due to shutdown or storage of a crane on which it is installed shall be given a thorough inspection before it is placed back into service. This inspection shall be for all types of deterioration and shall be performed by a qualified Auto Mechanic / Maintenance Technician whose approval shall be required for further use of the rope. A written and dated report of the rope condition shall be made and kept available for inspection utilizing Rope Inspection Checklist as per attachment 8.3 : YMS-OMS-316.06-F-01.

4.2.48 For crane load handling, the applicable local standards/regulations requirements shall be followed. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.2.48.1 The crane shall not be loaded beyond its rated load except for test purposes as provided in Section 4.2.46.4 of this sub-element.

4.2.48.2 The hoist chain or hoist rope shall be free from kinks or twists and shall not be wrapped around the load. The load shall be attached to the load block hook by means of slings. Care shall be taken to make certain that the sling clears all obstacles.

4.2.48.3 The load shall be secured and properly balanced in the sling or lifting device before it is lifted more than approximately 5 cm.

4.2.48.4 Before starting to hoist, the following conditions shall be noted:

a. Hoist rope shall not be kinked

b. Multiple section lines shall not be twisted around each other

c. The hook shall be brought over the load in such a manner as to prevent swinging

d. During hoisting, care shall be taken that:

- There is not sudden acceleration or deceleration of the moving load
- The load does not contact any obstruction

4.2.48.5 Cranes shall not be used for side pulls except when specifically authorized by a responsible person who has determined that the stability of the crane is not endangered and that any parts of the crane will not be over-stressed.

4.2.48.6 While any personnel are on the load or hook, there shall be no hoisting, lowering, or traveling.

4.2.48.7 Carrying loads over people shall be prohibited.

4.2.48.8 The operator shall test the brakes each time a load approaching the rated load is handled. The brakes shall be tested by raising the load a few cm and applying the brakes.

4.2.48.9 The load shall not be lowered below the point where less than two full wraps of rope remain on the hoisting drum.

4.2.48.10 When two or more cranes are used to lift a load, one qualified responsible person shall be in charge of the operation. He shall analyze the operation and instruct all personnel involved in correct positioning, rigging of the load, and the movements to be made.

4.2.48.11 The operator shall not leave his position at the controls while the load is suspended.

4.2.48.12 The warning signal shall be sounded when starting the bridge or when the load or hook approaches personnel.

4.2.48.13 Standard hand signals for communication between crane operator and hook handler shall be utilized. Refer Standard hand signals guidelines Refer attachment 8.2: YMS-OMS-316.06-GL-02.

4.2.48.14 At the beginning of each operator's shift, the upper limit switch of each hoist shall be tested under no load. Extreme care shall be exercised; the block shall be moved at intermittent motion into the limit or run in at slow speed. If the switch does not operate properly, the appointed person in the Owner department shall be immediately notified.

4.2.48.15 The hoist limit switch which controls the upper limit of travel of the load block shall never be used as an operating control.

4.2.49 Refer Inspection Checklist for Overhead / Gantry Cranes & monorails as attachment 8.4: YMS-OMS-316.06-F 02.

4.2.50 Movement of mobile cranes inside the plant area is not allowed without guiding by a flagman

4.3 Forklift Trucks

4.3.1 All new forklift trucks shall meet the applicable local standards/regulations requirements. In the absence of any local standards/regulations, the requirements shall be in accordance with the following:

4.3.1.1 Design and construction requirements of Part II, ANSI B56.1. Approved trucks.

4.3.1.2 All forklift trucks shall bear a label or identification indicating approval with ANSI B56.1.

4.3.1.3 High lift trucks shall be equipped with an overhead guard constructed in accordance with ANSI B56.1.

4.3.1.4 Forklift trucks shall have the manufacturer's nameplate showing truck's weight with attachments, lifting capacity, maximum lift height and other pertinent data as required by ANSI B-56.1. Nameplates or markings shall be maintained in a legible condition and remain in place at all times.

4.3.2 Prior to initial use of a newly-acquired or rented forklift, an initial inspection shall be performed by third party (Ex. TUV) certified inspector.

Following form shall be used for the periodic inspection and PM of the Forklift.

a) YMS-MSE-F-011: - Forklift Daily Inspection Checklist

b) YMS-MSE-F-013:- Forklift Quarterly PM Checklist

c) YMS-MSE-F-014:- Forklift Biannually PM Checklist

d) YMS-MSE-F-015:- Forklift Annually PM Checklist

4.3.3 No alternations or modifications that may affect the capacity or safe operation of a forklift truck shall be made without prior written approval of the manufacturer. Any approved changes shall be shown on the nameplate. If a modification is performed, the forklift shall be inspected by a certified inspector prior to usage.

4.3.4 Selection of forklifts shall be based on the hazards and requirements of the area where they will be operated. Refer attachment 8.1: YMS-OMS-316.06-GL-01 for types of industrial Trucks.

4.3.5 All forklift trucks shall be equipped with a dry chemical fire extinguisher fixed in an accessible area.

4.3.6 Spinner knobs on steering wheels are prohibited.

4.3.7 Forklift trucks shall have a functional horn and back-up alarm with a distinctive sound, loud enough to be heard clearly above other local noises.

4.3.8 A training and qualification program shall be in place for forklift operators by certified third party. The program shall include classroom and field instruction with testing on the operators' comprehension of the material presented.

4.3.9 Training shall include a programmed instruction course of forklift truck operation and a written test with a numerical grade 80% or better required to pass the test.

4.3.10 In addition to passing the written qualification test, trainees will demonstrate, to the satisfaction of the instructor, their ability to:

4.3.10.1 Perform a pre-operation check of their equipment, such as inspecting oil level in the crankcase, fuel level and coolant level.

4.3.10.2 Starting the motor and checking the charging rate of the battery, oil pressure, brake operation, clutch, and transmission etc.

4.3.10.3 Check the operation of the lift mechanism, tilt forward, tilt backward, raise the forks, lower the forks, check the hydraulic system for leaks, malfunction etc.

4.3.10.4 Demonstrate ability to operate a loaded truck forward and in reverse.

4.3.11 Each Forklift Operator shall be re-trained and re-qualified every three years.

4.3.12 The following requirements shall be met to become a 'Qualified Forklift Operator':

4.3.12.1 Medical fitness.

4.3.12.2 Possession of a valid driver's license as per the local rules and regulations for forklift operations.

4.3.12.3 Pass the written test.

4.3.12.4 Satisfactory performance of the capability requirements.

4.3.13 Forklift operators who satisfactorily complete the qualifications outlined above shall be issued a written certification card by third party as evidence of being a qualified forklift operator.

4.3.14 Only qualified operators with a certification card shall be permitted to operate a forklift truck.

4.3.15 Forklift operators shall observe traffic regulations, including authorized plant speed limits.

4.3.16 Stunt driving and horseplay shall not be permitted.

4.3.17 Duckboards or bridge plates shall be properly secured before they are driven over. Duckboards or bridge plates shall be driven over carefully and slowly, and their rated capacity never exceeded.

4.3.18 No person shall be allowed to stand or pass under the elevated portion of any forklift truck, whether loaded or empty.

4.3.19 Unauthorized passengers shall not be permitted to ride on powered industrial trucks.

4.3.20 Arms or legs are prohibited from being placed between the uprights of the mast or outside the running lines of the truck.

4.3.21 Whenever a truck is equipped with vertical only, or vertical and horizontal controls fitted to the lifting carriage or forks for lifting personnel, the following additional precautions shall be taken for the protection of personnel being elevated:

4.3.21.1 Use of a safety platform firmly secured to the lifting carriage and/or forks.

4.3.21.2 Means shall be provided by which personnel on the platform can shut off power to the truck.

4.3.22 A forklift is considered unattended when the operator is 7.5 m or more away from the vehicle which remains in his view, or whenever the operator leaves the vehicle and it is not in his view. When a forklift is left unattended or the operator dismounts and is not within 7.5 meters of the truck, load engaging equipment should be fully lowered, controls should be neutralized, power should be shut off, and brakes set to prevent movement. Wheels shall be blocked if the truck is parked on an incline.

4.3.23 Brakes shall be set and wheel blocks shall be in place to prevent movement of trucks, trailers, or railroad cars while loading or unloading. Fixed jacks may be necessary to support a semi-trailer during loading or unloading when the trailer is not coupled to a tractor. The flooring of trucks, trailers and railroad cars shall be checked for breaks and weaknesses before they are driven into.

4.3.24 There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.

4.3.25 An overhead guard shall be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application, but not to withstand the impact of a falling capacity load.

4.3.26 Each forklift truck operator shall inspect his vehicle at the start of each shift and document this inspection on a Forklift Daily Inspection checklist (YMS-MSE-F-011). Any noted condition that affects the safety of the forklift truck shall be reported to the operator's supervisor for corrective action. The inspection shall be as follows:

4.3.26.1 Daily inspections will be performed by certified forklift truck operators. It will be the responsibility of the Owner Department to provide adequate training, whether provided by the manufacturer or certified third party. Noted deficiencies identified during performance of frequent inspections will be immediately reported to the Owner Department responsible supervisor.

4.3.26.2 Periodic inspection – 1 to 12 month intervals. Periodic inspections shall be performed by certified personnel or certified third party.

4.3.27 Forklift trucks that are defective, in need of repair or are unsafe shall be tagged 'Danger – Do Not Operate' and taken out of service until restored to safe operating condition and confirmed fit for use.

4.3.28 Additional counterweighting of forklift trucks shall not be allowed unless approved by the manufacturer.

4.3.29 A maintenance log shall be kept for each forklift truck with Garage supervisor to determine when required maintenance is due. Forklift owned by YANSAB, this requirement is covered under SAP system.

4.3.30 Maintenance and repair shall be performed only by qualified Auto Mechanic / Maintenance Technician. Hiring of Auto Mech. to be carried in line YMS-OMS-P-313 qualification matrix followed with interview, minimum 5 year of experience in the same field.

4.3.31 Refueling and battery changing operations shall be performed only in designated areas of the plant. Open flames, smoking, sparks or electric arcs shall be eliminated from refueling and battery charging areas.

4.3.32 Copies of the manufacturer's operating instructions for each type of forklift truck shall be readily available for review by operators and supervisory personnel.

4.3.33 Movement of loaded forklift in the workshop or inside the plant area is not allowed without guiding by a flag-man.

4.3.34 Top Loader / Container Reach Stacker.

A special type of Forklift that can lift shipping containers from the top and can stack containers in a single pile. It has many characteristics as a reach stacker, in terms of speed, automation, and ability to move containers.

4.3.34.1 The operator must be authorized and certified, can able to understand the rated load and safe working load of the equipment.

4.3.34.2 When driving, the operator shall raise the spreader to the top position to prevent it from affecting the operator line of sight.

4.3.34.3 Check whether the spreader turn lock and its indicator light are intact and working properly.

4.3.34.4 Check and confirm the weight of the container to be lifted and its load distribution considering the load center of gravity.

4.3.34.5 When the rotating lock is not absolutely opened or closed, the equipment automatic control system shall stop the lifting operation.

4.3.34.6 The container can be lifted safely only when the indicator shows the full padlock.

4.3.34.7 The operator shall pay attention to the combination of the rotating lock and the container when the spreader is lifted.

4.3.34.8 Don't overload, make sure to work in the green area as shown on the load meter.

4.3.34.9 When moving the container, retract the boom and keep the container at least about 3m away from the ground.

4.3.34.10 If the container must be moved longitudinally (the length of the container), the spreader must be locked to avoid longitudinal tilt.

4.3.34.11 When working on uneven roads and when turning, the operator should drive at a very low speed.

4.3.34.12 When the boom is fully extended and the container is raised, the speed should be less than 3km/h, and avoid frequent braking to avoid jerking.

4.3.34.13 Working area ground condition shall be flat and properly compacted.

4.3.34.14 The operator shall pay attention to pedestrians when driving, escort or flagman must be available whenever necessary.

4.3.34.15 Nobody is allowed to walk or work under the lifted / suspended container.

4.3.34.16 When changing the front and rear direction, the equipment must be in stop position before shifting gears.

4.3.34.17 The operator shall always look in the direction and keep a clear view of the path to travel.

4.3.34.18 Always slow down and sound the horn at cross aisles and other locations where vision is obstructed.

4.3.34.19 Travel the load in define travel position for optimum visibility.

4.3.34.20 Do not operate the equipment until both forward and reverse travel paths are clear of obstruction.

4.4 Pallet Jacks / Trolleys

4.4.1 General requirements:

4.4.1.1 All manual & powered hand trolleys/jacks shall be annually inspected by competent/authorized personnel or third party and maintained periodically as per manufacturer's instructions.

4.4.1.2 User of trolley shall be aware of the rules for safe operations of specific models used and in case of powered trolleys shall undergo formal training.

4.4.1.3 It is forbidden to transport lift personnel.

4.4.1.4 Do not place any body parts between the moving parts or under the load.

4.4.1.5 Supervisor shall ensure the user is following procedure/manufacturer's instruction / method of statement / JSA for routine use of pallet trolleys and wear basic PPE.

4.4.1.6 Center the forks evenly under the load to maintain good balance and ensure stability of the load. Make sure load width not exceed 4 times of forks width and not exceed load height 1.2 Meter Max.

4.4.1.7 Make sure that the load is properly secured, including but not limited to:

a. Loading small pieces on pallet need to be circle secured by wrapping film or plastic band or use pallet edges.

b. Keep forks entirely holding the load.

c. Keep the center of gravity of loading as low as possible (avoid moving tall and thin goods).

4.4.1.8 When moving the pallet jack, forks need to be kept as low as possible, recommended to less than 15cm from floor.

4.4.1.9 Forbidden to load goods with only one fork.

4.4.1.10 Never stand or ride on a pallet jack.

4.4.1.11 Make sure that the operating handle is in neutral position when pallet jack / trolley is in motion.

4.4.1.12 The pallet jack is only allowed to be operated by single operator, including movement process.

4.4.1.13 No loading/unloading/turnaround activities on ramp.

4.4.1.14 In case of ramp is not avoidable, the slope rate of ramp should no more than 0.2%.

4.4.1.15 Always keep the load upward when moving up or down on ramp.

4.4.1.16 Before use of jack / trolley, user shall:

a. Inspect equipment to ensure is in good condition. Check:

- The manufacturer maximum load-rated capacity (can't be exceeded)
- Any cracks in the frame or evidence of stress
- Wheels
- Hydraulic system
- Forks
- Actuating level and handle
- Pallet to be used is in perfect condition
- Route is level/safe for pushing the load (avoid pulling)

4.4.1.17 Damaged equipment or equipment that has inspection overdue or did not pass the pre use inspection may not be used. This equipment shall be tagged to identify that. Tags shall be installed on defective equipment to identify that their continued use could result in personnel injury or property damage. The tag shall be attached and signed to the defective equipment. The tag shall remain with equipment removed from the area. The defect shall be notified to the concerned department.

a. Equipment shall be repaired in accordance with the

manufacturer's specifications/guidelines.

b. Park the pallet jack / trolley:

- In a level place with the forks lowered when you are finished using it.
- Make sure the handle is up & the jack is out of a traffic area so no one will trip over it.
- Don't block exits or emergency equipment, like fire extinguishers.

4.4.2 For non routine activities

4.4.2.1 Always perform a formal risk assessment before any movement. Don't consider that if the movement is short or quick, is safe.

4.4.2.2 Red flags to consider:

4.4.2.3 Use of multiple trolleys or multiple persons operating single trolley

4.4.2.4 Moving high loads masking visibility / threatening stability. See examples of tools when moving high loads with pallet jack / trolley in attachment 5.

4.4.2.5 Moving uneven surface or slope area

4.4.2.6 Running or the fork on the edge of the surface, etc.

4.4.2.7 Check with EHSS if:

a. Work Permit is required.

b. The pallet jack is the proper tool to handle that load. If more than one pallet jack is required for the movement, verify other tools.

4.4.2.8 Perform the inspection prior to use (see general requirements, 4.4.1.16a)

4.5 Motorized Equipment

4.5.1 Only authorized personnel shall operate motorized vehicles.

4.5.2 Vehicle accidents or near-misses shall be reported as per the YMS-OMS-P-318.00 procedures.

4.5.3 Storage and handling of liquid fuels such as gasoline and diesel fuel shall meet the applicable local standards/regulations requirements. In the absence of any local standards/regulations, it shall be in accordance with Saudi Arabian Standards Organization (SASO) No. 317, No. 347, No. 348, and No. 349. In addition, the National Fire Protection Association (NFPA) No. 30 code should be referenced.

4.5.4 Storage and handling of liquefied petroleum gas fuel shall meet the applicable local standards/regulations requirements. In the absence of any local standards/regulations, it shall be in accordance with SASO No. 346/1987 and/or NFPA No. 58-1969.

4.5.5 General lighting shall meet the applicable local standards / regulations requirements. In the absence of any local standards/regulations. Where general lighting is less than 2 lumens per square foot, auxiliary directional lighting shall be provided on the truck. [29 CFR 1910.178- Section (h)(2)]. It should be monitor & recorded in annual equipment checklist YMS-MSE-F-014 and record will be maintaining at rigging office.

4.5.6 Concentration levels of carbon monoxide gas created by powered industrial truck operations shall meet the applicable local standards/regulations requirements. In the absence of any local standards/regulations, it shall not exceed 35 ppm (based on OSHA 1910.1000 permissible exposure limits). It should be monitor & recorded annually in check list YMS-MSE-F-009 and record will be maintaining at Rigging office.

4.5.7 All traffic regulations and safe practices shall be observed, including the plant speed limits.

4.5.8 Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-center loads that cannot be centered.

4.5.9 Only loads within the rated capacity of the truck shall be handled.

4.5.10 Long or high (including multiple-tiered) loads that may affect capacity shall be adjusted.

4.5.11 All motorized vehicles shall be in safe condition, periodically inspected, and taken out of service if in an unsafe or suspect condition. Any defective or unsafe vehicle / truck shall be taken out of service until it has been restored to safe operating condition. Repairs shall be carried out in a safe location, by a qualified Auto-Mechanic.

4.5.12 Fuel tanks shall not be filled while the engine is running. Spillage shall be avoided.

4.5.13 Spillage of oil or fuel shall be carefully washed away or allowed to evaporate completely, and the fuel tank cap replaced before restarting the engine.

4.5.14 No vehicles shall be operated with a leak in the fuel system until the leak has been corrected.

4.5.15 Appropriate precautions against fire hazards shall be taken for checking electrolyte level in storage batteries or gasoline levels in fuel tanks.

4.5.16 Explosion safe vehicles shall be used based on hazardous area classification when operated inside the plant. Water mufflers, where used, shall be filled by the operator daily or as frequently as is necessary to prevent depletion of the supply of water below 75% of the filled capacity. Vehicles with mufflers with screens or other parts that may become clogged shall not be operated while such screens or parts are clogged. Any vehicle that emits hazardous sparks or flames from the exhaust system shall immediately be removed from service, and not returned until the cause for the emission of such sparks and flames has been eliminated.

4.5.17 Vehicles shall be kept free of excess oil and grease. Noncombustible agents should be used for cleaning of trucks.

- Low flash point (below 100°F (38°C)) solvents shall not be used.
- High flash point (at or above 100°F (38°C)) solvent may be used. Precautions regarding toxicity, ventilation, and fire hazard shall be appropriate for the agent or solvent used.

4.5.18 Aerial devices (aerial lifts) shall be designed and constructed in conformance with the applicable local standards/regulations requirements. In the absence of any local standards/regulations, design shall be in accordance with the requirements of the American National Standard Institute for 'Vehicle Mounted Elevating and Rotating Work Platform', ANSI A92.2. Aerial devices include the following types of vehicle-mounted aerial devices used to elevate personnel to jobsites above ground:

4.5.18.1 Extensible boom platforms

4.5.18.2 Aerial ladders

4.5.18.3 Articulating boom platforms

4.5.18.4 Vertical towers

4.5.18.5 Any combination of the above

Aerial equipment may be made of wood, metal, fiberglass reinforced plastic, or other material, may be powered or manually operated, and are deemed to be aerial lifts whether or not they are capable of rotating about a substantially vertical axis.

4.5.19 Aerial lifts may be 'field modified' for uses other than those identified by the manufacturer, provided the modification has been certified in writing by the manufacturer or by any other nationally recognized testing laboratory to conform with all applicable provisions of the local standards/regulations requirements. In the absence of any local standards/regulations, it shall conform to ANSI A92.2 and this section, and to be at least as safe as the equipment was before modification.

4.5.20 If work is to be performed near overhead energized lines, the lines shall be de-energized and grounded, or other protective measures shall be provided before work is started with required work permit as per YMS-OMS-P-316.10. If protective measures such as guarding, isolating, or insulating are provided, these precautions shall prevent personnel from contacting such lines directly with any part of their body or indirectly through conductive materials, tools or equipment.

4.5.21 Before ladder trucks and tower trucks are moved for highway travel, aerial ladders shall be secured in the lower traveling position by the locking device above the truck cab and the manually operated device at the base of the ladder, or by other equally effective means (e.g. cradles which prevent rotation of the ladder in combination with positive acting linear actuators).

4.5.22 Lift controls shall be tested each day by the operator prior to use to determine that such controls are in safe working condition. Tests shall be performed by a certified operator and deficiencies in controls shall be immediately reported to the concerned supervisor.

Following form shall be used for the inspection and PM of Aerial Lift

- YMS-MSE-F-033: - Aerial Lift Daily Inspection Checklist
- YMS-MSE-F-034: - Aerial Lift Monthly PM Checklist

4.5.23 Only trained and authorized personnel certified by third party shall operate an aerial lift.

4.5.24 Belting off to an adjacent pole, structure or equipment while working from an aerial lift shall not be permitted.

4.5.25 Personnel shall always stand firmly on the floor of the basket and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices to attain a work position.

4.5.26 A body harness shall be worn and a lanyard attached to the boom or basket when working from the aerial lift.

4.5.27 Boom and basket load limits specified by the manufacturer shall not be exceeded.

4.5.28 The brakes shall be set and outriggers, when used, shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial lift on an incline.

4.5.29 An aerial lift truck shall not be moved when the boom is elevated in a working position with personnel in the basket, except for equipment that is specifically designed for this type of operation.

4.5.30 Articulating booms and extendable boom platforms, primarily designed as personnel carriers, shall meet the applicable local standards/ regulations requirements. In the absence of any local standards/ regulations, it shall have both platform upper and lower controls. Controls shall be plainly marked as to their function.

- Upper controls shall be in or beside the platform within easy reach of the operator.
- Lower controls shall provide for overriding the upper controls. Lower level controls shall not be operated unless permission has been obtained from personnel in the lift, except in case of emergency.

4.5.31 The insulated portion of an aerial lift shall not be altered in any manner that might reduce its insulating value.

4.5.32 Before moving an aerial lift for travel, the boom(s) shall be inspected to see that it is properly cradled, and outriggers are in stowed position.

4.5.33 All critical hydraulic and pneumatic components shall comply with the provisions of the applicable local standards/regulations requirements. In the absence of any local standards/regulations, it shall meet American National Standards Institute standard, ANSI A92.2 Section 4.9 Bursting Safety Factor. Critical components are those in which a failure would result in a free fall or free rotation of the boom. All non-critical components shall have a bursting factor of at least two to one.

4.5.34 Refueling and battery changing operations shall be performed only in designated areas of the plant. Open flames, smoking, sparks or electric arcs shall be eliminated from refueling and battery charging areas.

4.5.35 All vehicle shall follow Road Transportation Procedure YMS-OMS-P-3113.01

4.6 Legal and Regulatory Requirements

All applicable local, national, and state/regional regulations and requirements and all international standards and treaties to which YANSAB subscribes are identified and listed in YMS-IS-L-001 (Regulatory and Legal Requirement SHEM/OMS Mapping list) and has been included in YMS-IS-P-052 & assessed for compliance as per YMS-IS-P-056 procedures and shall be in line with Compliance, Assessments and Evaluation standard (YMS-OMS-P-232.00).

4.7 Control of Records

4.7.1 Documentation & records pertaining to this procedure are identified and described in accordance with Documentation and control of record procedure (YMS-OMS-P-234.00). In case of any change in the documentation and record of this procedure, the leader of this system shall update leader of YMS-OMS-P-234.00

4.7.2 Record Keeping as per below table:

S/N	Record Description	Type	Location	Responsibility	Retention Period
01	Approved procedure (YMS-OMS-P-316.06) & attachments	Hard	Office of OMS Administrator	OMS Administrator	3 years
		Soft	Q-Pulse	TQM Specialist	3 years
02	Active files (Word / Excel) and attachments	Soft	Office of OMS Administrator	OMS Administrator	Current

Table 4.1 - Documentation (Procedure)

S/N	Record Description	Type	Location	Responsibility	Retention Period
01	Crane Operator Daily Inspection Checklist	Hard	Area Supervisor Office	Area Supervisor	3 Years
02	Crane Monthly Maintenance and Inspection Checklist				
03	Crane Maintenance and Inspection Checklist - Quarterly				
04	Crane Maintenance and Inspection Checklist - Bi-Annual				
05	Crane Maintenance and Inspection Checklist - Annual				
06	Forklift Daily Inspection Checklist				
07	Forklift Quarterly Maintenance and Inspection Checklist				
08	Forklift Bi-Annual Maintenance and Inspection Checklist				

S/N	Record Description	Type	Location	Responsibility	Retention Period
09	Forklift Annual Maintenance and Inspection Checklist	Hard	Area Supervisor Office	Area Supervisor	3 Years
10	Manlift Maintenance and Inspection Daily Checklist				
11	Manlift Maintenance and Inspection Quarterly Checklist				
12	Manlift Maintenance and Inspection Yearly Checklist				
13	Checklist for Crane Rope Inspection				
14	Checklist for Overhead / Gantry/ Monorail Inspection				

Table 4.2 - Implementation Record

5 COMPETENCY

5.1 Competency matrix is developed in accordance with Training & Competencies (YMS-OMS P-131.00) procedure. The key skills and knowledge required to successfully implement this procedure are identified below.

5.2 The criteria for the proficiency levels [D/P/A] is defined in YMS-OMS-P-131.00 (Training & Competency) procedure.

Competency	Type	Site Management Team	Management/ Warehouse Team	EHSS	Operation Employees
Static and Mobile Equipment		-	D	D	-
EHSS Core Value (Principles and Behaviors)		D	D	D	D
General Plant EHSS and Life Saving Rules		D	D	D	D

Table 5.1 - Competency Matrix

Competency Types: Core, Leadership, Functional

Proficiency Levels: D Developing, P Proficient, A Advanced

6 CONTINUAL IMPROVEMENT

6.1 To promote continual improvement in the application of this procedure, appropriate processes, measures and key performance indicators (KPI) are defined to assess performance in line with Performance Management Procedure (YMS-OMS-P-211). The following measures shall be used as a minimum:

6.1.1 Total number of incident related to Lifting equipment v/s total incident

6.1.2 % Reduction in Class A,B &C incidents related to this sub element

6.1.3 % Overdue third party inspections against plan

6.2 A rhythm to review performance against this procedure is established and the results of these reviews shall be used as input to the YANSAB Continual Improvement Plans in accordance with Continual Improvement Framework (YMS-OMS-P-511.00) procedure. This includes:

6.2.1 Annual OMS compliance assessment. (Internal assessment)

6.2.2 Verification through Self, internal and external assessment

6.2.3 % Compliance of third party inspection requirement

6.3 Statistical tools shall be used to analyze the performance of this OMS procedure in accordance with Process & Continual Improvement, Problem Solving Tools & Techniques (YMS-OMS-P-521.00) procedure.

6.4 Performance improvement, as well as any associated corrective and preventive actions shall be documented and tracked then communicated appropriately to YANSAB personnel and stakeholders on a regular basis. This includes.

6.4.1 Lifting equipment inspection & compliance status

6.4.2 Compliance of Regulatory requirement

6.4.3 Finding from the various audit and recommendation to close & improve the system

7 REFERENCES

7.1 Links with Other OMS Procedures

Input	Interface / link	Output
YMS-OMS-P-111.00	Leadership Commitment and Culture	YMS-SHEM-P-08.06
YMS-OMS-P-122.00	Site Stewardship Model Expectations on assignment of responsibilities Formation of relevant (sub)committees and periodic meetings Organization effectiveness - Element Leader compliance roles and EHSS assurance for analyzing and improvement opportunity Stewardship model - EHSS value driver team and EHSS Team for continual improvement	YMS-SHEM-P-08.06
YMS-OMS-P-131.00	Request for identification and communication of necessary training requirements	YMS-SHEM-P-08.06

Input	Interface / link	Output
YMS-OMS-P-231.00	Policy and Management System Development Formatting requirements Clarification, variance and exemption process to be followed	YMS-SHEM-P-08.06
YMS-OMS-P-232.00	Compliance, Assessments and Evaluation Compliance audit expectations	YMS-SHEM-P-08.06
YMS-OMS-P-234.00	Documentation and Control of Records Record keeping requirements	YMS-SHEM-P-08.06
YMS-SHEM-P-08.00	Minimum expectations for the Sub-element Leader on updates, action follow up, communication and reporting	YMS-SHEM-P-08.06
YMS-SHEM-P-08.02	Incidents related to laboratory	YMS-SHEM-P-10.00
YMS-SHEM-P-08.03	Material Handling and Storage	YMS-SHEM-P-08.06
YMS-SHEM-P-08.05	Electrical Safety	YMS-SHEM-P-08.06
YMS-SHEM-P-08.06	Request for identification and communication of necessary training requirements relating to this sub-element	YMS-OMS-P-131.00
YMS-SHEM-P-08.06	Safe work practices: communicate all data related this sub element for OMS committee	YMS-SHEM-P-08.03
YMS-SHEM-P-08.06	Pre-startup SHE Review	YMS-SHEM-P-06.00
YMS-SHEM-P-08.06	Management of Change	YMS-SHEM-P-09.00
YMS-SHEM-P-08.06	EHSS Incident Reporting, Classification, Investigation and Analysis	YMS-SHEM-P-10.00
YMS-SHEM-P-08.08	Personal Protective Equipment	YMS-SHEM-P-08.06
YMS-SHEM-P-08.10	Work Permits	YMS-SHEM-P-08.06
YMS-SHEM-P-09.00	Any procedural or organizational change related to this element	YMS-SHEM-P-08.06
YMS-SHEM-P-10.00	Identification of Class A, B and C incidents related to general EHSS rules	YMS-SHEM-P-08.06
YMS-SHEM-P-11.01	Emergency planning and response	YMS-SHEM-P-08.06
YMS-SHEM-P-11.03	Testing and Maintenance of Emergency Response Equipment	YMS-SHEM-P-08.06
YMS-OMS-P-511.00	Continuous improvement of the management system	YMS-SHEM-P-08.06

Table 7.1 - Interfaces and Linkages

7.2 Glossary, Formulae & Definitions

Glossary	Definition
ACGIH A 2 Carcinogen	Any vehicle-mounted device, telescoping or articulating, or both, which is used to position personnel.
ACGIH A 3 Carcinogen	An aerial device consisting of a single or multiple section extendible ladder.
ANSI	American National Standards Institute
Appointed	Assigned specific responsibilities by the employer or the employer's representative.
Articulating Boom Platform	An aerial device with two or more hinged boom sections
Automatic Crane	A crane which when activated operates through a present cycle or cycles.
Auxiliary Hoist	A supplemental hoisting unit of lighter capacity and usually higher speed than provided for the main hoist.
Brake	A device used for retarding or stopping motion by friction or power means.
Bridge	Part of a crane consisting of girders, trucks, end-ties, foot walks, and drive mechanisms, which carries the trolley or trolleys
Bridge Travel	Crane movement in a direction parallel to the crane runway
Bumper	An energy absorbing device for reducing impact when a moving crane or trolley reaches the end of its permitted travel; or when two moving cranes or trolleys come in contact.
Cab	The operator's compartment on a crane.
Cab Operated Crane	A crane controlled by an operator in a cab located on the bridge or trolley.
Cantilever Gantry Crane	A gantry or semi-gantry crane in which the bridge girders or trusses extend transversely beyond the crane runway on one or both sides.
Certified Personnel	Personnel, who have been trained, tested and qualified.
Conductors Bridge	The electrical conductors located along the bridge structure of a crane to provide power to the trolley.
Conductor Runway	The electrical conductors located along the bridge structure of a crane to provide power to the crane.
Control Braking	A method of controlling crane motor speeds when in the overhauling condition.
Controller Spring Return	A controller which when released will return automatically to a neutral position
Counter Torque	A method of control by which the power to the motor is reversed to develop torque in the opposite direction.
Crane	A machine for lifting and lowering a load and moving it horizontally, with the hoisting mechanism as an integral part of the machine. Cranes whether fixed or mobile are operated manually or by power.

Glossary	Definition
Current Collectors	Contacting devices for collecting current from the runway or bridge conductors.
Drag Brake	A brake that provides retarding force without external control.
Drift Point	A point on a travel motion controller that releases the brake while the motor is not energized. This allows for coasting before the brake is set.
Drum	The cylindrical member around which the ropes are wound for raising or lowering the load.
Dynamic	A method of controlling crane motor speeds when in the overhauling condition to provide a retarding force.
EHSS	Environment, Health, Safety and Security
Emergency Stop Switch	A manually or automatically operated electric switch to cut off electric power independently of the regular operating controls.
Equalizer	A device, which compensates for unequal length of stretch of a rope.
Explosion	These function like a Relief Valve and protect the equipment against major damages caused by (gas or combustible dust) explosions.
Exposed	Capable of being contacted inadvertently. Applied to hazardous objects not adequately guarded or isolated.
Extensible Boom Platform	An aerial device (except ladders) with a telescopic or extensible boom. Telescopic derricks with personnel platform attachment shall be considered to be extensible boom platforms when used with a personnel platform.
Fail Safe	A provision designed to automatically stop or safely control any motion during which a malfunction occurs.
For Operated	A crane which has a pendant (hanging) or nonconductive rope controlled by an operator on the floor or an independent platform.
Foot Walk	A walkway with handrail, attached to the bridge or trolley for access purposes.
Gantry Crane	A crane similar to an overhead crane except that the bridge for carrying the trolley of trolleys is rigidly supported on two or more legs running on fixed rails or other runway.
Hoist	An apparatus which may be a part of a crane, exerting a force for lifting or lowering.
Hoist Chain	The load bearing chain in a hoist
Hoist Motion	That motion of a crane that raises and lowers a load.
Holding Brake	A brake that automatically prevents motion when power is off.
Insulated aerial device	An aerial device designed for work on electrically energized lines and apparatus.
Legal Requirements	Obligations imposed on an organization, including those that are statutory or regulatory.

Glossary	Definition
Limit Switch	A switch that is operated by some part or motion of a power-driven machine or equipment to alter the electric circuit associated with the machine or equipment.
Line Management	Supervisors, Managers, and Senior Managers.
Load Block	The assembly of hook or shackle, swivel, bearing, sheaves, pins, and frame suspended by the hoisting rope.
Main Hoist	The hoist mechanism provided for lifting the maximum rated load.
Man Trolley	A trolley having an operator's cab attached thereto.
Management System	Detailed system developed by the SABIC Entity/ Division or Function within SABIC Divisions that explains the implementation methodology to meet the requirements of SABIC SHEM Standards and Regulatory Requirements.
Master Switch	A switch controlling the entire power supply to the crane
Mechanical	A method of control by friction
Mobile Unit	A combination of an aerial device, its vehicle, and related equipment.
NFPA	National Fire Protection Association, USA
OMS Administrator	An individual responsible for the coordination of OMS program development and implementation. He interfaces with OMS Element Leader and management.
OMS Element Leader	An individual responsible to develop and maintain the management system and to monitor the implementation of the assigned OMS element
OMS Sponsor	A senior level individual from the Senior Management Team who provides direction, secure resources, and inspires a successful development and implementation of OMS in his organization.
OMS Sub element Leader	An individual responsible to develop and maintain the management system and to monitor the implementation of the assigned OMS sub element.
Overhead Crane	A crane with a movable bridge carrying a movable or fixed hoisting mechanism and traveling on an overhead fixed runway structure.
Platform	Any personnel-carrying device (basket or bucket) which is a component of an aerial device.
Power Operated Crane	A crane whose mechanism is driven by electric, air, hydraulic, or internal combustion means.
Pulpit Operated Crane	A crane operated from a fixed operator station not attached to the crane.
QAT	Quality Assurance Team
Rated Load	The maximum load for which a crane of individual hoist is designated and built by the manufacturer and shown on the equipment nameplate(s).
Regenerative	A form of dynamic braking in which the electrical energy generated is fed back into the power system.

Glossary	Definition
Remote Operated Crane	A crane controlled by an operator not in a pulpit or in the cab attached to the crane, by any method other than pendant or rope control
Rope	Wire rope, unless otherwise specified
Running Sheave	A sheave that rotates as the load block is raised or lowered
Runway	An assembly of rails, beams, girders, brackets, and framework on which the crane or trolley travels.
SASO	Saudi Arabian Standard Organization.
Semi Gantry Crane	A gantry crane with one end of the bridge rigidly supported on one or more legs that run on a fixed rail or runway, the other end of the bridge being supported by a truck running on an elevated rail or runway.
Shall	The term "shall" as used in this document is intended to describe mandatory requirements
SHEM	Safety, Security, Health & Environment Management.
Should	The term "should" is intended to designate optional or practices which SABIC does not consider mandatory, but does recommend to be consciously evaluated for any deviation from these recommended
Side Pull	That portion of the hoist pull acting horizontally when the hoist lines are not operated vertically.
Span	The horizontal distance between center to center of two columns (girders) that supports the runway rails.
Standby Crane	A crane, which is not in regular service but which is used occasionally or intermittently as required.
Stop	A device to limit travel of a trolley or crane bridge. This device normally is attached to a fixed structure and normally does not have energy absorbing ability
Storage Bridge Crane	A gantry type crane of long span usually used for bulk storage of material; the bridge girders or trusses are rigidly or non-rigidly supported on one or more legs. It may have one or more fixed or hinged cantilever ends
Switch	A device for making, breaking, or for changing the connections in an electrical circuit.
Trolley	The unit that travels on the bridge rails and carries the hoisting mechanism.
Truck	The unit consisting of a frame, wheels, bearings, and axles that support the bridge girders or trolleys.
Vehicle	Any carrier that is not manually propelled.
Vertical Tower	An aerial device designed to elevate a platform in a substantially vertical axis
Wall Crane	A crane having a jib with or without trolley and supported from a sidewall or line of columns of a building. It is a traveling type and operates on a runway attached to the sidewall or columns.

Glossary	Definition
YANSAB Facilities	For the purpose of OMS & other applicable Standard, these include YANSAB Entities and any other physical structure or area owned / operated / leased / rented / managed by YANSAB, including standalone buildings, product handling & warehouses that are not part of any YANSAB Entity.

Table 7.2 - Glossary and Definition

7.3 Other References

1 ANSI B56.1-1969

2 NFPA No. 30-1969 code

3 OSHA 1910.1000

4 OSHA 29 CFR 1910.178

5 OSHA 29 CFR 1910.27

6 SASO No. 317/1987, 347, 348/1987, and 349/1987

7 SASO No. 346/1987 and/or NFPA No. 58-1969

8 APPENDIX

8.1 Attachments

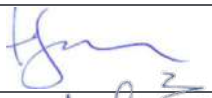
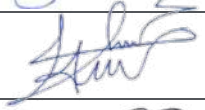
S/N	REFERENCE	DESCRIPTION
01	YMS-SHEM-08.06-F-01	Rope Inspection Checklist
02	YMS-SHEM-08.06-F-02	Overhead / Gantry Crane & Monorail Inspection Checklist
03	YMS-SHEM-08.06-GL-01	Types of Industrial Trucks
04	YMS-SHEM-08.06-GL-02	Standard Hand Signal

YANBU NATIONAL PETROCHEMICAL COMPANY (YANSAB)

Document No.: YMS-SHEM-P-08.09 (YMS-OMS-P-316.09)

Document Name: Working at Height

Rev. No.: 11

	Position	Name	Signature	Date
Originator	Sub-Element Leader	Ali Al-Shehri		25.12.22
Reviewed by	Element Leader	Bandar Al-Nomani		26/12/2022
	Quality Assurance Team Member	Abdullah Al-Ghamdi		26/12/2022
		Mohammed Badri		26.Dec.2022
	OMS Administrator	Abdurrahman Ogues		26.12.2022
	Dimension Chairman	Habeeb Al-Subhi		26 Dec 2022
Approved by	OMS Leader	Majed Al-Ahmadi		27-12-2022

REVISION HISTORY

Revision No.	Date	Revision Description
00	Sep-2011	• Original Issue
01	Apr-2012	• Updated as per Internal Audit 2011
02	Mar-2013	• Update as per SABIC external audit 2012
03	Aug-2014	• Update as per self-audit 2013
04	Sep-2015	• To close 2014 internal audit findings • Modified Procedure as per Template structure & requirements of YMS-SHEM-P-00.03 • More clarifications introduced for the requirements, definitions, Procedure defined step by step as per SABIC requirements, Roles & responsibilities defined as per RACI, verification process modified, feedback mechanism flow chart introduced, links reference clause number introduced • New form introduced
05	May-2016	• Modified procedure as per Template structure & requirements of YMS-SHEM-P-00.03 and YMS-SHEM-P-00.01
06	Dec-2017	• Updated as per External Audit 2016 • Updated as per related SABIC clarifications • Add medical fit test and medical requirements • Enhance quality of previous attachments lists and diagrams • New guiding illustrated Drawings added • New forms added • New Guideline added • Updated as per related Regulations • Add independent clause for grating as per EHSS Council recommendation bulletins
07	Oct-2019	• Revised as per revised SHEM-P-08.09 and YMS-OMS format • Update as per SABIC OMS and applicable legal regulation • Add grating removal form • Adding MEWP approval process Form • MEWP Guideline • Scaffolding tracking sheet from and ladder tracking sheet

Revision No.	Date	Revision Description
08	Nov-2021	• Scaffolding tag requirements • HCIS ladder step coloring requirements as per STF committee recommendation • SARH project to include PET requirements • Working at height PPE clause • Update as per internal audit
09	May-2022	• Adding a clause mandating the segregation of duty between supervisor and inspector as per RCA recommendation • To review SHEM-08.09 Standard as per OMS Revision cycle • Updating Working at Height and Create Opening endangering conditions as Life Saving Rules (LSR) Linked with SHEM-08.01 • Enhancing of SHEM-08.09 competency through adding the Instructor Led Training as Proficient level • Adding a clause mandating usage of Self-closing safety gate in scaffolding as per iMEA assessment findings • Revised measures and KPI for continual improvement
10	Oct - 2022	• Update clause about yellow tagged scaffolding & full body harness requirements as per RCA recommendation • Linking rescue plan requirements with SHEM-08.10 as per SABIC OMS, adding when shall be used & removing rescue plan form
11	Dec- 2022	• Update procedures to prevent the usage of the step-stool, provide different alternative of ladders and Guidelines of step ladders as per RCA recommendations (4.3.1.2 & 4.3.1.24 clauses) • Updated legal and Regulatory Requirements section.

CONTENTS

1 PURPOSE

The purpose of this procedure is to provide minimum requirements and guidance to achieve effective fall protection and prevention procedures to protect employees while working on/around elevated or lower level work surfaces.

This procedure shall establish standard practices and guidelines when working near unprotected sides and edges situated 1.8 meters (6 feet) or more above floor/ground, work platforms or lower levels.

Topics to be addressed under this procedure are the following:

- All work carried out at height
- Using cages for lifting personnel
- Selection and safe use of ladders/staircases
- Erection, dismantling and safe use of scaffoldings

2 SCOPE

2.1 Scope of this procedure applies to all activities where personnel are required to enter and/or work at height within YANSAB facilities implementing OMS procedure.

2.2 It is applicable to fixed parts of YANSAB buildings and installations as well as on top of tankers and rail cars, and also includes use of temporary tools such as mobile ladders, scaffolding or steps to perform any activity at height. Working at height includes working in close proximity to floor or wall openings, roof edges, etc. Also Future activities such as construction, maintenance, modification and servicing.

3 ROLES AND RESPONSIBILITIES

3.1 System requirements and responsibilities communicated to ensure all involved understand the objectives and their specific responsibilities/accountabilities.

3.2 Responsibility Assignment Matrix, indicating the Responsible, Accountable, Consulted and Informed (RACI) roles for high-level activities are detailed below.

Activity Description	Sponsor	OMS Leader	Dimension Chairman	EL, SHEM-08	SEL, SHEM-08.09	Area Owner / Department Sr. Managers / Managers	EHSS Sr. Manager / Manager	SHEM Administrator	Operation & Maintenance Supervisor	All Employees / Contractors	YANSAB contractor Supervisor	Scaffolding Inspector	Scaffolders	Scaffolding Supervisors	ERT	Rigging Supervisor	Shop Manager	Civil engineer	Inspector (Static Engineer/Specialist)
Evaluate applicability of this element	I	A	R	R	R	I	R	I	I	I					I	I	I		I
Develop and implement Level 3 documents	I	A	R	R	R	I	R	I	I	I					I	I	I		I
Ensure adequate implementation of this sub-element	I	A	R	R	R	I	R	I	I	I					I	I	I		I
Identify training requirements	I	I	A	R	R	C	R	I	I	I					I	I	I		I
Develop and track performance indicators	C	C	R	A	R	C/I	R	I	I	I					I	I	I		I
Identify all regulatory requirements relating to this sub-element	C	A	R	R	R	C	R	I	I	I					I	I	I		I
Comply with all regulatory requirements relating to this sub-element	C	A	R	R	R	R	R	R	R	R					R	R	R		R
Perform periodic inspections to verify ongoing compliance with regulatory and internal requirements relating to this sub-element	I	I	I	A	R	R	R	C	C							R	R		R
All clauses of General requirement for working at heights:	I	I	I	I	C	A	C/I	C/I	R	R					C/I	R	R		C
Rescue plan shall be developed that ensures prompt rescue of persons working at height to prevent suspension trauma.	I	I	I	I	C	A	C/I	C/I	R	R									C

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All personal fall protective equipment shall be inspected visually by the user prior to each use. Any fall protection equipment damaged or has been suspected to have been subjected to shock or excessive load impact shall immediately be discarded and replaced.	I	I	I	C	C	A	C/I	C/I	R	R									
If the anchor point is less than 5.6m (18.5 feet) from a hazard below, a self-retracting lanyard (SRL) should be used.	I	I	I	C	C	A	C/I	C/I	R	R									
When working at height, workers should not work alone. Personnel working at height should be medically fit without any condition such as vertigo affecting their ability to safely work at height.	I	I	I	C	C	A	C/I	C/I	R	R									
Selection of a fall protection method should consider exposure to other risks such as flash fire, product release or drowning and ensure egress is not hampered by fall protection.	I	I	I	C	C	A	C/I	C/I	R	R									
In case of need, strength of pipeline or structure shall be evaluated by Static Equipment engineer prior to using it as an anchorage point to ensure that it satisfies the requirement in accordance with the definition of fixed anchorage point.				I	C	A	C/I												R

Activity Description	Sponsor	OMS Leader	Dimension Chairman	EL, SHEM-08	SEL, SHEM-08.09	Area Owner / Department Sr. Managers / Managers	EHSS Sr. Manager / Manager	SHEM Administrator	Operation & Maintenance Supervisor	All Employees / Contractors	YANSAB contractor Supervisor	Scaffolding Inspector	Scaffolders	Scaffolding Supervisors	ERT	Rigging Supervisor	Shop Manager	Civil engineer	Inspector (Static Engineer/Specialist)
All clauses of Lifting Personnel through Cages requirement				C	C	R	C/I	I	R	R						R	A		
All clauses of Ladders & Staircases				C	C/I	A	R	I	R	R									
All clauses of General Requirements for All Types of Ladders / Stairs				C	C/I	A	R	I	R	R									
Non-rigid (rope, cable, chain, webbing etc.) ladders are not permitted unless approved by the EHSS Team through a risk assessment as per YMS-SHEM-P-08.10. While using non-rigid ladders, fall protection such as self-retracting lanyards (SRL) should be considered.				C	C/I	A	R	I	R	R									
All clauses of Portable Ladders				C	C/I	A	R	I	R	R									
All clauses of Step Ladders				C	C/I	A	R	I	R	R									
All clauses of Single (Straight) & Extension Ladders:				C	C/I	A	R	I	R	R									
All clauses of Fixed Ladder				C	C/I	A	R	I	R	R									
All clauses of Cages and wells for Fixed ladders:				C	C/I	A	R	I	R	R									
Provide yellow painting for the first and last rungs (steps) of the ladders as per HCIS – Safety and Fire Directives.				C	C/I	A	R	I	R	R									

Activity Description	Sponsor	OMS Leader	Dimension Chairman	EL, SHEM-08	SEL, SHEM-08.09	Area Owner / Department Sr. Managers / Managers	EHSS Sr. Manager / Manager	SHEM Administrator	Operation & Maintenance Supervisor	All Employees / Contractors	YANSAB contractor Supervisor	Scaffolding Inspector	Scaffolders	Scaffolding Supervisors	ERT	Rigging Supervisor	Shop Manager	Civil engineer	Inspector (Static Engineer/Specialist)
All clauses of Mobile Ladders				C	C/I	A	R	I	R	R									
All clauses Wooden Ladders				C	C/I	A	R	I	R	R									
Periodic Inspection of Ladders				C	C/I	A	R	I	R	R									
A competent person shall inspect ladders for visible defects periodically (every one year) and after any incident that could affect their safe use. In addition to the formal inspections, employee should perform the inspection prior to using a ladder.				C	C/I	A	R	I	R	R									
Portable, Step & Mobile ladders shall be inspected every year by competent person. This shall be coordinated by unit/section Supervisor, and to maintain a record using attachment 8.2: YMS-SHEM-08.09-F-02 fixed ladders, stairs and gratings and attachment 8.1: YMS-SHEM-08.09-F-01 Ladder inspection checklist once/year.				C	C/I	A	R	I	R	R	R	R		R					R
Attachment 8.13: YMS-SHEM-08.09-T-02 Ladder Tag Number Template shall be used in order to label the portable, mobile and step ladders.				C	C/I	A	R	I	R	R									

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Attachment 8.12: YMS-SHEM-08.09-T-01 Portable ladders Inspection Tag Template shall be used for labeling portable, mobile and step ladders.				C	C/I	A	R	I	R	R									
Attachment 8.5: YMS-SHEM-08.09-F-04/05 Scaffolding Inspection checklist and scaffolding Tracking Sheet shall be used to identify next checking cycle.				C	C/I	I	C/I	R			A	R		R					
Attachment 8.17: YMS-SHEM-08.09-F-07 ladder Inspection Tracking Sheet shall be used to identify next checking cycle.				C	C/I	A	R	I	R	R	R			R					
Defective ladders shall be withdrawn from service for repair or destruction and tagged "DANGEROUS, DO NOT USE" as per General EHSS rules YMS-SHEM-P-08.01 during inspection or any time defect been observed.				C	C/I	A	R	I	R	R	A	R		R					
All clauses and sub clauses of Stairways				C	C/I	A	R	I	R	R	R			R					R
All temporary stairs and steps shall not be used until inspected through checklist by Inspection Engineer YMS-SHEM-08.09-F-09 Temporary Stairs Checklist				I	C/I	A	C/I	I											R
All Clauses and sub clauses of Scaffoldings				I	C/I	A	C/I	I	I	R	R			R					

Activity Description	Sponsor	OMS Leader	Dimension Chairman	EL, SHEM-08	SEL, SHEM-08.09	Area Owner / Department Sr. Managers / Managers	EHSS Sr. Manager / Manager	SHEM Administrator	Operation & Maintenance Supervisor	All Employees / Contractors	YANSAB contractor Supervisor	Scaffolding Inspector	Scaffolders	Scaffolding Supervisors	ERT	Rigging Supervisor	Shop Manager	Civil engineer	Inspector (Static Engineer/Specialist)
Scaffolding should be constructed only by 3rd party certified scaffolders.				I	C/I	A	C/I	I	I	R	R			R					
Scaffolders shall use full body harness in accordance with Personal Protective Equipment Procedure (YMS-SHEM-P-08.08) while erecting or dismantling scaffoldings.				I	C/I	R	C/I	I	I		A		R	R					
Competent person shall inspect scaffold after construction and after any modification to the existing scaffolding. After inspection, the inspection tag 'Ready for Use' shall be signed and installed on the access ladder of the scaffolding. Weekly re-inspection shall be done.				I	R	R	C/I	I	I		A	R							
Only those scaffolding that has a signed inspection tag indicating fit for use, shall be used.									I	R									
The green 'Ready for Use' tag shall be removed if any modification is to be carried out on the scaffolding. Permission for use of modified scaffolding shall only be given after re-inspection.								I	I		A		R	R					

Activity Description	Sponsor	OMS Leader	Dimension Chairman	EL, SHEM-08	SEL, SHEM-08.09	Area Owner / Department Sr. Managers / Managers	EHSS Sr. Manager / Manager	SHEM Administrator	Operation & Maintenance Supervisor	All Employees / Contractors	YANSAB contractor Supervisor	Scaffolding Inspector	Scaffolders	Scaffolding Supervisors	ERT	Rigging Supervisor	Shop Manager	Civil engineer	Inspector (Static Engineer/Specialist)
The Yellow 'Ready for Use' tag shall be used for scaffolding that cannot be used without wearing a harness,								I	I	R	A	R							
All scaffold components shall be inspected physically before use to ensure safety and compliance with applicable requirements and practices. All damaged/worn-out/corroded components shall be discarded and replaced. Wooden planks shall not be used if there is a possibility of fire e.g. pyrophoric materials or high temperatures.								I	I		A	R							
Designs for scaffoldings standing over 37 meters height shall be prepared, reviewed and approved by a qualified engineer.				I	C/I		C/I		I		A			R					
Periodic Inspection of Scaffoldings				I	R	R	C/I	I	I			R							
By competent person certified by 3rd party before first use				I	R	R	C/I	I	I			R							
Daily physical inspection by users prior to every use								I		R									
If scaffolding needs to be used for more than a week, it shall be re-inspected by competent person certified by											A	R							

Activity Description	Sponsor	OMS Leader	Dimension Chairman	EL, SHEM-08	SEL, SHEM-08.09	Area Owner / Department Sr. Managers / Managers	EHSS Sr. Manager / Manager	SHEM Administrator	Operation & Maintenance Supervisor	All Employees / Contractors	YANSAB contractor Supervisor	Scaffolding Inspector	Scaffolders	Scaffolding Supervisors	ERT	Rigging Supervisor	Shop Manager	Civil engineer	Inspector (Static Engineer/Specialist)
3rd party every week (7 days) and a new tag shall be displayed after rectifying the discrepancy, if any.																			
Scaffolding inspection filled checklist YMS-SHEM-08.09-F-03 shall be handed over by certified inspectors to the respective plant maintenance supervisor for maintain the records at least one year.								I			A	R							
Scaffolding Inspection Tracking Sheet YMS-SHEM-08.09-F-05 should be filled by YANSAB Contractor Supervisor								I			A	R							
All work crewmembers that going to be use scaffolding shall confirm that there is no obstruction and it fit the use.						A		I		R									
All clauses and sub clauses of Gratings						A	C/I	I	R										R
Steel Grating, staircase and fixed ladders shall be inspected Annually using Attachment 8.01 YMS- SHEM-08.09-F-01.						A	C/I	I	R										R
YMS-SHEM-08.09-F-04 Temporary Removal Of Grating (Platform) & Guard Rail checklist to be used whenever grating removal is required. It shall be attached with unified work permit.						A	C/I	I	R	R									

Activity Description	Sponsor	OMS Leader	Dimension Chairman	EL, SHEM-08	SEL, SHEM-08.09	Area Owner / Department Sr. Managers / Managers	EHSS Sr. Manager / Manager	SHEM Administrator	Operation & Maintenance Supervisor	All Employees / Contractors	YANSAB contractor Supervisor	Scaffolding Inspector	Scaffolders	Scaffolding Supervisors	ERT	Rigging Supervisor	Shop Manager	Civil engineer	Inspector (Static Engineer/Specialist)
Design of suspended platforms (e.g. window washers) shall meet international standards (e.g. ANSI A10.4, A92.2, ASME B30.23) or local regulatory requirements. Risk assessment and EHSS Team approval for their use is required. Only certified personnel as per local requirements/site and following manufacturer's recommendations shall perform the task.				I	C/I		C/I	I	R	R						R	R		
Rope access devices, for example to be used during flare tasks, are designed by specialized companies to meet local requirements (International Rope Access Trade Association (IRATA), Society of Professional Rope Access Technicians (SPRAT) in USA or equivalent). Risk assessment and EHSS Team approval for use of rope access devices is required. Only personnel certified by IRATA (or equivalent) including IRATA (or equivalent) medical requirements are allowed to work on rope access tasks. All rope access work at YANSAB\ PET shall be supervised by an IRATA Level III Technician (or equivalent) (RATA Level III technicians are technicians who have demonstrated knowledge of advanced rigging and capable of conducting advanced rescue techniques.					C/I	A	C/I	I	R	R									

Activity Description	Sponsor	OMS Leader	Dimension Chairman	EL, SHEM-08	SEL, SHEM-08.09	Area Owner / Department Sr. Managers / Managers	EHSS Sr. Manager / Manager	SHEM Administrator	Operation & Maintenance Supervisor	All Employees / Contractors	YANSAB contractor Supervisor	Scaffolding Inspector	Scaffolders	Scaffolding Supervisors	ERT	Rigging Supervisor	Shop Manager	Civil engineer	Inspector (Static Engineer/Specialist)
When using alternative devices to scaffolds such as a 'cherry picker', mobile hydraulic platform, scissor platform or man lift etc. Approval process should developed guided by the following:				I	C/I	A	C/I	I	R	R						R	R		
Certificates of equipment inspections; certificate of training of operator, worker, medical fitness; job plan for the job considering maximum load, reach distance (horizontal), height (vertical), travel route, work location, emergency response, and communication; risk assessment and/or procedure based on manufacturer's manual. YMS-SHEM-08.09-F-06 Approval Process 'Cherry Picker', mobile hydraulic platform, Scissor platform or Man Lift to be done before the activity.				I	C/I	A	C/I	I	R	R						R	R		
Roof work is extremely hazardous and site shall mitigate fall hazards through fragile roofs or over edges by developing risk assessment and EHSS Team approval. If lifeline installation is required for full body harnesses, its selection, installation and use shall be approved by a competent Civil Engineer in agreement with the rigging specialist.				I	C/I	A	C/I	I								R	R	R	

Activity Description	Sponsor	OMS Leader	Dimension Chairman	EL, SHEM-08	SEL, SHEM-08.09	Area Owner / Department Sr. Managers / Managers	EHSS Sr. Manager / Manager	SHEM Administrator	Operation & Maintenance Supervisor	All Employees / Contractors	YANSAB contractor Supervisor	Scaffolding Inspector	Scaffolders	Scaffolding Supervisors	ERT	Rigging Supervisor	Shop Manager	Civil engineer	Inspector (Static Engineer/Specialist)
Mobile Elevated Working Platforms (MEWPs) may be used to perform work at height safely. Such devices require many additional control measures such as proper certification, (periodic) inspection, maintenance, training, etc. Further information and best practice guidance on the safe use of these devices can be found in attachment 8.15 YMS-SHEM-08.09-GL-02 mobile elevating work platforms: Mobile Elevating Work Platforms.				I	C/I	A	C/I		R	R						R	R		
All clauses and sub clauses of Working at height PPE						A	C/I	R	R	R							R		
All clauses and sub clauses of Training & Awareness					C/I	A	C/I	R	R	R									
Personnel responsible for the erection/inspection of scaffoldings shall be adequately trained in the safe work practices relating to the installation of the scaffolding in accordance with the following:				I	C/I	A	C/I				R	R	R						
Scaffolding inspector is certified from 3rd party.				I	C/I	A	C/I				R	R	R						
Working at height PPE				I	C/I	A	C/I			R									

Table 3.1 - Detailed RACI Matrix

4 REQUIREMENTS

4.1 General Requirement for Working at Heights

4.1.1 Effective fall prevention/protection programs include assessment of existing fall risks, implementation of appropriate fall protection controls and, where these are not feasible, use of fall arrest systems.

4.1.2 Where possible, design out the need to work at heights by implementing engineering controls to provide safe access (e.g. working platforms, walkways, and other fixed structures) or by bringing the task to ground level.

4.1.3 All equipment/tools used for working safely at heights (including all types of ladders) shall comply with the requirements of applicable local standards/regulations.

4.1.4 Every effort shall be made to install scaffold / structures with guardrails for working at heights using scaffold / structure or safety harness, scaffold or structures with guardrails shall be provided to work at a height of 1.8 meters (6 feet) or greater from the ground level. However, if scaffold or structure with guardrails cannot be provided then full body harness anchored to a permanent structure and shall be worn by personnel working at height.

4.1.5 Full body safety harnesses, lifelines, anchor connectors and lanyards shall meet the applicable local standards/regulations requirements. In the absence of any local standards/regulations, these shall be in accordance with the current NFPA Standard - 1983 'Standard on Life Safety Rope and Equipment for Emergency Services'. All working at height worker shall comply with ANSI Z359 or equivalent international standards for fall protection.

4.1.6 Guardrails used for fall protection shall provide protection against a minimum of 90 kg (200 lb.) force applied against them.

4.1.7 When there is a need to change anchor points, a double lanyard shall be used to achieve continuous fall protection (100 % tied-off).

4.1.8 Rescue plan shall be developed that ensures prompt rescue of persons working at high elevation to prevent suspension trauma (Harness stress on thigh resulted by fall from height) as per YMS-SHEM-P-08.10 Work Permits ,YMS-SHEM-08.10-F-12

4.1.9 All efforts shall be done to eliminate the need of Rescue plan. However, if control measure is not possible, then it is required :

4.1.9.1 When working on an inclined, fragile roof. (For example: central Maintenance Building, Workshops, and Warehouses).

4.1.9.2 On scaffold structure more than 12 meters or If worker is using harness as primary control measure then need of rescue plan will be determined by worker, area owner and EHS representative.

4.1.9.3 In the cradle of MEWP (mobile elevated working platform) or man lift

4.1.9.4 For workers who expected to fall into “safety net”.

4.1.10 Follow the manufacturers’ recommendations for the use and care of ladders.

4.1.11 Ensure that ladders are inspected prior to use to ensure they are in proper working condition.

4.1.12 All personal fall protective equipment shall be inspected visually by the user prior to each use. Any fall protection equipment damaged or has been suspected to have been subjected to shock or excessive load impact shall immediately be discarded and replaced.

4.1.13 If the anchor point is less than 5.6m (18.5 feet) from a hazard below, a self-retracting lanyard (SRL) should be used.

4.1.14 When working at height, workers should not work alone. Personnel working at height should be medically fit without any condition such as vertigo affecting their ability to safely work at height.

4.1.15 Selection of a fall protection method should consider exposure to other risks such as flash fire, product release or drowning and ensure egress is not hampered by fall protection.

4.1.16 All stairways and elevated work platforms, wall opening, work platform or walkway over 1.22 meters (4 feet) in elevation above ground level shall be provided with appropriately designed railings.

4.1.17 Lanyards and drop lines/lifelines attached to the Safety harness shall be secured. These shall be secured in a manner to limit falls to ≤ two feet (0.61 m) and must be capable to withstand a load of 2455 kilos (5400 lbs.)

4.1.18 Stairways and elevated work platforms and walkways shall have sufficient clearance to permit unobstructed passage for plant personnel.

4.1.19 Stairways and elevated work platforms shall be designed to carry the anticipated maximum anticipated live load including using the appropriate engineering safety factors for such structures. Stair treads shall be provided with a slip-resistant leading edge.

4.1.20 Structural and Miscellaneous Steel works shall comply with PIP STS05120 and STS05130.

4.1.21 All pipe railing shall be seal welded and be of adequate strength. It shall be capable of supporting at least 4 times the maximum intended load or Static Equipment engineer shall determine the strength suitable of intended use and shall comply with PIP STF05520 and STF05521.

4.1.22 While anchoring the drop line or lanyard to fixed anchorage point, following shall be considered:

4.1.22.1 Process pipelines should not be used as far as practicably possible. If it is unavoidable and pipeline has to be used its diameter should be at least 10 cm (4 inch) or larger. Insulated piping should be used if the piping size meets this requirement. Aluminum piping shall not be used.

4.1.22.2 10 cm (4 inch) or larger structural members can be used.

4.1.22.3 Elbows, tees and small-bore connection shall not be used.

4.1.22.4 In case of need, strength of pipeline or structure shall be evaluated by Static Equipment engineer prior to using it as an anchorage point to ensure that it satisfies the requirement in accordance with the definition of fixed anchorage point.

4.1.22.5 Surface temperature of the piping shall be given due considerations as lanyard and drop line made of nylon and polypropylene drop line may get damaged due to heat

4.1.22.6 Extreme cold temperature service piping shall not be use

4.1.22.7 Pipes that are supported by other pipes or by pipe hangers, aluminum piping, conduit, tubing, handrails, or angle iron shall not be used

Note: Endangering life of people, objects or create opening Falling From Height such as using of ladders, working in scaffolding, etc. are classified as Life Saving Rules (LSR) as per OMS 316.01 (SHEM-08.01) Regulations.

4.2 Lifting Personnel through Cages

4.2.1 Lifting of personnel with hanging cage for working at height shall be avoided as far as practicably possible. Use of all alternative means shall be carefully considered.

4.2.2 If the use of a cage for personnel lifting is unavoidable, only tested and certified cages operated by qualified person(s) shall be used for such activities.

4.2.3 Cages and slings shall have a valid third-party load testing certificate.

4.2.4 Cage working loads shall be assessed and legibly marked on a permanently attached plate.

4.2.5 The crane hook used for the cage shall have a safety latch.

4.2.6 All jobs shall be performed while standing on the cage floor. Cage railings shall not be used for standing purposes.

4.2.7 An appropriate and effective communication system shall be established between personnel in the cage and the supervisor at ground level.

4.2.8 Wind direction and speed shall be considered before and during the job. Work shall be stopped if wind speed exceeds 25 km/h / 15 miles per hour or as per manufacturer's guidance. Other weather conditions such as rain, heat and humidity shall also be considered.

4.2.9 Hoisting of personnel shall be performed in a slow, controlled and cautious manner on firm and level ground.

4.2.10 The area shall be barricaded or at least restricted for personnel not directly involved in the task.

4.2.11 All potential emergency situations e.g. failure of crane brakes, damage to process lines due to movement of hanging cages, should be identified and appropriate safety measures should be implemented.

4.2.12 Maintenance Workshop Manager shall approve the cage and slings before every such service using 8.4 YMS-SHEM-08.09-F-08 Lifting Personnel's Cage Inspection Checklist.

4.2.13 Cages should have a steel ring at the top for passing the sling or should have four steel rings at each top corner.

4.2.14 Cages should be fastened to the crane hook via a sling. If the cage has one steel ring at the center of the top, then one chain or steel sling should be used. If the cage has four rings, one at each corner, then four chains or steel slings should be used

4.2.15 Cage flooring should meet the applicable local standards/regulations requirements. In the absence of any local standard/regulation, it should have a raised pattern with a 6 mm (1/4 inch) nominal thickness.

4.2.16 Wall and floor of cages should be free from any protruding to avoid injury to the personnel

4.2.17 Cages should have a top railing with a vertical height of 1 meter (3.3 feet) from upper surface of top railing to the floor. It shall have intermediate railing halfway between the top railing and the floor

4.2.18 Cages should have the entrance from top with top rail completely closed (360o) or shall have a safety chain at the entrance and equipped with a proper latch type hook at its moveable end. The chain shall not hang excessively and the maximum deflection should not exceed 8 cm (3 inches). The safety chain at the cage entrance shall always be at the rear side of the person in cage

4.2.19 Cage toe plates shall be minimum 9 cm (3 ½ inch) high, securely fastened and with not more than 1.2 cm (½ inch) clearance above floor level

4.2.20 Cage Annual inspection and load testing at 1.25 times of the working load shall be carried out by certified third party and the date of testing shall be marked on the load indicating plate.

4.2.21 The sling used for lifting the cage shall be tested annually by certified third party at 1.25 times of the cage and working load

4.2.22 Full body Safety harness shall be used and it shall be tied to the crane hook through a sling

4.2.23 If the cage is to be raised more than 10 meters (33 feet) in height, two 1.2 cm (½ inch) diameter guy ropes shall be tied to the cage on either side, in order to prevent the swing action. These guy ropes shall be held by person(s) on the ground to control the swinging

4.2.24 If the cage is to be raised up to a height of 10 meters only, single guy rope may be used

4.3 Ladders & Staircases

4.3.1 Ground rules for a safe use of ladders

4.3.1.1 All efforts shall be done to avoid working at height, including use of ladders.

4.3.1.2 Ladders are tools to help users to reach from lower to higher elevation or vice versa. Whenever it is not justified to use alternative way of using ladders such as changing office lights, part of scaffolding, vertical entrance to confined space. Then inspected ladders can be used only by competent worker.

4.3.1.3 Read the safety information labels on the ladder, if manufacturer sticker is not available, then ladder shall not be used.

4.3.1.4 Users of ladders shall be trained on self-protection behaviors while using ladders.

4.3.1.5 Use of straight ladder/ extension ladders and step ladder for routine activities shall be through approved SMP/SOP/MOS which include clear EHSS consideration. For non-routine activities those activities shall be done through JSA.

4.3.2 General Requirements for All Types of Ladders / Stairs:

4.3.2.1 Internal Fabrication of ladders shall follow relevant ANSI and /or SABIC Engineering Standards.

4.3.2.2 All types of Step stools whether locally fabricated or resourced (where 3-point of contact cannot be maintained) are prohibited to be used at company premises.

4.3.2.3 Metal or wet ladders shall not be used near electrical equipment or while using electrical tools. Only non-conductive ladders shall be used near potential electric hazards

4.3.2.4 Always plan and manage work near electric overhead power lines so that risks from accidental contact or close proximity to the lines are adequately controlled. Never move ladders vertically near overhead power lines to prevent accidental contact and possible electrocution.

4.3.2.5 The ladder base shall be on a firm, level surface. Ladders shall not be leaned against unstable surfaces.

4.3.2.6 Ladders shall not be loaded beyond their maximum intended load or beyond their manufacturer¡¦s rated capacity.

4.3.2.7 Ladders shall not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental movement

4.3.2.8 While ascending or descending on ladders, the 3-point contact rule shall be followed. It means three points (out of the four i.e. hands and feet), shall always be in contact with the ladder during ascending or descending. Tools shall be carried in a tool belt and not in hands.

4.3.2.9 No ladder shall be ascended or descended by more than one person at a time.

4.3.2.10 Extending oneself from a ladder or working from a ladder in such a way that balance/stability is affected shall be avoided.

4.3.2.11 Rungs and steps shall be corrugated, knurled, dimpled, coated with skid resistant material or treated to minimize slipping.

4.3.2.12 The material from which the ladder is constructed is selected based on the environment in which it is being used, e.g. aluminum ladders shall not be used where there is a likelihood of contact with materials that chemically react with aluminum such as caustic liquids, damp lime or acids.

4.3.2.13 A personal fall arrest system is required when the climbing distance or fall potential exceeds:

- 6 m (20 feet) on uncaged fixed or scaffold ladders or portable ladders
- 9 m (30 feet) on caged scaffold or fixed ladders

4.3.2.14 Non-rigid (rope, cable, chain, webbing etc.) ladders are not permitted unless approved by the EHSS Team through a risk assessment as per YMS-SHEM-P-08.10. While using non-rigid ladders, fall protection such as self-retracting lanyards (SRL) should be considered.

4.3.2.15 Slip resistant feet should not be used as a substitute for exercising care when placing, lashing or holding a ladder upon slippery surfaces.

4.3.2.16 Ladders shall not be moved, shifted or extended while in use

4.3.2.17 The top portion of ladder shall protrude minimum at least 1.1 m (3.5 Feet) beyond the top support. Where this is impossible because of interference by the surroundings, a suitable hand grip in the form of an extension secured to one of the ladder side rails or to adjacent equipment should be made available

4.3.2.18 Barricades or guards are required if the ladder is set up in a crowded area. The area at the base of the ladder shall always be kept uncluttered

4.3.2.19 When placing ladders in close proximity to sprinkler systems, small bore pipes or other delicate or hazardous equipment where damage may be done, care should be exercised in the positioning of the ladder to avoid its contact with such equipment

4.3.2.20 Ladders should neither be used in a horizontal position as a platform, runway or scaffold nor be used as a brace, skid, gin pole, etc.

4.3.2.21 Ladders should not be tied together to provide longer sections. If they are designed for extended use, they shall be equipped with hardware fittings and adequate locking arrangement

Additional specific requirements for Step ladder, Mobile Ladders, Wooden Ladders, and Single (Straight) & Extension Ladders are included and explained in YMS-SHEM-08.09-GL-02 “ Safe Use of Ladders & General Safety Guidelines”

4.3.3 Fixed Ladder

Fixed Ladders shall comply with the following requirements:

4.3.3.1 Fixed Ladders and Cages B04-F01, ANSI A14.3 and PIP STE05501 should be followed for any design/modifying reference.

4.3.3.2 Fixed ladders shall be able to support at least two loads of 250 pounds (114 kg) each, concentrated between any two consecutive attachments.

4.3.3.3 Fixed Ladders should comply with the applicable local standards/regulations requirements. In the absence of any local standard/regulation, the requirements should be in accordance with the following:

4.3.3.4 Minimum perpendicular clearance between fixed ladder rungs, cleats, and steps and any obstruction behind the ladder shall be 7 inches (18 cm), except that the clearance for an elevator pit ladder shall be 4.5 inches (11 cm)

4.3.3.5 Individual rung/step ladders shall extend at least 42 inches (1.1 m) above an access level or landing platform either by the continuation of the rung spacing as horizontal grab bars or by providing vertical grab bars that shall have the same lateral spacing as the vertical legs of the ladder rails.

4.3.3.6 Each step or rung of a fixed ladder should be able to support a load of at least 250 pounds (114 kg) applied in the middle of the step or rung.

4.3.3.7 Minimum clear distances between the sides of individual rung/step ladders and between the side-rails of other fixed ladders shall be 16 inches (41 cm).

4.3.3.8 Fixed ladders should be used at a pitch no greater than 90o from the horizontal, measured from the back side of the ladder

4.3.3.9 Where the total length of a climb for fixed ladder equals or exceeds 24 feet (7.3 meters), fixed ladders shall be equipped with one of the following fall protection measure:

Ladder safety devices.

- Self-retracting lifelines, and rest platforms at intervals not to exceed 150 ft. (45 meters).
- A cage or well, and multiple ladder sections, each ladder section shall not exceed 50 feet (15 meters) length. Ladder sections shall be offset from adjacent sections, and landing platforms shall be provided at maximum intervals of 50 feet (15 meters)

Either of the above mentioned protection shall be provided even if the length of the climb is less than 24 feet (7.3 meters) but the top of the ladder is greater than 24 feet (7.3 meters) from the ground level.

4.3.4 Cages and wells for Fixed ladders:

4.3.4.1 Fixed Ladders and Cages B04-F01, ANSI A14.3 and PIP STE05501 should be followed for any design/modifying reference.

4.3.4.2 Provide yellow painting for the first and last rungs (steps) of the ladders as per HCIS – Safety and Fire Directives.

4.3.4.3 The inside of the cage shall be clear of projections

4.3.4.4 Wells shall completely encircle the ladder

4.3.4.5 Horizontal bands shall be spaced not more than 4 feet (1.2 meters) on vertical centers and fastened to the side rails of rail ladders or directly to the structure, building or equipment for individual-rung ladders

4.3.4.6 The top of the cage shall be a minimum of 42 inches (1.1 meters) above the top of the platform, or the point of access at the top of the ladder, with provision for access to the platform or other point of access

4.3.4.7 Adequate provisions shall be made to avoid falling of persons from one floor to another through landing access openings of cage ladders.

4.3.4.8 Cages should extend not less than 27 inches (68 cm), or more than 30 inches (76 cm) from the centerline of the step or rung (excluding the flare at the bottom of the cage), and shall not be less than 27 inches (68 cm) in width

4.3.4.9 Vertical bars should be spaced at intervals not more than 24 cm (9.5 inches) on horizontal centers and should be on the inside of the horizontal bands and should be fastened to them.

4.3.4.10 The bottom of the cage (wells) should be at a level of between 2.1 and 2.4 meters (7 to 8 feet) above the point of access to the bottom of the ladder. The bottom of the cage should be flared not less than 10 cm (4 inches) all around within the distance between the bottom horizontal band and the next higher band.

4.3.4.11 Inside faces of wells on the climbing side of the ladder should extend between 68 and 76 cm (27 to 30 inches) from the centerline of the step or rung.

4.3.4.12 Inside widths of wells should be at least 76 cm (30 inches).

4.3.4.13 Bottoms of wells above the point of access to the bottom of the ladder should be between 2.1 and 2.4 m (7 to 8 feet).

4.3.4.14 Ladder Safety Devices and Related Support Systems for Fixed ladders:

4.3.4.14.1 The connection between the carrier or lifeline and the point of attachment to the body belt or harness shall not exceed 9 inches (23 cm) in length.

4.3.4.14.2 In addition, ladder safety devices and related support systems on fixed ladders shall conform to the following:

- All safety devices shall be able to withstand, without failure, a drop test consisting of a 500-pound weight (225 kg) dropping 18 inches (41 cm)
- All safety devices shall permit the worker to ascend or descend without continually having to hold, push or pull any part of the device, leaving both hands free for climbing
- All safety devices shall be activated within 2 feet (61 cm) after a fall occurs and limit the descending velocity of an employee to 7 feet/second (2.1 m/sec) or less

4.3.4.15 A self-closing safety gate, in accordance with SES B04-F01.

4.3.4.16 Mobile Ladders:

Mobile Ladders shall comply with the following requirements:

4.3.4.16.1 Mobile ladders should be fitted with casters to facilitate mobility.

4.3.4.16.2 They should be provided with “Step lock” mechanism to hold ladder in place, when in use.

4.3.4.16.3 Mobile ladders should be used on hard level surfaces and not on sand or gravel.

4.3.4.17 Wooden Ladders:

Wooden Ladders should comply with the following requirements:

4.3.4.17.1 All wooden ladders will be of natural finish. Painting of ladders that may conceal cracks, chemical attack, wood or metal deterioration should not be allowed.

4.3.4.17.2 Wooden ladders may be sealed with clear materials that seals out moisture and other liquid but it must be transparent to aid inspection.

4.3.4.17.3 Wooden ladders should be stored where they are not exposed to excessive heat or dampness. When stored horizontally, the racks should provide enough support to prevent sagging.

4.3.5 Periodic Inspection of Ladders

4.3.5.1 A competent person shall inspect ladders for visible defects periodically (every one year) and after any incident that could affect their safe use. In addition to the formal inspections, employee should perform the inspection prior to using a ladder. Following should be included in the visual inspection:

4.3.5.1.1 Corrosion of metallic parts such as bolts, rivets, braces, screws, tie rods, brackets, etc.

4.3.5.1.2 Breakage and cracking on Fiberglass ladders

4.3.5.1.3 Splitting of side rails and rungs on wooden ladders

4.3.5.1.4 Loose rung to rail joints and tie-rod condition

4.3.5.2 Portable, Step & Mobile ladders shall be inspected every year by competent person. This shall be coordinated by unit/section Supervisor, and to maintain a record using attachment 8.2: YMS-SHEM-08.09-F-02 and attachment 8.1: YMS-SHEM-08.09-F-01 for fixed ladders, stairs and gratings once/year.

4.3.5.3 Attachment 8.13: YMS-SHEM-08.09-T-02 Ladder Tag Number Template shall be used in order to label the portable, mobile and step ladders.

4.3.5.4 Attachment 8.12: YMS-SHEM-08.09-T-01 Portable ladders Inspection Tag Template shall be used for labeling portable, mobile and step ladders.

4.3.5.5 Attachment 8.5: YMS-SHEM-08.09-F-05 Scaffolding Inspection Tracking Sheet shall be used to identify next checking cycle.

4.3.5.6 Attachment 8.17: YMS-SHEM-08.09-F-07 ladder Inspection Tracking Sheet shall be used to identify next checking cycle.

4.3.5.7 Defective ladders shall be withdrawn from service for repair or destruction and tagged “DANGEROUS, DO NOT USE” as per General EHSS rules YMS-SHEM-P-08.01 during inspection or any time defect been observed.

4.3.6 Stairways

Stairways shall comply with the following:

4.3.6.1 Fixed Industrial Stairs B04-F02 SES and PIP STF05511 shall be followed for any design/modifying reference. Stairways shall comply with the applicable local standards/regulations requirements. In the absence of such standards, regulations or requirements, stairways shall be designed, constructed, and maintained in a manner that minimizes the risk of injury to users.

4.3.6.2 Stairways Used during Construction\ temporary shall comply with the following requirements:

4.3.6.2.1 All temporary stairs and steps shall not be used until inspected through checklist by Inspection Engineer YMS-SHEM-08.09-F-09 Temporary Stairs Checklist

4.3.6.2.2 Stairways that will not be a permanent part of the building under construction shall have landings at least 30 inches deep and 22 inches wide (76×56 Cm) at every 12 feet (3.7m) or less of vertical rise.

4.3.6.2.3 Stairways shall be installed at least 30 degrees — and no more than 50 degrees—from the horizontal

4.3.6.2.4 Variations in riser height or stair tread depth should not exceed 1/4 inch in any stairway system, including any foundation structure used as one or more treads of the stairs.

4.3.6.2.5 Doors and gates opening directly onto a stairway should have a platform that extends at least 50 cm (20 inches) beyond the swing of the door or gate.

4.3.6.2.6 Metal pan landings and metal pan treads should be secured in place before filling.

4.3.6.2.7 Stairway parts should be free of dangerous projections such as protruding nails.

4.3.6.2.8 Slippery conditions on stairways should be corrected.

4.3.6.2.9 Workers should not use spiral stairways that will not be a permanent part of the structure. Spiral stairways is prohibited unless they are part of the permanent structure.

4.3.6.2.10 All treads and landings shall be replaced when worn below the top edge of the pan

4.3.6.2.11 Handrails are required on stairways having four or more risers, or rising more than 30 inches in heights, whichever is less

4.3.6.2.12 For Stairways used temporarily during construction (Except during construction of the stairway), Permit issuer shall ensure that:

- Stairways with metal pan landings and treads shall not be used if the treads and/or landings have not been filled in with concrete or other materials unless the pans of the stairs and/or landings are temporarily filled in with wood or other materials. All treads and landings shall be replaced when worn below the top edge of the pan.
- Skeleton metal frame structures and steps (where treads and/or landings will be installed later) shall not be used, unless the stairs are fitted with secured temporary treads and landings. Temporary treads shall be made of wood or other solid material and installed the full width and depth of the stair.

4.3.6.3 Stair Rails

4.3.6.3.1 Stairways with four or more risers or rising more than 30 inches (76 cm) in height— whichever is less—should be installed along each unprotected side or edge.

4.3.6.3.2 When the top edge of a stair rail system also serves as a handrail, the height of the top edge should be no more than 37 inches (94 cm) nor less than 36 inches (91.5 cm) from the upper surface of the stair rail to the surface of the tread.

4.3.6.3.3 Stair rail systems and handrails should be surfaced to prevent injuries such as punctures or lacerations and to keep clothing from snagging.

4.3.6.3.4 Ends of stair rail systems and handrails should be built to prevent dangerous projections, such as rails protruding beyond the end posts of the system.

4.3.6.3.5 Unprotected sides and edges of stairway landings should have standard 42-inch (1.1 m) guardrail systems.

4.3.6.3.6 Intermediate vertical members, such as balusters used as guardrails, should not be more than 19 inches (48 cm) apart.

4.3.6.3.7 Other intermediate structural members, when used, shall be installed so that no openings are more than 19 inches (48 cm) wide.

4.3.6.3.8 Screens or mesh, when used, should extend from the top rail to the stairway step and along the opening between top rail supports.

4.3.6.4 Hand Rails

4.3.6.4.1 Handrails and top rails of the stair rail systems should be able to withstand, without failure, at least 90kg (200 pounds) of weight applied within 5 cm (2 inches) of the top edge in any downward or outward direction, at any point along the top edge.

4.3.6.4.2 Handrails should not be more than 37 inches (94 cm) high nor less than 30 inches (76 cm) from the upper surface of the handrail to the surface of the tread.

4.3.6.4.3 Handrails should provide an adequate handhold for employees to grasp to prevent falls.

4.3.6.4.4 Temporary handrails should have a minimum clearance of 3 inches (8 cm) between the handrail and walls, stair rail systems and other objects.

4.3.6.4.5 Winding or spiral stairways should have a handrail to prevent use of areas where the tread width is less than 6 inches (15 cm).

4.3.6.5 Mid Rails

4.3.6.5.1 When mid rails are used, they should be located midway between the top of the stair rail system and the stairway steps.

4.3.6.5.2 Mid rails, screens, mesh, intermediate vertical members or equivalent intermediate structural members should be provided between the top rail and stairway steps to the stair rail system.

4.3.6.5.3 The mid-rails shall be continuous.

4.3.6.5.4 A toe-board shall be provided for elevated work platforms and walkways. The toe-board shall be made of a substantial material. The toe-board shall be securely fastened.

4.4 Scaffoldings

Scaffolding Supervisor shall ensure the following:

4.4.1 Scaffolding shall be designed to meet local standards or international standards such as ASSE A10.8, EN 12811.1 or equivalent.

4.4.2 Identify and eliminate or minimize all potential hazards during scaffolding activities (erecting, dismantling and using).

4.4.3 Scaffolding should be constructed only by 3rd party certified scaffolders.

4.4.4 Special duty scaffolding should be erected, altered, repaired and dismantled by a holder of appropriate certification.

4.4.5 The Red “Do not use” tag shall be placed by scaffolding contractor certified inspector at a prominent place (on access ladders) on the scaffolding during construction.

4.4.6 Scaffolders shall use full body harness in accordance with Personal Protective Equipment Procedure (YMS-SHEM-P-08.08) while erecting or dismantling scaffoldings.

4.4.7 Competent person shall inspect scaffold after construction and after any modification to the existing scaffolding. After inspection, the inspection tag 'Ready for Use' shall be signed and installed on the access ladder of the scaffolding. Weekly re-inspection shall be done.

4.4.8 Only those scaffolding that has a signed inspection tag indicating fit for use, shall be used.

4.4.9 Green tag shall be used whenever scaffold structure /guardrail is appropriate to prevent fall hazard. This condition does not require using full body harness

4.4.10 The green 'Ready for Use' tag shall be removed if any modification is to be carried out on the scaffolding. Permission for use of modified scaffolding shall only be given after re-inspection.

4.4.11 The Yellow 'Ready for Use' tag shall be used for scaffolding that cannot be used without wearing a harness,

4.4.12 Yellow tag shall be used whenever fall hazard is likely to take place whenever all guiderails (top/mid rails) or planks cannot be physically installed. .This condition require to use full body harness

4.4.13 All scaffold components shall be inspected physically before use to ensure safety and compliance with applicable requirements and practices. All damaged/worn-out/corroded components shall be discarded and replaced. Wooden planks shall not be used if there is a possibility of fire e.g. pyrophoric materials or high temperatures.

4.4.14 Posts, ledgers and bearers shall be attached, connected or fixed as required by the applicable local standards/regulations requirements. In the absence of any local standard/regulation, they shall be braced or fixed in accordance with one of the following fastening methods:

- Captive wedge system
- Quick fix system
- Cup lock system

Locking pin type scaffolding systems shall not be used. An example of locking pin type scaffolding is given in Attachment 8.11: Examples of Locking Pin Type Scaffolding.

4.4.15 Clearance between electrical powers lines/exposed energized electrical sources and scaffolds shall meet the applicable local standards/regulations requirements. In the absence of any local standard/regulation, it shall be in accordance with the following:

Voltage	Clearance
<300 volts (Insulated lines)	1 meter (3 feet)
300 volts to 50 KV(insulated lines)	3 meters (10 feet)
<50 KV (un-insulated lines)	3 meters (10 feet)
> 50 KV(insulated lines)	3 meters (10 feet) plus 10 cm (4 inches) for each KV above 50 KV
>50 KV(un-insulated lines)	3 meters (10 feet) plus 10 cm (4 inches) for each KV above 50 KV

Table 4.1 - Voltage and Clearance

4.4.16 While considering the clearance between electrical power lines and scaffolds, the height of the scaffolder/person working on such a scaffold requires consideration to create a safe work place for the employees.

4.4.17 Electrical tools used on scaffolds shall be equipped with Earth Leakage Circuit Breakers (ELCB) / Ground Fault Circuit Interrupters (GFCI), as per YMS-SHEM-P-08.05/08.07.

4.4.18 The uppermost work platform height shall not exceed 3 times the minimum base dimensions of any mobile scaffold used outdoors, and 3.5 times the minimum base dimensions for use indoors.

4.4.19 Foundations shall meet the applicable local standards/regulations requirement. All scaffolding shall be erected on a firm foundation. Scaffoldings can normally be built directly on concrete. Scaffolding built on asphalt requires a base plate, plywood or a plank to spread the load. All scaffoldings built on shale or firm soil shall have plywood pads or planking under the supporting legs.

4.4.20 Scaffolding shall not be erected without permission of Owner Area Supervision. The following should be considered and ensured by Area Owner Supervisor before permitting installation of scaffoldings

4.4.21 Establish and implement safeguards to protect machines, equipment's suspected to be affected by scaffolding activities, persons involved in scaffolding activities and other personnel working nearby

4.4.21.1 Identify and resolve temporary egress/access normal work activity restriction caused by the scaffolding.

4.4.21.2 Unwanted items should not be kept on the scaffolding platform.

4.4.22 Scaffolding Supervisor shall ensure that Scaffolding frames should be constructed of metal materials of known strength characteristics and should be capable of supporting the load as required by the applicable local standards/regulations requirements. In the absence of any local standard/regulation, it should be capable of supporting at least four times the maximum intended load.

4.4.23 Appropriate precautions distance (greater than 4.5 meters) of from hot surface should be taken while erecting, dismantling and working on scaffoldings near hot surfaces (temperature greater than 70o C). It is as protection against potential hazards like fire to scaffolding material, direct contact to hot surfaces by workers, radiation effect to employees, board shall not be in contact with hot line.

4.4.24 Designs for scaffoldings standing over 37 meters height shall be prepared, reviewed and approved by a qualified engineer.

4.4.25 Scaffoldings shall not be moved or altered horizontally while in use or occupied.

4.4.26 Frames and accessories for scaffoldings should be maintained in good condition. Any broken, bent, excessively rusted, altered or otherwise damaged frames or accessories should not be used. Locking devices shall be maintained in good working condition.

4.4.27 Scaffolding should not be used/ constructed/erected in case of storm or high wind speed in excess of 40 miles per hour (65 km/hr).

4.4.28 Standards should be pitched as required by the applicable local standards/regulations requirements. In the absence of any local standard/regulation, they should be pitched on 15 cm x 15 cm (6 inch x 6 inch) steel base plates. Joints in standards should be staggered, i.e. joints in adjacent standards should not occur in the same lift. All standards should be vertical.

4.4.29 Runners shall be erected along the length of the scaffolding at even height. Runners shall be interlocked to form continuous lengths and coupled to each post. Runners shall be placed not more than 2 m on centers.

4.4.30 Scaffolding should be properly braced as required by the applicable local standards/regulations. In the absence of any local standard/regulation, it should be braced by cross and/or diagonal bracing to square and align vertical members so that the erected scaffolding retains plumb, square, and maintains rigid alignment.

Where the height or length of the scaffolding exceeds 7.5 meters (25 feet), the scaffolding should be securely tied to a structure at intervals not greater than 7.5 meters (25 feet).

4.4.31 Bearers shall be installed transversely between posts and shall be securely coupled to the post bearing on the runner coupler.

4.4.32 Cross and longitudinal bracing shall be provided.

4.4.33 Bases of the scaffold should be at least 1.5 times the depth of excavation away from edges of excavation (including trenches), unless adequate precautions are taken to prevent collapse of the excavation and ensure integrity of scaffold foundation.

4.4.34 Screw jacks should be used to level scaffoldings. Makeshift shims of blocks of wood, bricks, or concrete should not be permitted.

4.4.35 The footing or anchorage for scaffolding should be capable of supporting the maximum intended load without settlement or displacement.

4.4.36 Where scaffolding is erected on a solid bearing such as rock or concrete, small timber pads should be used in place of sole plates to prevent the base plates striking off.

4.4.37 Guardrails and toe boards should meet the applicable local standards/regulation requirement. In the absence of any local standard/regulation, it should meet following requirement:

4.4.37.1 Guardrails and toe boards should be installed for work at more than 1.8 meters (6 feet) height to prevent falling of material/personnel.

4.4.37.2 Guardrails should not be less than 0.9 meters (3 feet) or more than 1 meter (3.3 feet) high. A mid-rail should also be installed.

4.4.37.3 Toe boards 2.5 cm x 10 cm (1 inch x 4 inch) lumber should be installed at all open sides on all scaffoldings more than 3 meters (10 feet) above the ground or floor. Toe boards should be a minimum of 10 cm in height

4.4.38 Self-closing safety gate shall be used for entrance from scaffold ladders to scaffold platform.

4.4.39 Ties

Scaffolding Supervisor shall ensure that Ties are in accordance with following requirements:

4.4.39.1 Scaffoldings, (with the exception of certain tower and mobile scaffoldings), be securely tied to the building or structure throughout their length and height to prevent movement of the scaffolding either towards or away from the building or structure.

4.4.39.2 Ties shall occur at least every 4 meters vertically. All tie assembly connections shall be made with 90 degrees load bearing couplers.

4.4.39.3 The scaffolding shall be tied up and securely braced against the building at intervals not to exceed 9 meters horizontally and 7.8 meters vertically.

4.4.40 Planking and Decking

Scaffolding Supervisor shall ensure that Planking and Decking are in accordance with following requirements:

4.4.40.1 All planking shall be Scaffolding Grade as recognized by grading of species of wood. The maximum spans for 5 cm x 23 cm or wider planks are as follows:

	Full Thickness	Nominal	Undressed Lumber	Thickness	Lumber
Working Load (PSF)	25	50	75	25	50
Permissible Span (m)	3	2	2	2	2

Table 4.2 - Planking Span

4.4.40.2 Metallic planking of approved grade and specification shall be used. While using metallic planking, special considerations shall be given to electrical hazards, in case live cables or equipment are located nearby the scaffold.

4.4.40.3 Scaffolding planks shall extend over their end supports not less than 15 cm. and more than 46 cm (18 inch) . Scaffolding planking shall be cleated at each end.

4.4.40.4 Planks should not be painted or treated in any way that would conceal defects

4.4.40.5 Planks that are split, decayed, or warped shall not be used, but the parts affected should be cut off to produce shorter planks with the ends banded or bolted through

4.4.40.6 All decking shall be a minimum of 2 cm construction grade plywood, clean and free of obvious defects such as cracks, knotholes, etc., and uncontaminated with chemicals, paint, concrete or other substances that may weaken the plywood

4.4.40.7 Plywood decking should be used to span an opening up to maximum width of 60 cm. The decking shall extend the full width of standard scaffolding planking 5 cm x 23 cm minimum, which shall be used for support

4.4.40.8 Decking should be kept free of unnecessary obstructions, materials, and projecting nails

4.4.40.9 Decking which has become slippery with oil or any other substance shall be sanded, cleaned, or otherwise treated as soon as possible

4.4.41 Mobile Scaffoldings

Scaffolding Supervisor shall ensure that Mobile Scaffolds should meet the applicable local standards/regulations requirements. In the absence of any local standard/regulation, it should be in accordance with following requirements:

4.4.41.1 In certain cases, small tower scaffoldings shall be fitted with casters with interlocking mechanism to facilitate mobility. They shall be used on hard level surfaces and not on sand or gravel.

4.4.41.2 Casters are always locked when the scaffolding is in use. Wheels or casters, not less than 13 cm diameter, and fitted with brakes which cannot be released accidentally, shall be securely fixed to the bases of the standards.

4.4.41.3 No person, tools, or equipment shall remain on the scaffolding when it is being moved.

4.4.41.4 An Access ladder should be provided from outside part of the mobile scaffolding.

4.4.42 Periodic Inspection of Scaffoldings

All scaffoldings shall be inspected as per applicable local standards/regulations requirements. In the absence of any local standards/regulations, the inspection should be in accordance with following requirements:

4.4.42.1 By competent person certified by 3rd party before first use

4.4.42.2 Daily physical inspection by users prior to every use

4.4.42.3 If scaffolding needs to be used for more than a week, it shall be re-inspected by competent person certified by 3rd party every week (7 days) and a new tag shall be displayed after rectifying the discrepancy, if any.

4.4.42.4 Main points to be checked are as follows:

4.4.42.4.1 Standards pitched on base plated and adequate timber sole plates. Correctly aligned and not damaged or displaced.

4.4.42.4.2 Correctly aligned and not damaged or displaced.

4.4.42.4.3 No undue deflection of ledgers.

4.4.42.4.4 Adequate and effective Ties and Braces.

4.4.42.4.5 Correct type of Couplers in use and properly tightened.

4.4.42.4.6 Sound, closely laid, and properly supported Planks.

4.4.42.4.7 Guardrails and Toe boards are installed.

4.4.42.4.8 Ladders are in good condition, properly supported and secured.

4.4.42.4.9 No evidence of chemical deposits or obvious deformities on all metal parts, periodic examination of welds for cracks or unused discoloration.

4.4.42.4.10 Periodic examination of welds for cracks or unused discoloration.

4.4.42.5 Scaffolding inspection filled checklist YMS-SHEM-08.09-F-03 shall be handed over by certified inspectors to the respective plant maintenance supervisor for maintain the records at least one year.

4.4.42.6 Scaffolding supervisor & inspector are having different roles and responsibility and their duties shall be separated.

4.4.42.7 Scaffolding Inspection Tracking Sheet YMS-SHEM-08.09-F-05 should be filled by YANSAB contractor supervisor in order to revalidate if require.

4.4.42.8 All work crewmembers that going to be use scaffolding shall confirm that there is no obstruction and it fit the use.

4.4.43 Access Ladders for Scaffoldings

Scaffolding Supervisor shall ensure that Access Ladders for Scaffoldings are in accordance with following requirements:

4.4.43.1 Ladders shall be structurally sound with no sharp edges, burrs, etc. Ladder shall be in accordance with the requirements of section 4.3 of this procedure.

4.4.43.2 Metal or wet ladders shall not be used near electrical equipment or while using electrical tools.

4.4.43.3 All scaffoldings shall be equipped with access ladders of sufficient strength to meet the requirements.

4.4.43.4 Access ladders shall not exceed 6 meters in length with the minimum width between side rails 0.3 meters. Rungs shall be 0.3 meters on center and shall be knurled, dimples, corrugated or treated to reduce slippage. Rungs shall be parallel and level when in position for use.

4.4.43.5 Rungs should be able to withstand a working load of 200 pounds.

4.4.43.6 Access ladders shall be installed with secure footings and shall be secured within 0.6 meters of the top and 0.6 meters of the bottom. Ladders longer than 3 meters will require additional securing at mid-point or as close to mid-point as practical. Material used in securing ladders shall be of sufficient strength for intended use. Ladders shall not be fastened together to provide longer sections and shall not be used for bracing, skid, guy pole or any use other than for which intended.

4.4.43.7 Openings on working platforms to access the ladder shall be appropriately barricaded to avoid the fall hazards.

4.4.43.8 Access ladders shall be maintained in good condition at all times and inspected prior to each use. Ladders shall be kept clean of oil and grease. Ladders with bent rungs or side rails or excessive deflection shall be taken out of service.

4.5 Gratings

4.5.1 Steel Grating, staircase and fixed ladders shall be inspected annually using Attachment 8.01 YMS- SHEM-08.09-F-01.

4.5.2 During the inspection walk, feel with your feet if a bouncy feeling or slide movement is noticed. This would indicate that grating clamps are not fastened properly.

4.5.3 Part of this inspections is to examine the condition, the sufficiency of bearing, the condition of support structures, bolts and the direction of span of all grating panels.

4.5.4 Inspect if the grating is not installed up-side-down.

4.5.5 Every clamp should be painted as follows:

Year	Color	Year	Color
2021	Blue	2024	Blue
2022	Black	2025	Black
2023	Green	2026	Green

Table 4.3 - Painting

4.5.6 The year color must be identical applied on the whole site. If a clamp failed the inspection criteria it should be, temporarily, painted in a different color. Preferably fluorescent orange RAL 2008.

4.5.7 When new pieces of floor grating are installed and approved during commissioning, then the applicable year color must be applied.

4.5.8 If floor grating is welded instead of clamped, then the year color need to be applied on all welds.

4.5.9 When defects are found during the inspection that cannot be solved right away, it is mandatory to mark the defect with a label, and if there is an immediate hazard, secure the area with warning tape, list the area in the inspection report and log an work order for maintenance.

4.5.10 Defects need to be marked with a fluorescent color orange RAL 2008.

4.5.11 Small defects, like missing clamps or bad welding, should be repaired right away if possible and reported in the inspection report.

4.5.12 When a new clamp is placed or a weld is repaired during inspection, the year color should be applied on these clamps or welds.

4.5.13 Inspect the grating floors on proper housekeeping (loose isolation parts, pieces of equipment, bolts, etc.) Maintain proper housekeeping after the inspection and/or repair.

4.5.14 After the inspection, inform the area responsible, log any defects for follow-up and file the report.

4.5.15 If floor grating (or parts of it) is opened for maintenance on piping, equipment or the grating floor itself, the grating must be inspected following the “grating panel floor and cage ladder checklist” YMS- SHEM-08.09-F-01 and the applicable year color should be applied.

4.5.16 Be very alert and never step on-to suspicious grating.

4.5.17 The personnel who check the gratings should use YMS-SHEM-08.09-GL-01.

4.5.18 YMS-SHEM-08.09-F-04 Temporary Removal of Grating (Platform) & Guard Rail checklist to be used whenever grating removal is required. It shall be attached with unified work permit.

4.5.19 Grating shall comply with PIP STE05530 and STF05530.

4.5.20 Vessel circular platforms shall comply with PIP STE05535 and STF05535.

4.6 Other Means of Working at Height

4.6.1 Design of suspended platforms (e.g. window washers) shall meet international standards (e.g. ANSI A10.4, A92.2, ASME B30.23) or local regulatory requirements. Risk assessment and EHSS Team approval for their use is required. Only certified personnel as per local requirements/site and following manufacturer's recommendations shall perform the task.

4.6.2 Rope access devices, for example to be used during flare tasks, are designed by specialized companies to meet local requirements (International Rope Access Trade Association (IRATA), Society of Professional Rope Access Technicians (SPRAT) in USA or equivalent). Risk assessment and EHSS Team approval for use of rope access devices is required. Only personnel certified by IRATA (or equivalent) including IRATA (or equivalent) medical requirements are allowed to work on rope access tasks. All rope access work at YANSAB\ PET shall be supervised by an IRATA Level III Technician (or equivalent) (RATA Level III technicians are technicians who have demonstrated knowledge of advanced rigging and capable of conducting advanced rescue techniques.

4.6.3 When using alternative devices to scaffolds such as a 'cherry picker', mobile hydraulic platform, scissor platform or man lift etc. Approval process should be developed guided by the following:

4.6.3.1 Certificates of equipment inspections;

4.6.3.2 Certificate of training of operator, worker, medical fitness;

4.6.3.3 Job plan for the job considering maximum load, reach distance (horizontal), height (vertical), travel route, work location, emergency response, and communication;

4.6.3.4 Risk assessment and/or procedure based on manufacturer's manual.

YMS-SHEM-08.09-F-06 Approval Process 'Cherry Picker', mobile hydraulic platform, Scissor platform or Man Lift to be done before the activity.

4.6.4 Roof work is extremely hazardous and site shall mitigate fall hazards through fragile roofs or over edges by developing risk assessment and EHSS Team approval. If lifeline installation is required for full body harnesses, its selection, installation and use shall be approved by a competent Civil Engineer in agreement with the rigging specialist.

4.6.5 Mobile Elevated Working Platforms (MEWPs) may be used to perform work at height safely. Such devices require many additional control measures such as proper certification, (periodic) inspection, maintenance, training, etc.

4.7 Working at Height PPE

4.7.1 Full body safety harnesses, lifelines, anchor connectors and lanyards shall meet the applicable local standards/regulations requirements. In the absence of any local standards/regulations, these shall be in accordance with the current NFPA Standard - 1983 'Standard on Life Safety Rope and Equipment for Emergency Services'. All working at height worker shall comply with ANSI Z359 or equivalent international standards for fall protection.

4.7.2 8.20 YMS-SHEM-08.09-F-10 Harness and Lanyard Inspection Checklist shall be used by end user and approved by his direct supervisor.

4.7.3 All harnesses shall be inspected by 3rd party annually or as per manufacturer guideline whichever is less.

4.7.4 All other working at height accessories and PPE's shall be inspected and the record of the inspection shall be kept. Inspection checklists is provided by manufacturer. Thorough inspection shall be by 3rd party. Inspection cycle shall follow manufacturer guideline.

4.7.5 In order to identify all working at height PPE 8.21 YMS-SHEM-08.09-F-11 working at height PPE list shall be used for numbering and tracking of inspection by each department.

4.8 Training & Awareness

4.8.1 Ladders:

4.8.1.1 Employees who use ladders in the performance of their duties shall be trained on the proper use, care and inspection of ladder before use.

4.8.1.2 All those who inspect ladders shall be trained to identify defects of ladders, as required in this procedure.

4.8.2 For Mobile Elevated Working Platforms (MEWPs). Shall comply with SHEM-08.06. Employees who are working on Mobile Elevated Working Platforms (MEWPs) shall be trained on the proper use, safety requirements and Hazard related to this activity.

4.8.3 Scaffoldings:

Personnel responsible for the erection/inspection of scaffoldings shall be adequately trained in the safe work practices relating to the installation of the scaffolding in accordance with the following:

4.8.3.1 The general requirements for safe installation of the type of scaffolding to be erected.

4.8.3.2 The safe work practices for the installation and dismantling of the type of scaffolding to be erected or dismantled.

4.8.3.3 The procedures for inspecting integrity of wood and metal structural members, including planking.

4.8.3.4 Personnel who use scaffolding shall be trained as per training matrix of YMS-OMS-P-131 to recognize obvious defects such as missing access ladder or handrails, damaged or loose planking, incorrect overlap of boards.

4.8.3.5 Scaffolding inspector is certified from 3rd party.

4.8.4 Working at height PPE:

The requirements for safe use of all type of working at height PPE.

4.9 Legal and Regulatory Requirements

All applicable local, national, and state/regional regulations and requirements and all international standards and treaties to which YANSAB subscribes are identified and listed in YMS-OMS-235.00-L-01 (List of Applicable Regulations) and has been included in YMS-OMS-P-235.00 & assessed for compliance as per YMS-OMS-P-232.00 procedures.

4.10 Control of Records

4.10.1 The record control requirements pertaining to this procedure are identified and described in accordance with Documentation & Control of Records procedure (YMS-OMS-P-234.00).

4.10.2 Following Documents & Record are to be maintained.

S/N	Record Description	Type	Location	Responsibility	Retention Period
01	Approved copy of procedure (YMS-SHEM-P-08.09) & attachments	Hard	Office of OMS Administrator	OMS Administrator	3 years
		Soft	Q-Pulse / YANSAB Portal	TQM Specialist	3 years
02	Editable copy of procedure & attachments (Word/Excel files)	Soft	Office of OMS Administrator	OMS Administrator	Current

Table 4.4 - Documentation (Procedure)

S/N	Record Description (Filled forms)	Type	Location	Responsibility	Retention Period
01	Grating Panel Floor, Fixed Ladder, Staircase and Cage Ladder Inspection Checklist (YMS-SHEM-08.09-F-01)	Hard	Office of Mech. Supervisor	Mech. Supervisor	3 Years
02	Ladder Checklist (YMS-SHEM-08.09-F-02)	Hard	Ladder Owner Office of SHEM Administrator	Ladder Owner	3 Years
03	Checklist for Erected Scaffolding (YMS-SHEM-08.09-F-03)	Hard	Office of Maint. Supervisor	Maintenance Supervisor	1 year
04	Temporary Removal of Grating (Platform) & Guard Rail Checklist (YMS-SHEM-08.09-F-04)	Hard	Office of Operation Supervisor	Operation Supervisor	3 years

S/N	Record Description (Filled forms)	Type	Location	Responsibility	Retention Period
05	Scaffolding Inspection Tracking Sheet (YMS-SHEM-08.09-F-05)	Hard	Office of Maint. Supervisor	Maintenance Supervisor	3 years
06	Approval Process to alternative devices to scaffolds (MEWP) (YMS-SHEM-08.09-F-06)	Hard	Respective Dept. Supervisor Office	Respective Dep. Supervisor	3 years
07	Ladder Inspection Tracking Sheet (YMS-SHEM-08.09-F-07)	Hard	Office of SHEM Administrator	Ladder Owner	3 years
08	Lifting Personnel's Cage Inspection Checklist (YMS-SHEM-08.09-F-08)	Hard	Garage Manager Office	Garage Manager	3 years
09	Temporary Stairs Checklist (YMS-SHEM-08.09-F-09)	Hard	Office of SHEM Administrator	Area Owner	3 years
10	Harness and Lanyard Inspection Checklist (YMS-SHEM-08.09-F-10)	Hard	Office of SHEM Administrator	PPE Owner	3 years
11	Working at Height PPE List (YMS-SHEM-08.09-F-11)	Hard	Office of SHEM Administrator	PPE Owner	3 years
12	Rescue Plan (YMS-SHEM-08.09-F-12)	Hard	Office of Shift Supervisor	Area Owner	3 years

Table 4.5 - Implementation Record

5 COMPETENCY

5.1 YANSAB shall develop a competency matrix in accordance with Training & Competencies procedure (YMS-OMS-P-131.00). The key skills and knowledge required to successfully implement this procedure are identified below.

5.2 The criteria for the proficiency levels (D/P/A) is defined in YMS-OMS-P-131.00 (Training & Competency Procedure).

Competency	Type	Executive Management	Senior Management	(Sub-) Element Leader	(Plant) Line Management	EHSS Senior Manager	Maintenance Employees	Operations Employees	Third party Employees
Safely working at heights		D	D	A	D	D	A/D	A	A/D
Perform inspections on relevant equipment		P	P	A	D	D	A/D	P/D	A/D

Table 5.1 - Competency Matrix

Competency Types: Core, Leadership, Functional

Proficiency Levels: D Developing, P Proficient, A Advanced

6 CONTINUAL IMPROVEMENT

6.1 To promote continual improvement in the application of this procedure, appropriate processes, measures and key performance indicators (KPI) are defined to assess performance in line with Performance Management procedure (YMS-OMS-P-211.00).

Verification Measures	KPI	Verification Mechanism
Ensure Scaffolders are certified for erecting scaffoldings	100%	Monitor twice per year & Verify all Scaffolders are certified
Annual inspection of cages by 3rd party (certified)	100%	Monitor twice per year & Verify all cages are certified
% Reduction in category A,B,C and D of incidents for this procedure on yearly basis	[1 - {No. Of EHSS Incident A,B,C,D (Current Year) / No. EHSS Incident A,B,C,D (Previous Year)} * 100]	Calculate the percentage of reduction in incidents compared to previous year
Employees trained on working at height	No. of Trained / No. of Employee Planned) * 100	Calculate the number of employees successfully completing trainings

Table 6.1 - Key Performance Indicators

6.2 A rhythm to review performance against this procedure is established and the results of these reviews shall be used as input to the YANSAB Continual Improvement Plans in accordance with Continual Improvement Framework procedure (YMS-OMS-P-511.00).

6.3 Statistical tools shall be used to analyze the performance of this OMS procedure in accordance with Process and Continual Improvement Methodologies, Problem Solving Tools & Techniques procedure (YMS-OMS-P-521.00).

6.4 Performance improvement, as well as any associated corrective and preventive actions shall be documented and tracked then communicated appropriately to YANSAB personnel and stakeholders on a regular basis.

7 REFERENCES

7.1 Links with Other OMS procedures

Input	Interface / link	Output
YMS-OMS-P-111.00	Leadership Commitment and Culture	YMS-SHEM-P-08.09
YMS-OMS-P-131.00	Request for identification and communication of the necessary training requirements related to this OMS procedure	YMS-SHEM-P-08.09
YMS-OMS-P-122.00	Objective setting and Sub-element Leader responsibilities Formation of relevant (sub-)committees and periodic meetings	YMS-SHEM-P-08.09
YMS-OMS-P-231.00	Management system development guidelines Clarification, variance and exemption process to be followed	YMS-SHEM-P-08.09
YMS-OMS-P-232.00	Compliance assessment expectations	YMS-SHEM-P-08.09
YMS-OMS-P-234.00	Documentation and record keeping requirements	YMS-SHEM-P-08.09
YMS-SHEM-P-08.00	Minimum expectations for the Sub-element Leader on updates, action follow up, communication and reporting	YMS-SHEM-P-08.09
YMS-SHEM-P-08.08	PPE requirements	YMS-SHEM-P-08.09
YMS-SHEM-P-08.09	Communicate identified training requirements for this sub-element	YMS-OMS-P-131.00
YMS-SHEM-P-08.09	Communicate all requested data/information for alignment within SHEM 08.00 committee	YMS-SHEM-P-08.00
YMS-SHEM-P-08.09	Communicate minimum requirements regarding climbing and access to elevated locations	YMS-SHEM-P-08.03 YMS-SHEM-P-08.10
YMS-SHEM-P-08.09	Send reported incidents for overall program improvement opportunities	YMS-SHEM-P-10.00
YMS-SHEM-P-09.00	MOC process to be followed in case of changes	YMS-SHEM-P-08.09
YMS-SHEM-P-10.00	Identification of Class A, B and C incidents related to working at height	YMS-SHEM-P-08.09

Table 7.1 - Interfaces and Linkages

7.2 Glossary, Formulae & Definitions

http://SABICportal.SABIC.com/COMMITTEES/EHSS/Lists/SHEMS%20Glossary_Formulae_Definitions/SHEMS_Glossary_0809.aspx

7.3 Other References

1 NFPA 1983 – Standard on Life Safety Rope and Equipment for Emergency Services

2 OSHA 29 CFR 1910.66 – Powered Platforms for Building Maintenance

3 OSHA 29 CFR 1926.451 – Scaffolding: Construction Standards-Subpart L

4 OSHA 29 CFR 1926 – Subpart X

5 OSHA Publication 3124 - 12 R 2003 – Stairways and Ladders

6 ANSI A10.4 – Safety Requirements for Workmen's Hoists

7 ANSI A10.8 – Safety Requirements for Scaffolding

8 ANSI A92.2 – Vehicle Mounted Elevating and Rotating Work Platforms

9 ASME B30.23 – Personnel Lifting Systems

10 ASTM A500 Grade B

11 ASTM A53 Grade B Carbon Steel Alloy Specification

12 BS 1139, Part 1, Section 1.1

13 BS EN 12811-1:2003

14 BS 2482: 2009 – Specification for Timber Scaffold Boards

15 EN 10219.1: (2006)

16 EN 10219.2: (2006)

17 EN 39: 2001 – Loose steel tubes for tube and coupler scaffolds. Technical delivery conditions

18 BS EN 74-1:2005. Couplers, spigot pins and baseplates for use in false work and scaffolds. Couplers for tubes. Requirements and test procedures

19 BS EN 74-2:2008. Couplers, spigot pins and baseplates for use in false work and scaffolds. Special couplers. Requirements and test procedures

20 BS EN 74-3:2007. Couplers, spigot pins and baseplates for use in false work and scaffolds. Plain base plates and spigot pins. Requirements and test procedures

21 GSO 217/1994 - Industrial Safety and Health regulations – Part 6: Equipment - Scaffolding

22 OSHA 29 CFR 1910.28 - Duty to have fall protection and falling object protection.

23 OSHA 3150, 2002 (Revised) – A Guide to Scaffold Use in the Construction Industry

8 APPENDIX

8.1 Attachments

S/N	Reference	Description
01	YMS-SHEM-08.09-F-01	Grating Panel Floor and Cage Ladder Inspection Checklist
02	YMS-SHEM-08.09-F-02	Ladder Inspection Checklist
03	YMS-SHEM-08.09-F-03	Checklist for Erected Scaffolding
04	YMS-SHEM-08.09-F-04	Temporary Removal of Grating (Platform) & Guard Rail Checklist
05	YMS-SHEM-08.09-F-05	Scaffolding Inspection Tracking Sheet
06	YMS-SHEM-08.09-D-01	Pedestal Scaffolding
07	YMS-SHEM-08.09-D-02	Mobile Scaffolding
08	YMS-SHEM-08.09-D-03	Scaffolding Parts
09	YMS-SHEM-08.09-D-04	Wood Planks Defects
10	YMS-SHEM-08.09-D-05	Working at Height Diagrams
11	YMS-SHEM-08.09-D-06	Examples of Locking Pin
12	YMS-SHEM-08.09-T-01	Ladder Inspection Tag Template
13	YMS-SHEM-08.09-T-02	Ladder Tag Number Template
14	YMS-SHEM-08.09-GL-01	How to Use Grating Checklist
15	External Document	New Zealand Mobile Elevating Work Platforms
16	YMS-SHEM-08.09-F-06	Approval Process 'Cherry Picker', Mobile Hydraulic Platform, Scissor Platform or Man Lift
17	YMS-SHEM-08.09-F-07	Ladder Inspection Tracking Sheet
18	YMS-SHEM-08.09-F-08	Lifting Personnel's Cage Inspection Checklist
19	YMS-SHEM-08.09-F-09	Temporary Stairs Checklist
20	YMS-SHEM-08.09-F-10	Harness and Lanyard Inspection Checklist
21	YMS-SHEM-08.09-F-11	Working at Height PPE list
22	YMS-SHEM-08.09-GL-02	Safe Use of Ladders & General Safety Guidelines

General:

- Drawings, diagrams, descriptions and explanations necessary for use, maintenance, repair and functional checking of the equipment and its accessories are readily available with the HPWJ contractor.
- The HPJW contractor supervisor ensures that the equipment shall be suitable and safe for the intended method/technique and use. In addition, he shall be responsible to inspect and maintain HPWJ equipment in order to detect and address any potential issues.
- HPWJ equipment shall be transported, assembled, used, dis-mantled, maintained, serviced, tested, inspected and repaired as per manufacturer's instructions.

Drive:

- Drive used is generally diesel; other drives available are electric, gas or gasoline.
- All equipment, controls, accessories shall follow hazardous area classification and work permit requirements; Use of gasoline driven equipment are not allowed in process areas.
- Drive and its accessories shall be protected from ingress of water
- Ensure correct rotation of motor before start.
- The HPJW contractor supervisor ensures that the equipment and accessories are checked daily for damage & safe working, as per manufacturer's guidelines and industry best practices.

Pumps and controls:

- Pumps are designed to deliver required high pressure water to the outlet connector.
- They shall be equipped with adequate inlet filtration, operating pressure indicator and shall be equipped with a pressure relief safety device, which shall be set at the pressure level recommended by manufacturer.

Maximum working pressure control:

- All systems and assemblies shall have a safety device which prevents the permissible pressure (of the lowest rated component) from being exceeded by more than 15 %.
- All safety relief devices shall be capable of passing the full flow of the pump to which they are fitted without significant pressure rise.

- Following are examples of Pressure relief safety devices commonly used:
  - Electronic over pressure shut down
    - The pressure at which the unit will shut down shall not be adjusted by operator and shall only be changed by manufacturer or a competent person.
    - It shall be checked & calibrated annually.
    - If OVER PRESSURE is sensed, the pump unit will shut down and the "Over pressure shutdown" alarm will be displayed.

  - Bursting Disc
    - They are designed to rupture at a given pressure; Once reason for failure is removed, discs are replaced as per manufacturer's instructions. E.g. blocked nozzle can cause burst disc rupture.
    -

Color of Burst Disc	Working pressure	Burst Pressure
Red	2000 psi (138 Bar)	2300 psi(160 Bar)
Green	3000 psi (200 Bar)	3450 psi(240 Bar)
White	4000 psi (275 Bar)	4600 psi(320 Bar)
Black	5000 psi (345 Bar)	5750 psi(400 Bar)
Orange	6000 psi (415 Bar)	6900 psi(475 Bar)

  - Spring loaded Pressure Relief Valve (Manual or Automatic resetting):
    - The setting of the relief pressure shall be tagged on valve body and setting kept tamper proof.
    - Relief setting shall be checked and reset as per manufacturer's recommendations (typically annually) and all records are maintained.
  - Air Operated Safety Relief Valve:
    - A diaphragm or piston (preset air pressure) holds the valve closed against the high pressure water.
    - Relief setting shall be checked and reset as per manufacturer's recommendations (typically annually) and all records are maintained.

Jetting unit:

- Jetting unit may be trailer mounted, vehicle or skid mounted and enclosed by an acoustic canopy as appropriate.
- The drive and pump may be mounted within the jetting unit and it may incorporate all controls, instruments and gauges plus hose and accessory storage as required.

Hose Assembly:

- Hoses shall conform to BS EN 1829-2 (Operating pressures $\geq$ 350 bar) and BS EN ISO 4413 (Operating pressures < 350 bar).
- Re-ending of previously, used hoses are prohibited.
- Water jetting Hoses shall have a unique reference number stamped or engraved onto the fitting with the following information Maximum working pressure, Date of manufacture, Name of manufacturer, Traceability.
- A test certificate shall be provided for audit when required for each hose assembly showing Manufacturer/assembler name, test date, test pressure, unique reference number.
- HPWJ supervisor shall perform visual inspection of hose/hose assembly prior to use (Minimum daily)
- Burst protection sleeves (hose shroud) shall be used when the hose connects to a hand held device and should be long enough to offer protection to the operator in eth event of a hose failure or leak at the connection.
- Hose restraining devices of the correct rating shall be used as protection against coupling failure.

Lances:

- Lances are available for use manually or in conjunction with a powered lance-handling device.
- Nozzles for use with flexi lances may be conventional or of the rotary type and shall generate more or equal thrust from the rearward (propulsion) or cleaning jets than forward (cutting) jets.
- Rigid and flexible lances/nozzles designed for use in a powered system shall never be operated manually.

Control Valves:

- **Adjustable Pressure Control Valve:**
  - This valve is designed to dump to atmosphere or recycle excess water from a high-pressure pump that would otherwise cause overpressure with a given nozzle and or engine speed.
  - Spring loaded are manually controlled and pneumatic/ hydraulic which can be remotely controlled.
  - This can unload the system pressure, **but are not considered as safety devices.**
- **Automatic Pressure Regulator (unloader valve):** For use with dry shut guns & Accessories
  - This device (may be integral with pump assembly) is used to regulate water pressure from the pump and can be individually set for each operation. At set pressure, it allows releasing a preset proportion of the generated flow back to the pump suction chamber or to waste.
  - This type of device maintains residual high pressure water between the unloading valve and the jetting gun. The jetting gun shall be activated immediately after the jetting unit is switched off to release the residual pressure.
  - All HPWJ units used with a dry shut jetting gun shall be fitted with an unloader valve.
  - When this valve is used in systems with a maximum working pressure exceeding 207 barg (3000 psi) a safety relief device shall also be fitted. In these cases the unloader valves set working pressure shall not exceed 90 % of the safety relief device setting.

- **Diverter/ selector valve:**
  - This is a three port valve mounted on the jetting unit which, by manual or remote control, divert the water flow from the high pressure outlet to recycle via the header tank and allows system pressure to drop to zero.

- **Electro Pneumatic Jetting Gun Controls:**
  - This system enables the gun operator to control the power supplied to the jetting gun by means of a low voltage (armored) cable or pneumatic line to the jetting unit.
  - On depressing the trigger the pump unit is brought on load and the engine speed controlled by a pre-set electro pneumatic / mechanical control or computer controlled throttle.

- There shall be no significant delay between the release of the trigger and system pressure dropping to zero.
- Sudden reaction force can be generated with these types of jetting guns, but shall not exceed 250 Newtons (25 Kgs) in the longitudinal direction.
- When several guns are fitted to the same system, the recoil forces exerted on the other guns should not change abruptly or by more than 15 % at any time.

Accessories:

- Jetting guns (Dump type):
  - These have three-port valve assembly with one inlet and two outlet ports.
  - One of the outlet ports will be fitted with a high-pressure barrel the other will be a low-pressure dump outlet, which may be fitted with a diffuser.
  - Jetting gun will be controlled by a trigger. A trigger guard shall be provided and a lock-off device fitted to avoid accidental operation.
  - Shoulder stocks and secondary grips provided by manufacturer should be used.

- Jetting guns (Dry shut-off type):
  - These have two-port valve assembly with one inlet and one outlet port.
  - The outlet port will be fitted with a high-pressure barrel.
  - Jetting gun will be controlled by a trigger. A trigger guard shall be provided and a lock-off device fitted to avoid accidental operation.
  - Shoulder stocks and secondary grips provided by manufacturer should be used
  - When the pump is switched off, care shall be taken to release system pressure between the pump and jetting gun by depressing the trigger.
  - Sudden reaction force can be generated with these types of jetting guns, but shall not exceed 250 Newtons (25 Kgs) in the longitudinal direction.
  - When several guns are fitted to the same system, the recoil forces exerted on the other guns should not change abruptly or by more than 15 % at any time.
- Foot Control Valves (Dump type):
  - These have three-port valve assembly with one inlet and two outlet ports.
  - One of the outlet ports will be arranged to supply high-pressure water to the required accessory and the other will be a low-pressure dump outlet.
  - Controlled by a foot pedal, which can be depressed with minimum effort and protected against accidental operation by an adequate shield.

- The assembly shall be mounted in a frame capable of providing stability during operation.
- When a hose is fitted to the dump port this shall be secured to prevent hose whip when the foot pedal is released.

- **Foot Control Valves (Dry shut type):**
  - These have two-port valve assembly with one inlet and one outlet port.
  - The outlet port will be arranged to supply high-pressure water to the required accessory.
  - Controlled by a foot pedal, which can be depressed with minimum effort and protected against accidental operation by an adequate shield.
  - The assembly shall be mounted in a frame capable of providing stability during operation.
  - When a hose is fitted to the dump port this shall be secured to prevent hose whip when the foot pedal is released.
  - When the pump is switched off, care shall be taken to release system pressure between the pump and dry shut foot control valve by depressing the foot pedal. Take care to restrain components downstream which may take the pressure transferred i.e. Dry shut gun
- **Nozzles (for use with jetting guns):**
  - The nozzle is fitted to the gun's high pressure barrel.
  - The function of a water jetting nozzle is to convert the latent energy (high pressure) into Kinetic energy (high velocity).
  - Nozzles shall always be fitted correctly without leaks and using correct spanners (wrenches or damaged spanners shall not be used)
  - There are different type of nozzle:
    - Fixed Orifice Nozzle (Forward facing) providing a wide range of jet configurations
      - Rotary jets range in type from single orbiting jet to multi orifice rotary assemblies
      - Nozzle size should be selected with regard to the maximum operating pressure and flow of the system and the nozzle reaction force likely to be generated
      - Rotary nozzles may be self rotating, powered by air or by a hydraulic motor
      - Nozzle material & inserts shall be selected and fitted as per manufacturer's instruction and shall be certified for the pressure to be used.

- Rotary nozzles are known to suffer stoppages of the rotary function. No attempt shall be made to clean or repair these or any other nozzle until the jetting unit is switched off and the pressure stored in the system is released.

- Nozzles (For use with lances and hoses)
  - Primarily intended for tube, pipe and drain cleaning/descaling and are available in fixed or rotating versions.
  - The jet configuration shall be carefully selected in relation to the duty required and operating safely.
  - When using nozzles with forward facing jets care shall be taken to ensure there is always a greater power exerted by the rear facing jets.
- Nozzles (Fixed Installations)
  - Generally used for internal cleaning/descaling of process containers, storage and transportation tanks.
  - Since this configuration operates for long periods, special care shall be exercised in routing hoses, the erection of barriers and danger signs.
  - When using nozzles with forward facing jets care shall be taken to ensure there is always a greater power exerted by the rear facing jets.

- Surface Preparation tools:
  - Conventional rotary nozzles are fitted to jetting gun or alternatively special purpose devices for coating removal prior to recoating or undertaking Non Destructive Testing (NDT).
  - They may be hand operated or powered and mounted on a hydraulic arm or remotely controlled.
  - Consideration to be given to use these tools in conjunction with a vacuum recovery system.
- Rotating Hose (pipe cleaning rigs) :
  - These are specially designed assemblies or equipment used in cleaning/descaling of pipes in which the entire hose assembly is rotated and powered into the pipe which requires cleaning.
  - This equipment is designed for use with high power pumps and shall only be used by specially trained personnel.

- Abrasive Jet cutting :
  - All abrasive water jet cutting operations are undertaken using remote control automatic/semi-automatic equipment that allows operator remain at a safe distance.
  - In venture injection method comprises of a mixing head and nozzle assembly, abrasive supply hose and an abrasive (dry or slurry form) container.
  - In direct injection method, water and abrasive are mixed in a pressure vessel and carried to the cutting head in a single hose under pressure
  - MSDS of Abrasives and wastes generated shall be evaluated and silica free material to be sued.
  - Pressure components of appropriate rating shall be used
  - Personnel using the cutting shall be trained in the specific machine and method.
- Inspections :

  Only competent persons shall carry out the following and records shall be maintained :

Description	Max. Frequency
Servicing of all components making up the jetting unit	As per Manufacturer's recommendations
Pressure relief valve inspection, maintenance and resetting	Six monthly or at pre-delivery inspections
Pressure control/unloader valves servicing	Six monthly or at pre-delivery inspections
Safety guns and foot operated control valves	Six monthly or at pre-delivery inspections
Rotary nozzle assemblies (All types)	Three monthly or at pre-delivery inspections
Inspection/ replacement of all fluid retaining components including connectors and couplings	Six monthly or at pre-delivery inspections

Reference:

Code of Practice(COP) for the use of high pressure and ultra-high pressure water jetting equipment from The Water Jetting Association (WJA), UK (2021) www.waterjetting.org.uk

Doc .No: YMS-MPL-GL-4001	YANSAB MANAGEMENT SYSTEM	
Rev.: 00		
Date: SEP 2022	HIGH PRESSURISE WATER JETTING (HPWJ) DO'S AND DONT'S - GUIDELINES	
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The following are the basic safety features to allow HPWJ to be performed safely, but not limited to...

DO's
• Undertake a formal JSA for all HPWJ activities and provide a Technical specification • Contact the HPWJ authorizing person on the plant, obtain necessary permits followed by YANSAB work permit Procedure YMS-SHEM-P-08.10 (YMS-OMS-P-316.10) Unified Work permit and note special precautions. • Erect barriers/tape off the working area at the safe distance and erect warning signs. • Ensure that the water supply is adequate • Check fluid levels on engine, gearbox and pump (lubrication oil, fuel and water) • Lay out equipment and visually inspect it for damage (hoses, connections etc.), ensure all equipment is suitably earthed. • Assemble equipment, checking all joints and ensuring whip restraint devices are fitted • Ensure filters are clean. • Fully prime equipment and bleed where necessary. • Fit guns, lances and control valves correctly; visually check that correct size, type of nozzle and fittings are correct for the application. • When cleaning of heat exchanger tubes, with long lance equipment always ensure a colored tape marker or similar is fixed on the lance at 1 meter from the nozzle tip, in order to alert the operator to release pressure before completely withdrawing the hose from the tube on the return path. • Increase pressure slowly until operating conditions are reached. • Re-check hose couplings and joints for leaks. • Rectify all leaks ensuring that the unit is shut down and line pressure released before making any adjustments. • Ensure that all operatives are wearing required PPE (as specified on the work Permit and as required by the JSA). • Regularly rotate team members' positions to minimize fatigue. • Regularly check operating conditions (oil, water pressure, condition of filters, pipe work, and hoses) • Ensure that all pressure in lines is released on any shutdown. • On completion strip down equipment and store in a clean condition. • Clear the site of barriers, warning signs and debris to the satisfaction of the Permit Issuer • On completion sign off all permits

Doc .No: YMS-MPL-GL-4001	YANSAB MANAGEMENT SYSTEM	
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DONT's
• Commence work on site without the necessary permission and permits. • Commence any jetting operation until warning signs are on show and the area is roped off. • Operate without required PPE for eyes, head, ears, hands, feet and body. • Run any equipment with any leakage whatsoever without rectifying the problem. • Attempt to tighten any pressure joint whilst equipment is under pressure e.g. hose coupling, lance, nozzle tightening adjustments • Bypass safety cut outs. • Fail to check the reasons for ANY malfunction. (Low water, blocked filters, low oil level etc.) • Operate with guns and control valves not meeting requirements or functioning correctly (failing to shut off or leaking). • Operate guns or control valves with the operating lever tied back, wedged or locked in the "ON" position. • Operate with badly worn or undersize nozzles. • Continue to operate if any unauthorized personnel enter the operating area. • Operate equipment at power levels which can produce a reaction force greater than the operative can comfortably absorb. • Leave equipment running unattended. • Leave equipment unattended on site. • Store unserviceable equipment . • Leave the site in a dangerous or untidy condition. • Leave site without notifying the work Permit issuer and signing off the Permit for the work.

Environmental Management and Monitoring Plan Report

For the Project of

Retired Assets Dismantling, Demolition, Excavation, Removal and Disposal of the Arabian Industrial Fibers Company (IBN RUSHD) in Yanbu Industrial City

Prepared By: ARM Associates

Prepared For: IBN RUSHD

31 January 2023

Report Title	Environmental Management and Monitoring Plan for IBN RUSHD
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Mark Saeger

Director Environment Division

Disclaimer

ARM has prepared the present Report for the exclusive use of IBN RUSHD hereinafter referred to as the Client and in compliance with the contract under which ARM provided their services. These services have been performed with due diligence and no other warranty express or implied may be inferred from the professional advice given by ARM. No person except the Client may make use or base himself on this Report without prior and express consent in writing from ARM. Unless specified in some other manner within this Report, the assessments and judgements set forth herein assume that the establishment and facilities involved shall continue being made use of for the present purposes without significant changes.

The conclusions and recommendations contained in the present Report are based on information provided by third parties. Unless otherwise specified the information obtained from those third parties has not been independently verified by ARM.

In those instances where field research has been conducted the research has been restricted to the level of detail appropriate for achievement of the aims set forth in the contract.

Released for Issue, 31 January 2023

Mark Saeger

Director Environment Division

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Acronyms

Abbreviation	Definition
ARM	ARM Associates Consulting Company
DEMP	Demolition Environmental Management Plan
EHSS	Environment, Health, Safety, and Security
EMMP	Environmental Monitoring and Management Plan
EPCD	Environmental Protection and Control Department
KSA	Kingdom of Saudi Arabia
MSDS	Material Safety Data Sheet
NCEC	National Center for Environmental Compliance
NCWCD	National Commission for Wildlife Conservation & Development
PPE	Personal protective equipment
RC	Royal Commission
RCER	Royal Commission Environmental Regulations 2015
SEP	Stakeholder Engagement Plan
SLO	Stakeholder Liaison Officer
WMF	Waste Management Facility
WWTP	Wastewater Treatment Plant
YIC	Yanbu industrial City
Units of Measure	
km/h	Kilometer per hour
L	Liters
m/s	Meters per second
tpy	Tons per year

1. INTRODUCTION

1.1. Project Understanding, Overview and Background

ARM Associates has been commissioned by IBN RUSHD to prepare an Environmental Management and Monitoring Plan (EMMP), for the Dismantling, Demolition, Excavation, Removal and Disposal of all the retired assets in the Arabian Industrial Fiber Company, IBN RUSHD in Yanbu Industrial City.

This EMMP seeks to identify and list the key activities that will be carried out to guide the demolition process to ensure that risks to the local environment are mitigated and consistent with the requirements of Royal Commission Environmental Regulation 2015 (RCER 2015), and where applicable or relevant to the national regulatory requirements established by the National Center for Environmental Compliance (NCEC). Any interactions with the NCEC will be managed and coordinated through the RC EPCD.

The project has been conducted to meet the RCER 2015 requirements for projects conducted within the Yanbu Industrial City (YIC).

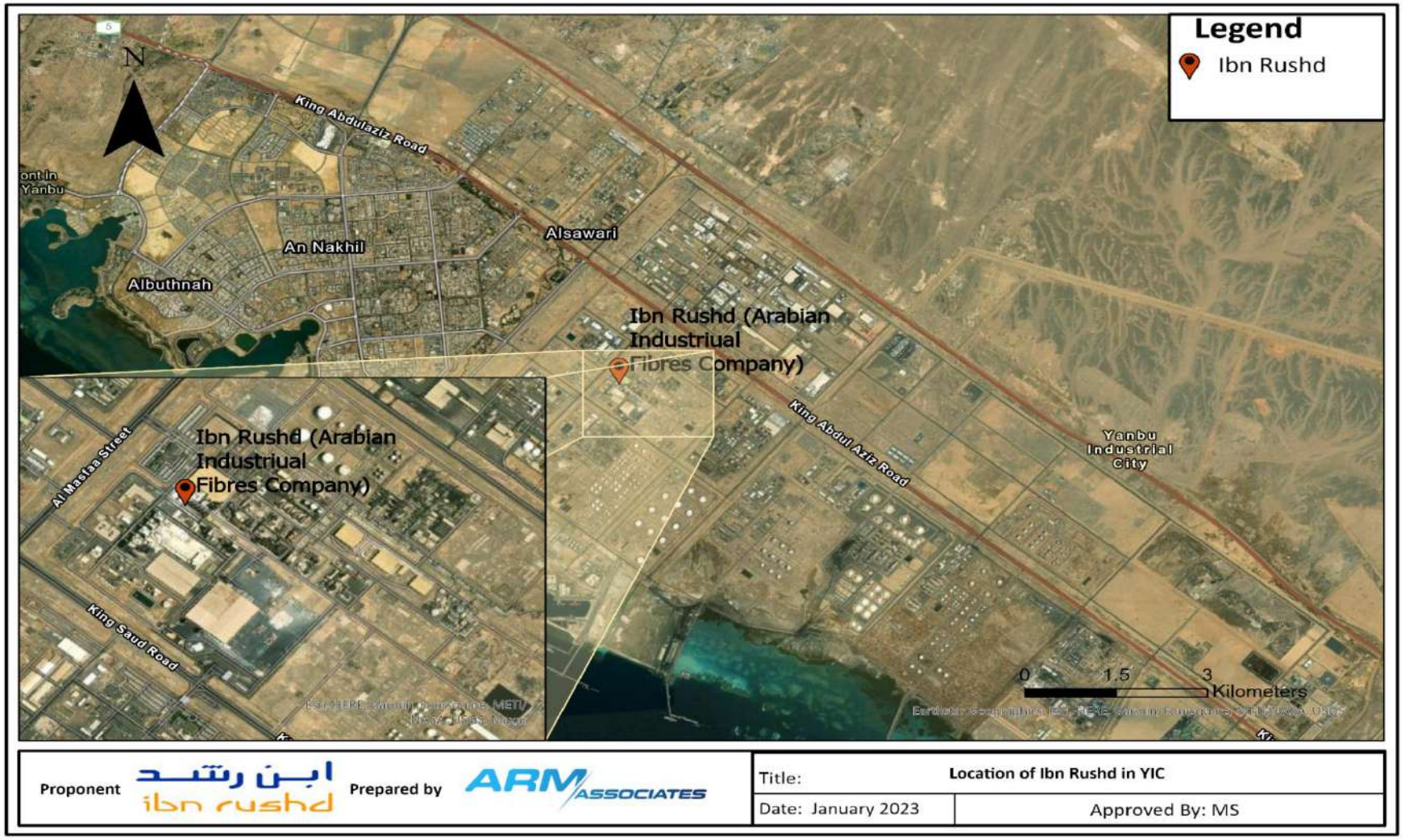
1.2. Data Sources

The environmental impact reports previously prepared for the project and the documents provided by IBN RUSHD were taken into account. The IBN RUSHD site was visited to collect data and document the current conditions and to improve understanding of the process and the potential for impacts during demolition. Additional data were obtained from the literature.

1.3. Project Location

The facility is located in Yanbu Industrial City (YIC). The general location of the IBN RUSHD plant with respect to Yanbu Industrial City is shown in Figure 1.

Figure 1 Location of IBN RUSHD in YIC



2. BACKGOUND ON THE ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN (EMMP)

2.1 Propose

The purpose of the EMMP is to provide a prescribed set of actions, procedures, audits, training, and monitoring requirements to guide the demolition of the facilities. The EMMP will serve as the principal means by which environmental issues will be monitored, controlled, and audited during the Project's Dismantling, Demolition, Excavation, Removal and Disposal phases and shall apply to all contractors. The EMMP shall include procedures for implementing all identified mitigation measures, and will provide, as a minimum, the following procedures:

- Identify roles and responsibilities, legislation, applicable emission limits for pollutants and an auditing program.
- Identify any potential or actual environmental aspects and adverse conditions.
- Set out a chain of command outlining roles and responsibilities of personnel in relation to implementation, management and review of the project and its related activities.
- Demonstrate commitments of all contractors and aspects of the demolition effort to protect the environment.
- Provide procedures describing the management, monitoring and mitigation measures of potential and actual adverse impact.
- Identify a set of mitigation measures to be taken during the work to eliminate adverse environmental impacts, offset them, or reduce them to acceptable levels.
- Define plans for reporting to IBN RUSHD, RC EPCD, and NCEC if necessary.
- Address emergency response, remedial actions, and monitoring requirements if spillage or uncontrolled emissions occur.

As a part of the EMMP specific procedures will be developed to manage and minimize the resulting environmental impacts arising from emergency events. The plan shall include specific procedures to address the following emergency situations, as a minimum:

- Identify sources of risk and develop and implement procedures to minimize risks and potential effects.
- Identify environmental incident response plan for spill response, fires, and exposure of workers to hazardous materials.
- Identify the responsibilities, resources, and procedures for interfacing with the relevant stakeholders, including site security, the Royal Commission, and IBN RUSHD.

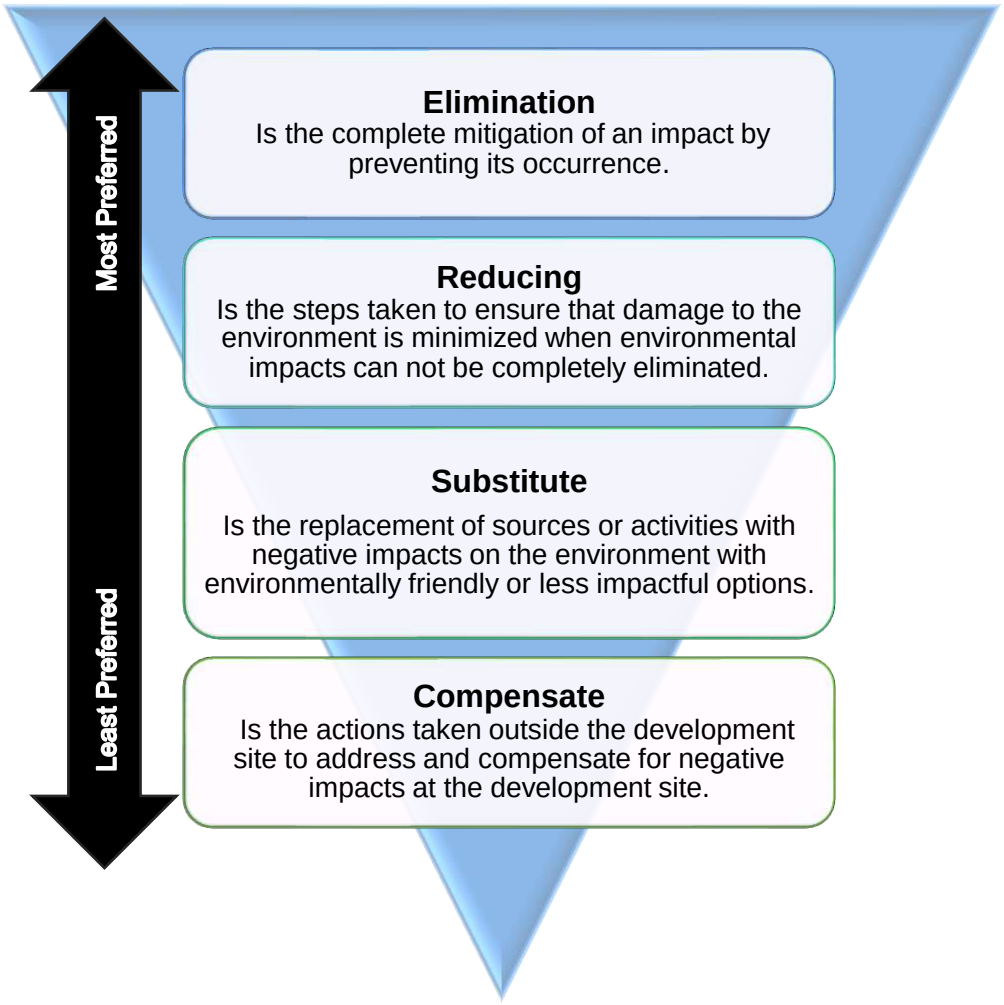
2.2 Report Structure

The report will be organized as follows:

- **Chapter 1 Introduction:** Explains the main objective of preparing the report, the sources of the information mentioned, and the location of the project.
- **Chapter 2 Background on the Environmental Management and Monitoring Plan:** Presents an overview of the EMMP's purpose, procedures will be covered, and structure.
- **Chapter 3 Demolition Environmental Management Plan:** Describes mitigation measures for significant environmental aspects during dismantling, demolition, excavation, removal, and disposal operations.
- **Chapter 4 Implementation of the Environmental Management Plans:** This section includes how, when, and where these measures will be implemented, as well as who will be responsible for them.
- **Chapter 5 Environmental Monitoring Plan:** Shows the major components of the environmental monitoring process, which are taken to verify the effectiveness of the EMMP.
- **Chapter 6 Stakeholder Engagement Plan:** Lists the stakeholders involved in this project (internal and external), their relationship to the project, and the mechanism for communicating with them for consultation or grievance procedures.

3. DEMOLITION ENVIRONMENTAL MANAGEMENT PLAN (DEMP)

This section provides a description of proposed mitigation measures that will enhance environmental protection during dismantling, demolition, excavation, removal, and disposal operations. These measures for all environmental aspects will be arranged according to the hierarchy shown below.



4.2 Noise Control

Noise generated by high noise-sources shall be measured periodically at the locations where the high noise emitting equipment is operated and at any current or future predicted hot spots along the perimeter fence of the process area in compliance with RCER 2015. The following are proposed mitigation measures to reduce noise generated during demolition efforts:

- Install noise barriers or noise-deflecting features, particularly for noise from mechanical equipment used in demolition and removal activities that have been found to have the potential to exceed permissible noise levels at the fence line.
- The Contractor shall construct acoustic screens or enclosures around any parts of the works from which excessive noise may be generated.
- The Contractor shall ensure that all mechanical equipment used in the works is effectively sound-reduced using the modern available technology such as breakers and silencers.
- To the extent possible, the asks that require large equipment use will be scheduled to avoid overlaps and to be conducted during daylight hours, and their noise will be monitored according to RCER standards.
- Activities that require crushing will be limited to daylight hours whenever possible.
- Demolition equipment and delivery trucks will be required to implement all manufacturer recommended maintenance schedules to ensure that noise abatement technologies are operating correctly at all times.
- Engine idling will be limited to periods no longer than 10 minutes.
- Schedule heavy equipment deliveries to avoid high-noise engines idling on public roads or in areas where people might gather.
- Areas within the site and within the boundaries of the project areas that have high sound pressure levels will be clearly marked and workers, suppliers, visitors, and consultants will be required to wear ear protection devices when working in these areas.
- Conduct periodic noise surveys around the perimeter to ensure that noise does not become a significant concern.

4.3 Chemicals, Fuels and Hazardous Materials Management

4.3.1 Chemicals to be Managed During Demolition

The demolition process will require the collection and management of several waste materials remaining in the mothballed process units. Some of these chemicals are categorized as hazardous or non-hazardous as defined in RCER 2015, Volume I, Section 4.1. The specific chemicals that need to be managed during the demolition process are listed in Table 1.

Table 1 List of Hazardous and Non-hazardous Materials To Be Handled During Demolition

Chemical	Hazardous Classification (1)	Quantity, tons	Special Considerations	Reuse or Recycle Options	Disposal	Responsible Party
PSA Absorbent	Non-hazardous	137.5	May form a flammable dust	Regeneration if economical and technically feasible	RC Approved Class II landfill	Demolition Subcontractor
ADS Parex Absorbent	Ignitable, toxic	581.5	Contains aromatic hydrocarbons	None	RC Approved Incineration	Demolition Subcontractor
Activated Alumina	Non-hazardous	194.52	May form a dust	Regeneration if economical and technically feasible	RC Approved Class II landfill	Demolition Subcontractor
Molecular sieve PG-363	Non-hazardous	30.78	None	Disposal	RC Approved Class II landfill	Demolition Subcontractor
Foamglas Insulation	Non-hazardous	~ 30	None	None	RC Approved Class II landfill	Demolition Subcontractor
Glycerin	Non-hazardous	3 maximum	Can ignite under high heat	None	RC Approved Incineration	Demolition Subcontractor
Ion Exchange Resin	Toxic eye and throat irritant	3	Use proper PPE	None	RC Approved Class I landfill	
Therminol 66 HTF	Toxic to aquatic life	3	Keep away from the sea	Regeneration if economical and technically feasible	RC Approved Incineration	Demolition Subcontractor
AA Plant Catalyst	Non-hazardous	85	Avoid breathing vapors, mist, or gas	Regeneration if economical and technically feasible	RC Approved Class II landfill	Demolition Subcontractor
Lubricating Oil	Ignitable	70	Open burning can release toxic fumes	Regeneration if economical and technically feasible	RC Approved Incineration	Demolition Subcontractor

4.3.2 Storage and Spill Prevention

- All hazardous materials including chemicals and fuels will be stored in designated areas on site to prevent mixing of non-compatible materials and shall be sufficient to accommodate any chemicals (powder or liquid) and be well-ventilated.
- All excavated material will be stored in designated areas away from drains.
- Fuel, oil, and chemical storage areas will be away from busy vehicle routes and stored in client-approved storage areas.
- All storage and refueling areas must be constructed to be impermeable and be surrounded by a bund wall or spill wall to prevent spills flowing outside the containment or into the underlying soil and groundwater.
- The storage areas will be inspected at least weekly and any failures in containment devices will be repaired immediately.
- Chemicals associated with the activities will be stored, handled, and disposed of in accordance with Regulatory Authority standards and as per the Material Safety Data Sheet (MSDS) of each chemical.
- All hazardous materials, including chemicals and fuels, will be kept away from the water's edge, and stored appropriately (i.e., quantities of more than 200 liters should be stored on an impermeable base within a bund capacity of holding 110% of the stored amount.
- All materials will be clearly labeled.
- Hazardous materials must be handled by operators trained and qualified in spill handling and response, including use of spill kits.
- Areas where oil, fuel and/or chemicals are used or stored will have spill kits appropriate for the materials in use within easy access. A sufficient inventory of spill kits will be maintained to allow replacement immediately after each use.
- Ensure there is adequate fire-fighting equipment in the fuel storage area.
- Adequate signage will be in place identifying hazardous material and the nature of the hazard.
- A list of all hazardous substances present on site and the material safety data sheets (MSDS) for these substances will be available at required locations/sites.
- Ensure that any fuel to be used on-site (e.g., for generators) is stored in a container (tank or drum) that is of sufficient strength and structural integrity and has been installed to

ensure that it is unlikely to burst or leak during normal use, and that was rated according to the fuel used so that static electricity and earthing requirements are met.

- Maintain absorbent materials and spill kits with all fuel transfer vehicles, maintenance vehicles, or vehicles designated for emergency response.
- Locations with a high spill frequency will be fitted with appropriate secondary containment and collection sumps. These control features will be inspected regularly by trained personnel. Hazardous spills shall not be discharged directly to the public watercourse. It shall be retained in a steel/plastic container, or in a lined, concrete pit.
- Any leaking drums or containers will be removed immediately and appropriately. The underlying soils will also be remediated if the leak caused them to become contaminated. Contaminated soils will be transported to an RC approved Waste Management Facility (WMF) for appropriate treatment and disposal.
- Empty containers will be removed from the site and will be either recycled or disposed of as hazardous material.
- All chemical containers will be placed on the dedicated yard and the accidentally spilled chemicals and/or expired chemicals will be collected and discharged at appropriate disposal sites.
- The quantities of fuel, oil and chemical that pose environmental hazards shall be minimized.

1.1.1. Spill Kits

Spill kits will be made available at strategic locations across the site (including refueling locations, and storage areas).

- The spill clean-up kit must be labeled and have appropriate signage indicating its normal location when not in use, and instructions for use must be kept within the kit.
- Sand must not be used as an absorbent, as this directly causes further environmental contamination (i.e., the sand is part of the natural environment, and becomes contaminated).
- The contents of the spill clean-up kit must be restocked after use, and contents must be checked for adequacy on a regular basis.

The following should be the minimum contents of the spill kits:

- Personal protective equipment (goggles, chemical resistant gloves, plastic, vinyl or rubber shoe covers, disposable lab coats, aprons, or coveralls).
- Clean up tools and materials (e.g., thick, heavy dust waste bags, shovel, sealing tape).
- Metal drip trays and/or quick deployment pools.

- Metal drip tray should be used for: Leaking vehicle fuel tanks, blown hydraulic lines, leaking containers and liquids used to decontaminate spill responders.
- A quick deployment pool is also an ideal and inexpensive option to place beneath a vehicle that is leaking as it can be cleaned and used again.

1.1.2. Spill Response

Spillages or leakages resulting in soil or water contamination should be considered as an environmental incident and must be cleaned up immediately to prevent it from reaching or spreading into the environment. Spills or leaks will be classified as per RCER 2015 and the SABIC Safety, Health and Environment Management Element (SHEM-10), Incident Reporting, Classification, Investigation and Analysis.

If a spill occurs, a response procedure should be followed, and a detailed contaminated land cleanup strategy shall be implemented as follows:

- Access the risk (safety, severity, and area of impact).
- Call EHSS Manager and Environmental Advisor immediately and inform:
  - Location of the incident.
  - Type of incident and severity.
  - Whether emergency services are needed.
- Contain the spill:
  - Use booms or pool to contain spill and stop it spreading.
  - Barricade incident area.
- Absorb contained fluids (with sorbents).
- Dispose of contaminated materials (be it soil, water or spill kit materials) initially into sealed drums or other containers, and then transported off-site by RC approved Waste Transporter Company to RC or NCEC approved disposal facility.
- Complete final incident report and submit to IBN RUSHD, and RC EPCD immediately after the incident response has been satisfactorily completed.

4.4 Waste Management

Demolition activities will result in the generation of a variety of waste which can be divided into distinct categories based on their constituents, as follows:

1. Demolition waste (includes materials torn down during demolition, including concrete, structural steel, aluminum, copper and other metals, plastics, e-waste, materials that have been over-ordered or are surplus to requirements for the demolition process, and materials that have been used and discarded).
2. Hazardous waste (such as oil, fuel, and chemicals).
3. General refuse (this includes food waste and its packaging, and wastepaper).

1.2.1. Waste Management Hierarchy

The various waste management options can be categorized in terms of preference from an environmental viewpoint. The options considered to be more preferable have the least impacts and are more sustainable in a long-term context. Hence, the hierarchy is as follows:

1. Avoidance and minimization, i.e., not generating waste through changing or improving practices and design.
2. Reuse of materials, thus avoiding disposal (generally with only limited reprocessing).
3. Recovery and recycling, thus avoiding disposal (although reprocessing may be required).
4. Treatment and disposal, according to relevant laws, guidelines, and good practice.

This hierarchy should be used to evaluate waste management options, thus allowing maximum waste reduction and often reducing costs. For example, by reducing or eliminating over-ordering of materials required to undertake the demolition, waste is avoided, and costs are reduced both in terms of purchasing and in disposing of waste.

In addition, The RCER 2015 specifies waste management requirements within YIC. No waste generated in YIC can be transported outside of YIC for treatment or disposal other than those returned to the vendor for reuse or those sent outside for recycling.

To the extent possible all steel, concrete, copper, other metals, plastics, e-waste, used oils and lubricating materials, solvents, and packaging materials will be segregated and sent to a licensed facility to be recycled.

The RCER Waste Manifest procedure will be followed to record the quantity of recycled e-waste, the location where it was taken for recycling, and a confirmation that the material was accepted for recycling and records will be retained for no less than 5 years.

The Contractor should incorporate these measures listed below into a comprehensive on-site waste management plan. Such a waste management plan will include site-specific factors, such as designated areas for the segregation and temporary storage of reusable and recyclable materials.

3.3.1.1. Recommended Measures for Demolition Waste

It has been estimated that approximately 150,000 – 200,000 tpy of demolition waste will arise at the plant demolition site. The following measures can be taken:

- Expired or unused materials will be minimized with careful design, planning, and inventory management to minimize over-ordering. To the extent possible individual demolition contractors will be encouraged to transfer unused materials to others to avoid excess quantities being purchased and stored on site.
- The Contractor shall separate as much as possible of the demolition waste to comply with the demolition schedule and to increase the feasibility of recycling certain components of the waste stream by recycling contractors.

- Small quantities of oil-stained concrete are expected to be generated; these will be treated as hazardous waste for disposal purposes.
- Concrete and masonry can be crushed and used as fill and the extracted steel reinforcing bar can be used by scrap steel mills. Different areas can be designated for such segregation and storage depending on site specific conditions. It should be noted that the contractor should ensure that the waste is actually recycled if the recovered materials are exported for recycling in other countries.
- Proper storage and site practices will minimize the damage to or contamination of demolition materials that may reduce their recyclability and suitability for disposal in class II landfills. On-site measures may be implemented which promote the proper disposal of wastes once off-site. For example, having separate skips for inert (rubble, sand, stone, etc.) and non-inert (wood, organics, etc.) wastes would help to ensure that the former are taken to uncontrolled landfills, while the latter are properly disposed of at controlled landfills.

3.3.1.2. Recommended Measures for Hazardous Waste

For those processes which generate hazardous waste, it may be possible to find alternatives which generate reduced quantities or even no hazardous waste, or less dangerous types of hazardous waste. Hazardous waste that is produced should be handled in accordance with the Code of Practice on the Packaging (MSDS sheets), Handling and Storage of Chemical Waste as follows:

Containers used for the storage of chemical waste should:

- Be suitable for the substance they are holding, corrosion-resistant, maintained in a good condition, and securely closed.
- Have a capacity of less than 450 L unless the specifications have been approved by EPCD.
- Display a label in accordance with instructions prescribed in RC regulations.
- All chemical containers will be placed nearby special vehicles and any accidentally spilled chemicals will be collected by vacuum truck and transported to temporary storage areas within the plant for ultimate disposal to an RC EPCD/NCEC licensed disposal facility.

The storage area for chemical waste should:

- Be clearly labeled and used solely for the storage of chemical waste.
- Have an impermeable floor and bunding, of capacity to accommodate 110 % of the volume of the largest container.
- Make sure the storage area has adequate ventilation, regardless of how much waste is stored there.
- Be covered to prevent rainfall from entering (water collected within the bund must be tested and disposed as hazardous waste if contamination is found).

- All hazardous solid and liquid waste generated during operations will be collected, appropriately segregated, and stored at each designated location(s) on a daily basis to prevent spreading to surrounding areas, mingling with non-compatible materials, or becoming harmful to surrounding people or the environment.

Treatment and disposal of chemical waste should:

- Be through a designated waste collector licensed by RC EPCD/NCEC to handle these hazardous materials.
- Be to a facility licensed to receive chemical waste, such as a hazardous waste treatment facility that also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuse facility under approval from the EPCD.

3.3.1.3. Recommended Measures for General Refuse

- General waste generated on-site and at worker accommodations will be stored in closed bins or compactors separate from demolition and hazardous waste in an orderly manner at each designated site(s).
- The burning of refuse on demolition sites or accommodations is prohibited by law.
- Food service activities at worker accommodations generate a large amount of general refuse, so reusable rather than disposable dishware should be used if feasible.
- Office waste can be reduced through the recycling of paper if volumes are large enough to warrant collection. If local collection schemes are available, they will be used.
- Aluminum cans are often recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.
- All demolition contractors shall employ a reputable waste collection company approved by EPCD to remove general waste from the site to the designated landfill location or treating facility, separately from demolition and hazardous waste every day or two to minimize odor, pest, and litter impacts.

3.3.1.4. Recommended Measures for All Types of Waste

The recommended measures that must be taken into account in all types of waste are:

- Waste should be handled and stored in a manner which ensures that they are held securely without loss or leakage thereby minimizing the potential for environmental contamination.
- Only reputable waste collectors authorized to collect the specific category of waste concerned should be employed.
- Appropriate measures should be employed to minimize windblown litter and dust during transportation by either covering trucks or transporting waste in enclosed containers.
- The necessary waste disposal permits should be obtained from the appropriate authorities.

- Collection of general refuse should be carried out frequently, preferably daily; waste should only be disposed of at licensed sites and site staff and the civil engineering contractor should develop procedures to ensure that illegal disposal of waste does not occur.
- Waste storage areas should be well maintained and cleaned regularly; and records should be maintained of the quantities of waste generated, recycled, reused, and disposed, determined by weighing each load. The RCER Waste Manifest System will be used to maintain records to allow tracking of the ultimate disposal or recycling of all waste leaving the site.
- Training and instruction of demolition staff should be given at the site to increase awareness and draw attention to waste management issues and the need to minimize waste generation. The training requirements should be included in the site waste management plan.
- The waste shall be disposed of according to RCER/NCEC requirements at an approved disposal facility (EPCD will provide a list of approved transporters and approved disposal facilities). In order to avoid illegal dumping of these waste materials into non-designated locations, all of the materials taken out from the site shall be handled by waste manifest requirements documented in RCER 2015, Volume 1, Section 5.2, which confirms the waste material has been transported to and accepted by the appropriate receiving facilities. The authorized receipts at final disposal areas/treatment facilities shall be kept in the file at the site for a period of not less than 5 years.

4.5 Air Quality

Air pollution impacts are unavoidable during any demolition project. Demolition activities result in air emissions from combustion equipment as a result of demolition, excavation, heavy lifting equipment, collection and removal of demolished materials, transport of materials to recycling or disposal sites, and the delivery of supplies and personnel.

Appropriate mitigation measures listed below will be implemented by all demolition contractors and records of maintenance, source of fuel and fuel consumption,and inspection/repairs of onsite fuel storage tanks will be produced and retained by each contractor.

- All vehicles will be inspected and certified for the intended uses.
- All vehicles will be operated in accordance with recommended procedures and subject to manufacturer recommended maintenance schedules.
- Vehicles will not be allowed to idle for more than 10 minutes.
- Use the lowest sulfur diesel fuel supplies available.
- Activities that require the use of heavy equipment will be coordinated to the extent possible to minimize the movements of this equipment.
- Deliveries of materials, supplies and workers will be coordinated to minimize the frequency of movements.
- Fuel tanks will be enclosed in secondary containment and refueling activities will be done without splash fill to the extent possible.

4.6 Dust Control

Demolition activities result in the emission of Particulate Matter (PM) into the air from vehicle movements, surface disturbances caused by heavy equipment, as well as structural demolition. The dust generated is usually from concrete, cement, wood, stone and silica.

As presented above, the demolition works are likely to cause high dust impacts at some receptors. The following dust control measures should be implemented to minimize dust nuisance to within acceptable levels arising from the works:

- Avoid large-scale vehicle movement tasks during periods when the wind speed exceeds 13 m/s.
- Frequent movement of vehicles should be on hard-pack or paved areas in the demolition zone. So unpaved surfaces must be paved or compacted during the early stages of demolition.
- Limit vehicle speed to less than 30 km/h when operating on unpacked or paved surfaces.
- Treat surfaces prone to dust generation with water when extreme conditions are present that can result in dust emissions.
- The heights from which excavated materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from collisions with other materials at the surface.
- Dusty materials should not be loaded to a level higher than the side and tail boards and should be covered before transport.
- Plan for activities to minimize the extent and duration of areas that will be affected by vehicle movements.
- Include grading to barriers (berms, silt fences) to catch runoff before reaching the area where solids can dry and turn to dust.
- Effective water sprays should be used on the site at potential dust emission sources such as active demolition areas.
- Haul roads should be regularly watered.
- Wheel washing facilities should be provided at the exit of the site.

With the above measures, it is expected that the dust emissions from the site could be reduced by 50%.

4.7 Water Discharge Control

Some measures have been taken to control the discharge of stormwater, dust control water, and sewage from the site into the Red Sea in order to comply with the standards for effluents discharged.

1.5.1. Contaminated Stormwater Control

- Contaminated stormwater shall be collected by the surface water collecting system and a dedicated stormwater basin sized for the first 30 mm of any single rain event shall be provided in order to prevent direct flow to the outside of the site boundary.
- Before discharging into RC stormwater channel, the contaminated water shall be retained in the storm water basin where it will be tested to determine if contamination exists.
- If contaminated stormwater does not meet RCER 2015 discharge standard in Table 3C, then it needs to be added to effluent flows directed to the central WWTP.
- If contaminated stormwater does not meet the discharge standard of Table B it will be sent for treatment and disposal at an RC EPCD approved WMF.
- When demolition of elements of the internal runoff control system are taking place the affected areas will be surrounded by a sand barrier on an as needed basis to ensure the retention of runoff.

1.5.2. Sewage and Wastewater Control

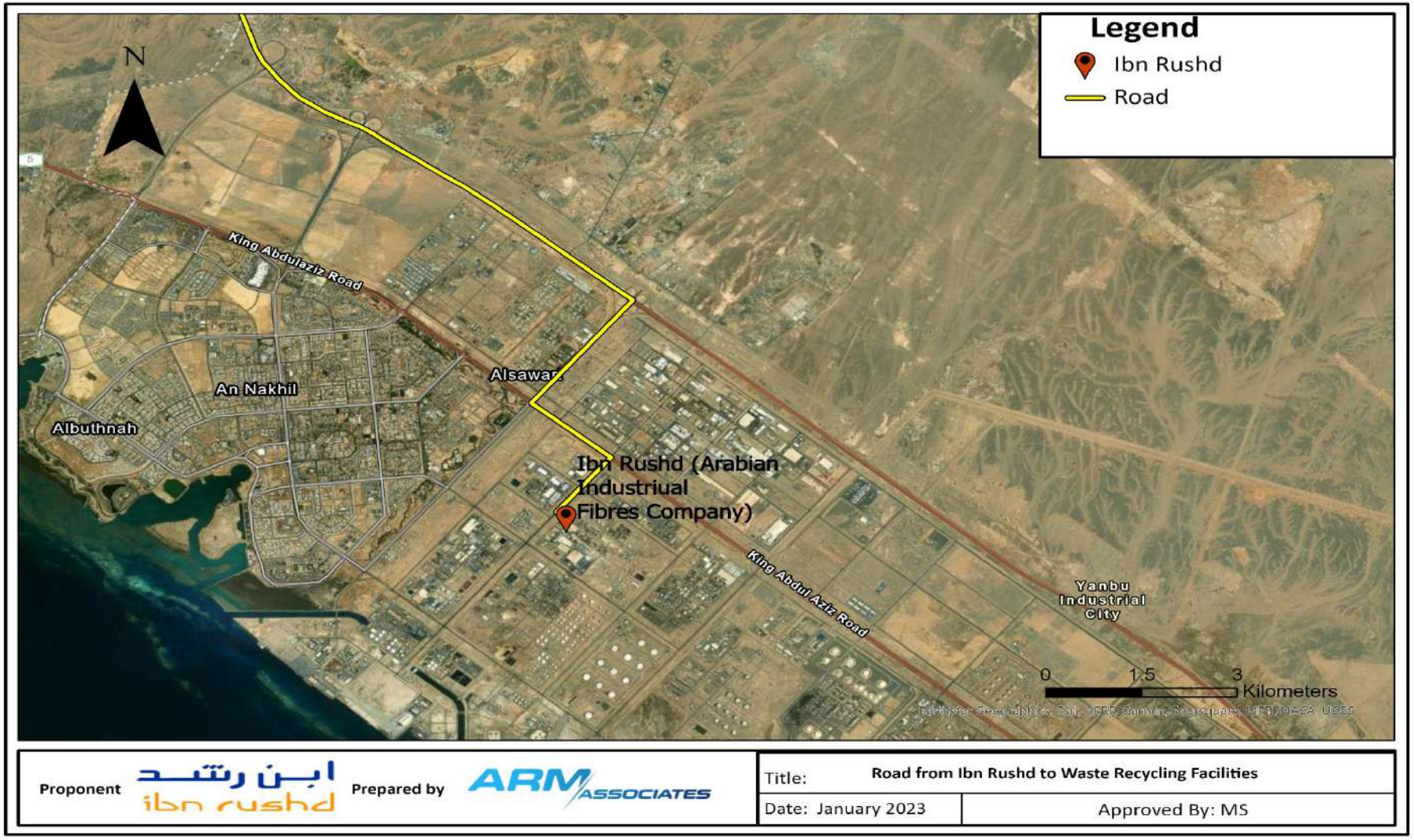
- All sewage and wastewater shall be pumped to local municipal sewage wastewater treatment facility as follow:
- The sanitary wastewater shall be disposed of through Marafiq sanitary wastewater facility.
- Wastewater from chemical totes shall be disposed of through an RC approved WMF company to dispose of the industrial water to the facility.
- The authorized receipts at the treatment facilities shall be kept in a file at the site for period not less than 5 years.

4.8 Traffic Control

- The existing infrastructure and continually expanding surface road network are considered sufficient to support the delivery of demolition equipment, transportation of demolition waste, and the demolition labor force during the demolition effort. It is estimated that deliveries can reach 70-100 per day at peak to transport large, disassembled components and other waste materials during demolition. Therefore, all these deliveries will be routed to the main highways away from the roads that service the Yanbu residential areas as shown in Figure *2* and Figure *3*, and deliveries of large components will be arranged with industrial security. Figure *2* shows the most favorable route to the waste management facilities operating in YIC and Figure *3* is the preferred route to facilities outside of YIC where materials can be taken for recycling.
- It is anticipated that approximately 700 – 1,000 laborers will be involved in the demolition effort at peak. Typically, laborers are housed in camps in relatively close proximity to the site and are transported in busses to and from the site. Based on an estimate of 40 workers per bus it is anticipated that there will be approximately 22 – 25 round-trip bus trips per day. The workforce will be deployed in two shifts, and this can reduce the number of trips by bringing workers in one trip and returning workers who have ended their shifts

Figure 2 Road from IBN RUSHD Plant to Waste Management Facilities

Figure 3 Road from IBN RUSHD Plant to Waste Recycling Facilities



in the same round trip. As these moves will not contribute to additional traffic on roads in the residential part of the city.

4.9 Health and Safety

The demolition of industrial facilities is associated with health and safety risks. Specific health and safety issues are summarized in Table 2.

Table 2 Main Health and Safety Risks to Be Managed During Demolition

Type of Emergency	Area	Control Measures
Worker exposure to demolition equipment and machinery	Demolition area	Work procedures, work permits, and PPE can reduce the risk of catastrophic accidents and the possibility of burns and trauma injuries.
Fire or explosion of diesel fuel	Diesel delivery and metering system	Employee training will be implemented to ensure that all employees know the danger signs and what to do in the event of an accident. Additionally, the appropriate fire-fighting equipment and employee personal protective equipment (PPE) will be available.
Transportation and storage of materials and demolition waste.	Receiving and load out and on road truck movements	Includes demolition waste and other materials received or transported in bulk by truck and stored in designated storage areas. There will be specially trained and responsible workers for this operation.

Type of Emergency	Area	Control Measures
Miscellaneous Accidental Spills	General areas	Delivery truck incidents could lead to the release of hazardous chemicals at loading/unloading areas/docks or plant roadways. The release of hazardous chemicals could cause personnel exposure and environmental contamination. Truck access will be confined to certain areas, all drivers will be trained in the safe operation of vehicles and records will be maintained to document the required maintenance of vehicles.
Vehicle incidents	External Plant entrances and roadways	Delivery truck incidents could lead to demolition waste falling into the roadways. All drivers will be trained in the safe operation of vehicles and certified for the operation of the particular class of vehicle, and records will be maintained to document the required maintenance of vehicles.
Vehicle incidents	Contractor in transit from home to work	The contractor will implement safe driving awareness programs and encourage ridesharing, and busses for laborers.
Medical Emergencies	General plant areas	Due to the nature of the project, there is a risk of personal injury including, but not limited to cuts, bruises, sprains, broken bones, chemical exposures and damage to soft tissues (i.e., skin, eyes, etc.), sunstroke, electrocution, burns, pinches, and other assorted injuries. Each area will have a first aid kit and treatment area, and the facility will have staff trained in first aid on a 12 hours per day, 6 days a week schedule. Training requirements and personal protective equipment will be enforced.

Type of Emergency	Area	Control Measures
Natural Events	General areas	Managing the impact of natural events including, but not limited to, severe heat conditions, sandstorms, fog, rain events, lightning storms and other natural events will be the responsibility of the Health and Safety department personnel. The EHSS group will monitor developing weather conditions and work with the contractor management teams to develop and issue safety guidance as needed to ensure personnel are not working in unsafe conditions, such as on elevated superstructure when lightning is imminent. Safety guidance can range from heat alerts requiring extra liquids, more frequent breaks, or the cancellation of work to “shelter indoors” requirements for severe weather (severe sandstorms or lighting storms). A matrix of increasing weather conditions vs. mitigating protocols will be developed and maintained by the EHSS group for use in managing the impact of Natural events.

The personnel responsible for the health and safety of each of the contractors selected for the project will be subject to review and approval from the Project Management Team. A strict prequalification process for contractors including a review of standard procedures and historical safety records will be adopted.

Each contractor will be responsible for drafting Health and Safety Plans associated with their work. All written work procedures shall include information on Health and Safety practices, required protective equipment and emergency procedures in order to create and maintain a safe and healthy work environment, and reduce the potential impacts on surrounding residential, cultural, educational, and recreational areas to protect public health.

5. IMPLEMENTATION OF THE ENVIRONMENTAL MANAGEMENT PLANS

The Environmental Management Plans for Demolition cannot be effective if they are not implemented in a structured and disciplined way. The activities below represent the minimum requirements that must be considered.

6.2 Roles and Responsibilities

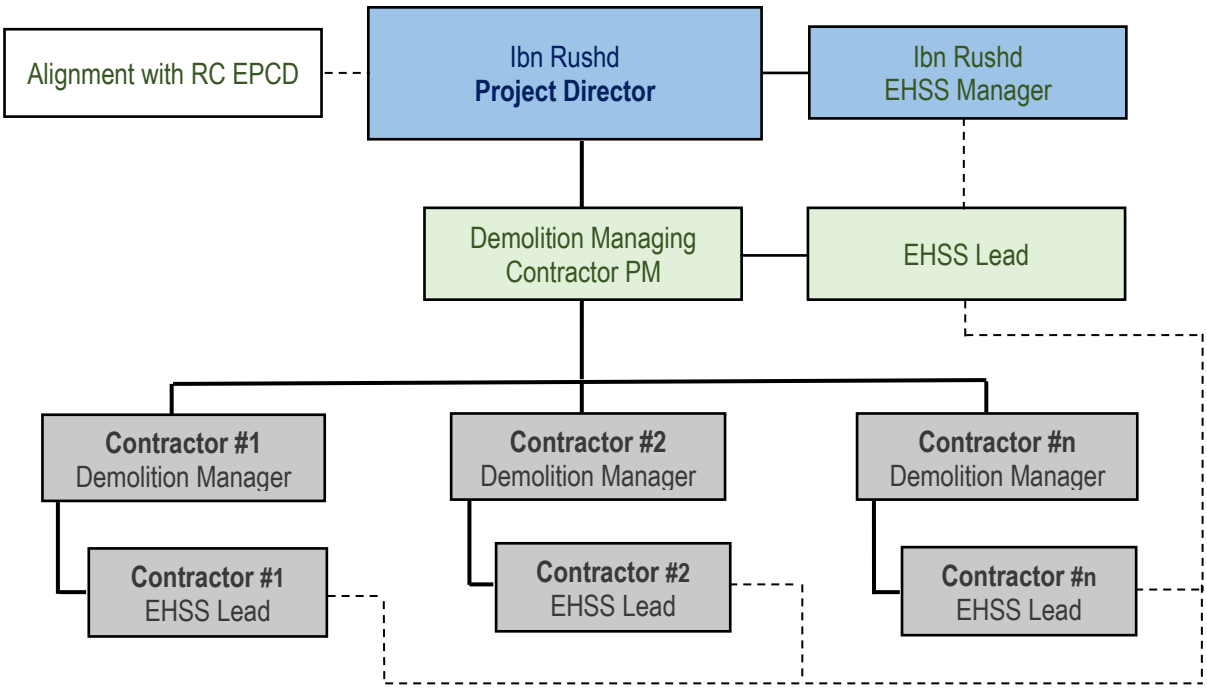
The organization of the Demolition Environmental Management and Monitoring Plan (D-EMMP) and its execution for the demolition work shall be based on the Line Management principles, which means that the Environmental Management responsibilities follow the reporting lines from the Project Director to the Project Manager of each contractor and to each project member.

The Project Director has the overall responsibility to establish a project organization for the implementation of EHSS requirements.

The Demolition Managing Contractor organization will include a Project Manager, reporting directly to the overall Project Director. Individual contractor's personnel responsible for Environmental, Health, Safety and Security (EHSS) matters will report directly to their manager, but there will also be direct communication between the EHSS personnel of all contractors and the Project Manager of the Demolition Managing Contractor.

Any line manager is obliged to ensure that the activities he is responsible for are planned, organized, carried out and documented according to this D-EMMP. All line managers are responsible for contacting the Demolition Manager when support in EHSS matters is needed. The EHSS organization is illustrated in the organization chart in Figure *4*.

Figure 4 Organizational Structure and Reporting Lines for D-EMMP.



Project Director (IBN RUSHD)

The Project Director is ultimately responsible for the EHSS program assurance for the Project. This position has overall responsibility for all demolition related issues and shall provide the necessary resources and personnel for the execution of this plan.

EHSS Manager (IBN RUSHD)

The EHSS Manager of IBN RUSHD is responsible for the overall EHSS performance of the Project and acts as a supervisor of the Demolition Managing Contractor's EHSS management. The manager has direct reporting lines to the Project Director and is in day-to-day communication with EHSS Lead of the Demolition Managing Contractor.

Project Manager (Demolition Managing Contractor)

The Project Manager of the Demolition Managing Contractor is responsible for implementing Project EHSS requirements and policies as well as for the overall direction of the team and the development of departmental plans and procedures. EHSS related Interfaces between other departments and with contractors shall be coordinated with the Demolition Manager.

EHSS Lead (Demolition Managing Contractor)

The EHSS Lead is responsible for the day-to-day implementation of the Project's EHSS requirements and policies for each demolition contractor and has direct reporting lines to the Demolition Managing Director and the Ibn Rushd EHSS Manager.

Contractor's Demolition Managers

All contractor's Demolition Managers are responsible for the Demolition activities on-site in accordance with the contractor's SoW and this EMMP. Contractor Managers have reporting lines to the Project Manager of the Demolition Managing Contractor. The Demolition Manager is responsible for EHSS compliance for a contractor's activities on site as per IR Asset Retirement Management System.

Contractor's EHSSLeads

The EHSS Leads are responsible for planning and execution of EHSS elements contained within their work scope, and providing any data, feedback and hold-points required.

6.3 Communication

Lines of communication are shown in the organizational chart shown in Figure 4.

6.4 Audits and Reporting

A four-tiered approach will be applied to the monitoring of the project performance, as follows:

1. **Site Tours:** These will mainly consist of a daily “walkthrough” of the demolition site by the Demolition Contractor’s Environmental Specialist/Engineer.

2. **Site Inspections:** To be conducted weekly by the Demolition Contractor’s Environmental Specialists/Engineers and Project Manager of the Demolition along with the Contractor’s EHSS Leads or Contractor’s Demolition Managers to check demolition site activities against a planned checklist.

3. **Audits:** At least quarterly internal audits of the implementation of this D-EMMP and any specific sub-plans adopted by the Demolition Manager will be conducted by the Demolition Contractor’s EHSS Specialists/Engineers. In addition, independent external audits may be undertaken at specified intervals (the initiative comes from RC EPCD).

4. **Environmental Monitoring Program:** Monitoring of key environmental conditions such as air quality, noise and water quality will be undertaken in accordance with the Environmental Monitoring Plan (in chapter 5) and local requirements.

   During Site tours and Site Inspections, the Demolition Contractor’s EHSS Manager and EHSS Specialist/Engineer should monitor the EHSS performance (as applicable) of the site in line with this D-EMMP and gather relevant information and inputs to monthly reports. Any manager, superintendent, foreman or worker who discovers a non-conforming environmental issue, shall notify the Project Manager of Demolition directly or through a line manager. The Demolition Manager (Demolition Managing Contractor) will report directly to the Project Director to have work suspended if on-site conditions have, or have the potential to impact habitat, and wildlife or are in significant non-conformance with requirements outlined in this D-EMMP, RCER 2015 standards, or NCEC standards.

   All environmental and health and safety incidents, including near misses, will be reported immediately to the Demolition Manager and further to the Project Director identifying the nature of the incident and how it has been or will be addressed. A Non-Conforming situation shall be addressed by the implementation a corrective action through the non-conformance handling procedure.

6.5 Training Plan for Demolition Phase

All contractors selected for the demolition effort will be required to establish that they operate under the guidelines of their formal D-EMMP that addresses the recommended procedures and mitigation measures identified in this document. All workers will receive formal initial training that will describe the following:

- Training for all contractors on the requirements and procedures of the D-EMMP.
- Roles and Responsibilities and organization structure of the environmental management team.
- Environmental awareness to describe why the mitigation measures and the procedures for implementing the mitigation measures are important.

- Procedures for identifying and responding to perceived or real environmental emergencies.
- Procedures for recommending opportunities to improve the environmental performance during the project works, such as opportunities to reduce or reuse waste generated or reduce water.
- Requirements for internal audits of work phases to identify gaps between recommended practices and actual performance.
- Scheduled periodic refresher training and toolbox talks to discuss lessons learned from internal audits and to reinforce the goals of the D-EMMP.

7. ENVIRONMENTAL MONITORING PLAN

Monitoring of key environmental conditions such as air quality, noise and water quality will be undertaken in accordance with the monitoring plan and local requirements.

The results of spot inspections and planned audits will be prepared as formal reports and discussed in monthly management meetings. Plans for the preparation, implementation and monitoring of any additional requirements or procedures that are found to be necessary to improve the management plan will be documented along with a schedule and a named person responsible for the implementation of recommendations.

8.2 Noise

- Sound pressure levels at specific areas of the demolition effort where hearing protection is required will be monitored on a regular basis. The causes of increased sound pressure levels, if found, will be investigated and remedial action taken to reduce the sound pressure to acceptable levels.
- Periodic measurements of ambient noise at predicted hot spots along the facility fence line will be made during the demolition and removal of material as specified by EPCD to document that noise levels from the facility operations do not exceed the allowable limits as presented in RCER 2015.

8.3 Waste

- A waste manifest as specified in RCER 2015 will be maintained during demolition to document the quantities of each type of recyclable material, and waste generated, the date the materials were sequestered to the on-site temporary storage yard, the date these wastes were transported off-site, the transporter and license number of the transporter, and the time these wastes were accepted at the final recycling or WMF.
- The waste manifest forms, and a summary of waste generation, handling and disposal will be made available to RC EPCD if requested.

The waste manifests and summary reports will be prepared by Demolition Contractors as part of their normal job duties and will be maintained by the Project Director.

8.4 Air Pollution Sources

- No special air quality monitoring is thought to be required during demolition. If dust levels rise to problematic levels the Demolition Contractors will consider monitoring short-duration periods to document the potential exposures and take immediate mitigation measures.

8.5 Wastewater Effluents

- Monitoring groundwater quality before and during dewatering if any dewatering is required.

- The flow rate of sanitary wastewater and industrial wastewater during demolition should be monitored to document the incremental contribution to current total flows sent to Central Sanitary Wastewater Treatment plant.
- Capacities of existing systems to manage the additional flows will be documented every three months.

Demolition Contractors will monitor effluents periodically through their laboratories.

9. STAKEHOLDER ENGAGEMENT PLAN (SEP)

The overall objective of this Stakeholder Engagement Plan (SEP) is to define a program for stakeholder engagement, including information disclosure and consultation throughout the demolition stage. The SEP highlights the way the project owners (IBN RUSHD) will communicate with stakeholder groups who may be affected by or interested in the project. Effective stakeholder participation is important for the successful management of the risks and impacts on the communities affected by the project and also aims to align the strategy with Saudi Arabian cultural and social values. The SEP also defines an external grievance mechanism by which residents of Yanbu Industrial City and other internal and external stakeholders can raise concerns, provide feedback, or make complaints about the project activities.

The SEP, therefore, sets out to:

- Maintain constructive and transparent relationships between local communities and the project owners, and thereby to create a collaborative framework that can assess its positive and negative impacts on the community and respond appropriately.
- Build a communication channel with the local community about the project owners' challenges and accomplishments in achieving sustainable environmental management objectives.
- Ensure that major announcements that could impact the local community are communicated concurrently with communications to external audiences (such as the media).

It is proposed that the SEP is a living document and will be updated on a regular basis (usually annually). Updated versions may include new stakeholders and any changes to the stakeholder program.

10.2 SEP Content

The following system for stakeholder engagement will be implemented for and is applicable to the IBN RUSHD Demolition Project in accordance with the best practices and taking account of local KSA cultural and social values and specifics:

1. **Identification of IBN RUSHD Demolition Project Stakeholder Groups:** identification of stakeholders and the public that are, or could be, affected by the project's operation.
2. **Stakeholder Engagement Process:** during this step, the project owners are to ensure that identified stakeholders are appropriately engaged on EHSS issues that could potentially affect them through a process of information disclosure and consultation.
3. **Consultation Process:** the consultation process will be based on the disclosure of information relevant to the project activities. The consultation process will be undertaken in a manner that is inclusive and culturally appropriate.
4. **Grievance Mechanism:** maintaining a grievance process by which stakeholders' residents of local communities can raise concerns, and which will be handled in a prompt and consistent manner.

10.3 Stakeholder Identification and Consultations

Stakeholder identification is a crucial step in managing the overall stakeholder engagement process. Accurate stakeholder identification reduces the risk of a narrow stakeholder group dominating the engagement process to the detriment of the entire community. When stakeholders are accurately identified and interactions are documented, the project owners will be able to demonstrate compliance, responsiveness and optimum business practices.

The project owners have identified three major stakeholder groups who may be interested and/or affected by the project activities:

- Internal stakeholders (employees, vendors, suppliers, consultants, and the demolition construction contractors and their staff).
- External stakeholders, including governmental authorities, municipalities, transport companies, WMFs, recycling facilities, and local businesses.
- Local public/residents.

Others who wish to be included in the list can contact the project owners and be put on the mailing list for information on reporting, meetings, or other consultation opportunities.

4.2.1. External Stakeholders

Table *3* summarizes the key categories of external parties and their potential interest in the project.

Table 3 Key Categories of External Parties and their Potential Interest in the Project

External Stakeholders	Interest in the Project
Royal Commission for Jubail and Yanbu Environmental Protection and Control Department	EPCD is the primary authority responsible for the protection of the environment and public exposure to environmental threats in YIC. Most public complaints will be managed through the Royal Commission. Any direct communication if necessary with the NCEC will be coordinated through the RC EPCD.
High Commission for Industrial Security (HCIS)	HCIS is the body responsible for security, safety and fire protection.
Local or Regional Chambers of Commerce	To ensure project purchased materials and consumables through local businesses to the extent possible.
National Commission for Wildlife Conservation and Development (NCWCD)	To ensure that the project does not negatively affect natural protected areas and complies with NCEC/KSA environmental legislation.
SABIC EHSS Department	Coordination throughout the project to ensure the project is in compliance with SABIC policies, and consistent with KSA regulations concerning the treatment of worker safety and community health
Business and workers' organizations	Interest in procurement and supply chain, and potential environmental impacts.
Press and media if interest arises	Inform people and authorities in the project area and the wider public about project implementation and planned activities.

External Stakeholders	Interest in the Project
Academic institutions (universities, think tanks, schools)	1. Potential concerns regarding environmental and social impacts. 2. Potential educational/outreach opportunities to increase awareness and acceptance of the project.
Local Residents through interactions with the relevant Departments of the Royal Commission	1. Potential concerns regarding exposure to environmental impacts. 2. Potential educational/outreach opportunities to increase awareness and acceptance of the project. 3. Potential opportunity to conduct public exhibitions to educate local residents about the project impact, etc.

4.2.2. Internal Stakeholders

Internal interested parties with stakes in the project include the staff of the project, management, and employees of the surrounding SABIC facilities, their prospective contractors and subcontractors, service providers, local vendors, and suppliers.

4.2.3. Summary of Stakeholder External and Internal of the Project

Table *4* summarizes the level of interest in and potential influence over the project of the various stakeholder categories identified above. Categories having “high level of interest” and “high ability to influence the project” will require regular and frequent engagement, typically face-to-face and written, and several times per year. Categories with “medium interest or medium influence” will require regular engagement (e.g., every half-a-year), typically through written information. Other will require infrequent engagement (e.g., once a year), typically through indirect written information (e.g., mass media).

4.2.4. Methods of Engagement with Stakeholders

The project owners will use complementary venues for engagement to ensure that the broadest stakeholder groups are reached. These venues are complementary in that they will each serve different purposes but for a common end. Examples of venues include:

- Meetings with the officials representing relevant RC Departments, and government officials if and when necessary.
- Frequent interaction and meetings with RC EPCD.
- Formal letters to and meeting with local Chambers of Commerce.
- Meetings with governmental authorities as requested for special interests.
- Meetings with local business owners.
- Meetings with employees.
- Presentations to stakeholders about the project and its development progress if requested.
- The newsletters that include project updates, achievements, and community events.

Table 4 Potential Level of Interest and Influence Over the Project

Level of Interest in Project	Ability or Likelihood to Influence the Project		
	High	**Medium**	**Low**
High	- Royal Commission for Jubail and Yanbu Environmental Protection and Control Department - Citizens of the surrounding areas to be addressed through interaction with the RC	- Local/Regional Chamber of Commerce - High Commission for Industrial Security (HCIS)	- Local Business - Workers
Medium	- Ministry of Labor and Social Affairs - Ministry of Health	None	- Press and media - Surrounding Industries
Low	None	- National Commission for Wildlife Conservation and Development (NCWCD)	Academic Institutions

- Formal grievance responses via Grievance Mechanism, outlined in this SEP.
- Press releases through available media outlets.

Topics of discussion may include business updates and key business issues (e.g., road safety, EHSS risks, owner/operator EHSS policies, public health, environmental awareness, etc.).

10.4 Stakeholder Engagement Program and Communication

Table 5 below describes the stakeholder engagement program and communication set out for the project.

Table 5 Stakeholder Engagement Program Communication Plan

Stakeholder Group	Means of Engagement and Communication	Proposed Media	Responsibility	Frequency
Governmental Authorities and Agencies				
Royal Commission Industrial Investment Department	Direct meetings and telephone conversations	In person, telephone, online meetings	Project Director	Quarterly

Stakeholder Group	Means of Engagement and Communication	Proposed Media	Responsibility	Frequency
EPCD	Direct meetings and telephone conversations	In person, telephone, online meetings	Project Manager of the Demolition Managing Contractor	Quarterly
High Commission for Industrial Security (HCIS)	Direct meetings and telephone conversations	In person, telephone, online meetings	Project Manager of the Demolition Managing Contractor	As needed throughout lifetime of the project
National Center for Environmental Compliance (NCEC)	Coordinated through the Royal Commission EPCD	In person, telephone, online meetings	Project owner's Stakeholder Liaison Officer working with RC EPCD	As needed or requested by NCEC
SABIC Industrial Security and Environment Department	- Ongoing working linkages with the Department - Communication with authorities through meetings and presentations	In person, telephone, online meetings	Project owner's Stakeholder Liaison Officer, EHSS Manager, and SHEM Policies	As needed throughout lifetime of the project
Other External Stakeholder Groups (as needed or requested)				
Local Chambers of Commerce	- Communication with authorities through meetings and presentations - Email and phone	Project owner's websites Regional newspaper/TV and Radio station	Project owner's Stakeholder Liaison Officer	As needed throughout lifetime of the project
Business and workers' organizations	- Coordination through the RC Departments and/or SABIC Business Affairs Department	In person, telephone, online meetings Project owner's websites Regional newspaper/TV and Radio station	Project owner's Stakeholder Liaison Officer	As needed throughout lifetime of the project
Press and media	- Communication via meetings - Email and phone			As needed throughout lifetime of the project
Academic institutions (universities, think tanks, schools)	- Communication via meetings - Email and phone			When asked for assistance or to provide training
Internal Stakeholders				
IBN RUSHD management and staff	Annual Meetings email list serves Grievance procedure	In person, telephone, online meetings	Project owner's Stakeholder Liaison Officer	Throughout lifetime of the project
Future contractors and subcontractors, service	- Newsletters and phone calls - Meetings	In person, telephone, online meetings	Project Manager of the Demolition Managing Contractor	Throughout lifetime of the project although

Stakeholder Group	Means of Engagement and Communication	Proposed Media	Responsibility	Frequency
providers, local vendors, and suppliers	- Staff and supplier training and induction sessions, including feedback and grievance mechanism - Information on request to contractors and subcontractors - Code of conduct (for Demolition Contractor) - Special information on speed limits, timing of routes, driver safety (for Demolition Contractor)			agreements with individual vendors and other subcontractors may change due to market pressures

10.5 External Grievance Mechanism

The objective of a grievance procedure is to ensure that all comments and complaints from any project stakeholder, including local/regional authorities, residents of nearby residential areas, IBN RUSHD facility employees, Demolition Contractors' and Subcontractors' staff, equipment and materials suppliers, and other interested parties are considered and addressed in an appropriate and timely manner. All grievances will be acknowledged and responded to within a reasonable timeframe.

Prior to the beginning of demolition, the IBN RUSHD management will appoint a Stakeholder Liaison Officer(s) (SLO). The EHSS department for the IBN RUSHD and the Demolition Contractors, in cooperation with the SLO will participate in any interactions, meetings, telephone calls, etc. with External Stakeholders to ensure that their concerns or requirements are understood and that systems for documenting compliance with those requirements are being achieved. The interactions with the public will be directed through relevant departments of the Royal Commission. Announcements will be made through contacts with local government leaders, labor camp directors, and the public residing in the area through interactions with the Royal Commission.

The project owners will accept all comments and complaints associated with the project. A sample of a Comments and Complaints Form is shown in Appendix A. The comments and complaints will be summarized and listed in the Complaints/Comments Logbook, containing the name/group of the commenter/complainant, the date the comment was received, a brief description of issues, information on proposed corrective actions to be implemented (if appropriate) and the date of response sent to the commenter/complainant.

All comments and complaints will be responded to either verbally or in writing, in accordance with the preferred method of communication specified by the complainant in the Comments

and Complaints Form. Comments will be reviewed and accounted for at project initiation; however, they may not receive an individual response unless requested.

The project owners will acknowledge all complaints within a one-week period. It is possible that responding to the complaint itself may take longer than one week to implement, and in those instances the project owners will inform the complainant within one week of what actions will be taken and when.

10.6 Roles and Responsibilities

The SLO will have the overall responsibility for consulting and communicating with the relevant departments of the Royal Commission, collecting and processing comments/complaints, and responding to any such comments and complaints. Depending on the nature of a comment/complaint, some comments or complaints will be provided to the appropriate person in the company for a response. The process will be managed through the functions of the Royal Commission.

11. APPENDIX A: COMMENTS AND COMPLAINTS SAMPLE FORM

Form For Comments, Complaints and Reports of Individuals

Reference No:	
Full Name	
Contact Information and Preferred method of communication Please mark how you wish to be contacted (mail, telephone, e-mail).	☐ **By Post (Please provide mailing address)** _____ _____ _____ ☐ **By Telephone:** _____ ☐ **By E-mail:** _____
Description of Incident or Grievance:	What happened? Where did it happen? Who did it happen to? What is the result of the problem? Source and duration of the problem?
Date of Incident / Grievance	
	☐ **One time incident/grievance (date: _____)** ☐ **Happened more than once (how many times? _____)** ☐ **On-going (currently experiencing problem)**
What would you like to see happen to resolve the problem?	

Signature: _____

Date: _____

Please return this form to: [Mr/Mrs. XXXXXX], [ROLE and DEPARTMENT],

Address: _____ Telephone: _____

Or E-mail: _____

Site Name	IR
Region	Middle East / Africa

Sr#	Date (when waste leaves the site) (MM/DD/YY)	Waste Description	Waste Classification (dropdown list)	Waste Discarded Quantity (Ton)	Waste Recovery OR Disposal Location (dropdown list)	Waste Management (dropdown list)	Waste Recovery Method (As per GRI 306-4) (dropdown list)	Waste Dsiposal Method (As per GRI-306-5) (dropdown list)	Identify (Other) Recovery OR Disposal Operation Method	Is the Waste Materials Sold or Disposed Without Any Cost on SABIC site ? (Yes / No)	Name of 3rd Party Waste Disposal/ Treatmen Facility
1	1-Jan-23	HYDRO CARBON Example	Non-Hazardous Waste	4	Offsite	Waste Disposal		Other Disposal Operation Method	Feed reception-Physical treatment & oil water separation-gas emission scrubber-clean gas discharge- oil recycle	No	RC approved contractor

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OUT خروج IN دخول

MATERIAL DESTINATION جهة وصول المواد :

COMPANY NAME اسم الشركة: NUMBER الرقم :

COMPANY ADDRESS عنوان الشركة: DATE التاريخ:

رقم المعدة EQUIP.NO	الكمية QUANTITY	DESCRIPTION البيان	الوزن WEIGHT
		TOTAL GROSS WEIGHT إجمالي الوزن	
Notes الملاحظات			

أكمل البيانات بواسطة السائق المستلم
TO be completed by Driver /Receiver

Name and ID#	الاسم ورقم البطاقة
Vehicle Plate #	رقم لوحة المركبة
Date and Time #	التاريخ والوقت
Signature #	التوقيع

أكمل البيانات بواسطة الشاحن
Tobe completed by Shipper

Reason for shipping material / equipment	سبب شحن المعدات / الآلات
Our teference number / P.O. number	رقم الإشارة
Will these items be returned ?	هل ستعاد المعدات ؟
No ( ) لا yes ( ) نعم	
Expected material return date	اليوم المتوقع لا عادة الآلات
Remarks	ملاحظات
Name and ID #	الاسم ورقم البطاقة
Signature	التوقيع

أكمل البينات بواسطة الأمن
To be completed by Security

Security Name and ID No	الاسم ورقم البطاقة
Date and Time	التاريخ والوقت
Signature	التوقيع

TO be completed by Approver	أكمل البينات والموافقة
I.D. No رقم البطاقة	Approval موافقة (القسم)
Signature التوقيع	Name الاسم

Demolishing Project EHSS-F-13 Rev.: 00 Date: 30 May 2023 1 of 1	**PROJECT EHSS GUIDELINES** **CHECK LIST FORM**	ابن رشد ibn rushd

CHECK LIST

Vehicle مركبة	Truck شاحنة	Vacuum Truck شاحنة شفط	ISO Tanker صهريج معزو	Crane رافعة	Another اخرى
☐	☐	☐	☐	☐	☐

Trauk kind نوع المركبة		**Plate or Equipment No#** رقم اللوحة او رقم المعدة	
Driver's Name اسم السائق		**Iqama Or civil ID No#** رقم الإقامة أو البطاقة المدنية	
DATE التاريخ		**TIME IN** وقت الدخول	

DRIVER	Yes نعم	NO لا	N/A غير مهم	**السائق**
Driver has a valid driving license				السائق يحمل رخصة قيادة سارية.
Driver has a valid Iqama/Civil ID				السائق لديه اقامة او بطاقة مدنية سارية.
Driver has a valid Company ID				السائق لدية بطاقة الشركة سارية.
Driver's health condition is good				السائق بحالة صحية جيدة
Driver has the delivery note				السائق لدية مذكرة التسليم
Driver has the MSDS.				السائق لدية بيان معلومات السلامة للمواد الخطرة
Driver has the PPE				السائق يمتلك ادواة السلامة الشخصية
Driver has mobile divice				السائق يمتلك جهاز جوال
Driver has Prohibited tools				السائق يمتلك ادوات محضورة
VEHICLE				**المركبه**
Lights&signals working properly				الانارة والاشارات الضوئية تعمل بصورة جيده
Truck has a good condition tire				اطارات الشاحنة بحاله جيده
There is any Apparent leak for oils				هناك أي تسرب واضح للزيوت.
Truck has an excessive corrosion.				الشاحنه يوجد بها تاكل واضح
Truck has old accident Impact				الشاحنه بها اثر لحادث سابق
Plant entry sticker available.				يوجد تصريح دخول المصنع
There is reverse horn.				يوجد انذار عند الرجوع للخلف
Steering lock is available				جهاز قفل المقود متوفر.
Two(ABC) fir extinguisher.				طفايه حريق نوع ABC (عدد 2)
Truch has gas cylinder or gas grill.				الشاحنه بها اسطوانه غاز او موقد غاز.
Worning traffic cones and hazard triangle available.				يوجد اقماع تحذيرية ومثلث الخطر
Reflection sticker available on chemical truck.				يوجد ملصقات عاكسة على الشاحنة الكيميائية
Hazard lables visible on chemical Truck.				يوجد ملصقات بيان خطورة المادة على الشاحنة الكيميائية
Tank color matches specification (White)				لون الصهريج متوافق مع المواصفات (ابيض)

INSTRACTION FOR DRIVER — تعليمات لسائق المركبة

Don't exceed the speed of 20 km/h .	لا تتجاوز سرعة 20كم/ساعة.
Always wear setbelt.	دائما اربط حزام الامان.
Follow posted signs and travel througt designated roads.	اتبع الاشارات التحذيرية وقد المركبة من الطرق المعنية.
Don't drive without an escort.	لا تقد المركبة الا مع وجود مرشد .
Never leave the truck unattended with the engine running.	لا تترك المركبة والمحرك في حال التشغيل.
Never reverse your truck without flagman.	لا ترجع المركبة للخلف الا بوجود شخص موجه.

☐ **The instraction have been explained to driver and he fully inderstood.**
تم شرح تعليمات السلامة للسائق واستوعبها جميعا

Allowed to enter the plant ☐ يسمح بالدخول للمصنع

Not allowed to enter the plant ☐ لا يسمح بالدخول للمصنع

comments/الملاحظات: .....

Security Men Name اسم رجل الامن _____ **Signature:** التوقيع _____

Dept. employee (escort) :- اسم الموظف المرافق _____ **ID.Number/** رقم البطاقة _____ **Signature:** التوقيع _____

Has been re-personal purposes for driver:- تم اعادة اغراض السائق الشخصية	Yes نعم	NO لا	Not available لا يوجد
	☐	☐	☐

Driver Signature: توقيع السائق _____

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1. Name of the Unit (Zone): .....

2. a) Date of the incident (DD/MM/YY): ...../...../..... b) Time of the incident: .....:..... AM/PM

3. a) Location: ..... b) Equipment Tag #: .....

4. a) Type & Category of incident:

☐ Company employee, ☐ Contractor

Types: Safety	Process Safety	Health	Environment	Security
Safety categories ☐ Occupational Injury ☐ Property Damage ☐ Fire/Explosion	API 754 ☐ Tier 1 ☐ Tier 2 ☐ Tier 3	**Health categories** ☐ Occupational Illness	**Environment categories** ☐ Hazardous Chemicals/Substance ☐ Non-Hazardous Chemicals/Substance ☐ Vent/Stack Emission ☐ Sea/Canal/River/Storm /Rainwater ☐ Waste water ☐ Ground Water / Soil ☐ Smoky flaring ☐ Noise ☐ Radioactive material	**Security categories** ☐ Information ☐ Electronic System ☐ Personnel/ Physical
Occupational injury subcat.* ☐ Fatality ☐ Lost Workday ☐ Restricted Workday ☐ Medical Treatment ☐ First Aid		**Occupational illness subcat.*** ☐ Fatality ☐ Lost Workday ☐ Restricted Workday ☐ Medical Treatment ☐ First Aid		

* Refer to Injury/Illness Classification Guidelines and if multiple injured persons please add no. of injuries and subcat.

b) Duration of Spill/ Release:..... Hours ☐ Indoor ☐ Outdoor

c) Name of Chemical(s) and composition: .....

d) Quantity of Spill/ Release: Total : ..... Kg In any one hour : ..... Kg

e) Wind Direction: ..... f) Wind Speed: .....

g) Estimated Direct Cost of Damage total: .....$

6a. Overall Severity of Incident: (Refer to EHSS Incident Severity Determination Guidelines)

Class A ☐ Class B ☐ Class C ☐ Class D ☐ Class E ☐

8. Process Safety Event (fill out for all Loss Of Primary Containment):

a) Was it a release from a process ? ☐ Yes ☐ No If No Describe why (refer to exclusions (a to l) in chapter 1.3 of the API 754 guideline) :

b) was the release via ☐ Engineered Direct Pressure Relief ☐ Via Downstream Device ☐ Regulated Source ☐ Other

c) Did the release cause : ☐ Rainout ☐ Discharge to Potential Unsafe Location ☐ Non Precautionary Onsite Shelter Or Evacuation ☐ release outside of Secondairy Containment ☐ Official Community Measures, if yes for .... hrs

d) Did the release cause Injury, death of aquatic or land based wild life ? ☐ small scale ☐ medium scale ☐ large scale

e) Type of Process Safety Event API 754 Tier 1 ☐ Tier 2 ☐ Tier 3 ☐

f) Severity of API 754 PSE Tier 1 (APPENDIX D-Tier 1 PSE Severity Weighting): .....

g)Estimated Direct Cost of Damage due to: ..... $ ☐ Fire ☐ Explosion ☐ Off-site Environmental Impact

10. Description of incident:

11. Immediate Action(s) Taken:

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Prepared by:..... ....

NAME POSITION SIGNATURE DATE

Approved by:..... ....

NAME POSITION SIGNATURE DATE

Team Investigation Required: Yes ☐ No ☐

رقم الحادث:.....

النموذج الموحد للتبليغ عن الحوادث والتسربات بالمنشآت الخاضعة لإشراف الهيئة العليا للأمن الصناعي

اسم المنشأة التي وقع بها الحادث: موقعها:							
مكان الحادث:							
يوم ( ) وتاريخ الحادث(/ /) الموافق(/ /) وقت الحادث (:) وقت انتهاء الحادث (:)							
نوع الحادث:	☐ حريق	☐ تسرب	☐ إصابة عمل	☐ وفاة	☐ إنذار	☐حادث	أخرى ..☐.....
أسباب الحادث:							
تأثير الحادث على سير العمل:							
الأضرار المادية والبشرية:							
الإجراءات التي تم اتخاذها للسيطرة على الموقف:							
الجهات التي شاركت في الحادث:							
ملاحظات:							
هذا التقرير : أولي ( ) نهائي ( )							

المبلغ عن الحادث مسئول الأمن الصناعي

الإسم:

الوظيفة:

التوقيع:

الإسم:

الوظيفة:

التوقيع:

EHSS INCIDENT STATISTICS

Reporting SABIC Entity: IBN RUSHD

Month / Year: January 2024

0 0

Incident Summary

Incidents Log

Incident Category Totals	Class A		Class B		Class C		Class D		Class E	
	month	YTD	month	YTD	month	YTD	month	YTD	month	YTD
Process Safety	#VALUE!	#VALUE!	0	0	#VALUE!	#VALUE!	0	0	0	0
Environment	0	0	0	0	0	0	0	0	0	0
Health	0	0	0	0	0	0	0	0	0	0
Safety	0	0	0	0	0	0	0	0	0	0
Security	0	0	0	0	0	0	0	0	0	0
Grand Total	#VALUE!	#VALUE!	0	0	#VALUE!	#VALUE!	0	0	0	0

Instructions
- review / validate all data on yellow

I&I Rates	Recordable Incident Rate		
	SABIC Employees	Outsourced Contr.	Total
Monthly	0.000	0.000	0.000
YTD	0.000	0.000	0.000

KPIs		SIR	Tier 1 PSE Rate	Tier 2 PSE Rate
Monthly		0.000	#VALUE!	0.000
YTD		0.000	#VALUE!	0.000

Process Safety Incidents

Description	Class A		Class B		Class C		Class D		Class E	
	month	YTD	month	YTD	month	YTD	month	YTD	month	YTD
Tier 1	#VALUE!	#VALUE!	0	0	#VALUE!	#VALUE!				
Tier 2			0	0	0	0				
Tier 3							0	0		
Lower severity LOPC***	0	0	0	0	0	0	0	0	0	0

Environmental Incidents

Description	Class A		Class B		Class C		Class D		Class E	
	month	YTD	month	YTD	month	YTD	month	YTD	month	YTD
Hazardous Chemicals / Substa	0	0	0	0	0	0	0	0	0	0
Non- Hazardous Chemicals / Su	0	0	0	0	0	0	0	0	0	0
Vent / Stack Emission	0	0	0	0	0	0	0	0	0	0
Sea / Canal / River / Storm / Rai	0	0	0	0	0	0	0	0	0	0
Waste Water Release	0	0	0	0	0	0	0	0	0	0
Ground Water / Soil Contamina	0	0	0	0	0	0	0	0	0	0
Smoky Flaring	0	0	0	0	0	0	0	0	0	0
Noise	0	0	0	0	0	0	0	0	0	0
Radio Active Material	0	0	0	0	0	0	0	0	0	0

EHSS Observations

EHSS Observations									0	0

Health Incidents

Description	Class A		Class B		Class C		Class D		Class E	
	month	YTD	month	YTD	month	YTD	month	YTD	month	YTD
Illness	0	0	0	0	0	0	0	0	0	0

Safety Incidents

Description	Class A		Class B		Class C		Class D		Class E	
	month	YTD	month	YTD	month	YTD	month	YTD	month	YTD
Occupational Injuries	0	0	0	0	0	0	0	0	0	0
Fires / Explosions	0	0	0	0	0	0	0	0	0	0
Property Damage	0	0	0	0	0	0	0	0	0	0

Security Incidents

Description	Class A		Class B		Class C		Class D		Class E	
	month	YTD	month	YTD	month	YTD	month	YTD	month	YTD
Security	0	0	0	0	0	0	0	0	0	0

Injury / Illness Statistics - SABIC Employees (Direct Hire Employees and Leased Contractor Employees)

	Manhours	Number of Recordable Injuries					Number of Recordable Illnesses					Number of First Aid		Number of Days of Lost Work	Number of Days of Restricted Work
		Fatalities	LW	RW	MT	Total	Fatalities	LW	RW	MT	Total	Injury	Illness		
Monthly	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YTD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Injury / Illness Statistics - Outsourced Contractor Employees

	Manhours	Number of Recordable Injuries					Number of Recordable Illnesses					Number of First Aid		Number of Days of Lost Work	Number of Days of Restricted Work
		Fatalities	LW	RW	MT	Total	Fatalities	LW	RW	MT	Total	Injury	Illness		
Current Month	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Year To Date	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Injury / Illness Statistics - All Workers

	Manhours	Number of Recordable Injuries					Number of Recordable Illnesses					Number of First Aid		Number of Days of Lost Work	Number of Days of Restricted Work
		Fatalities	LW	RW	MT	Total	Fatalities	LW	RW	MT	Total	Injury	Illness		
Current Month	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Year To Date	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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The Severity Classification of each EHSS incident shall be based on the following matrix, based on the worst consequences of the incident:

Consequence	Class "A"	Class "B"	Class "C"	Class "D"	Class "E"
PROCESS SAFETY All LOPC events based on API-754 and SABIC selection	Tier-1 with Severity ≥ 9	Tier-1 with Severity ≥ 3 - < 9	Tier-1 with Severity < 3 or Tier-2*	Tier-3** or any lower severity LOPC***	
	* **Tier-3 as reportable has a threshold quantity of 10% of Tier 2 and a FE Direct Cost threshold of US$10,000. ***LOPC events that are below Tier-3 threshold or on-site non-Hazardous chemicals, ancillary systems and chemical portable containers (not yet connected to process) LOPC events that have been excluded from reporting in API 754 Annex A.2 (Applicability) shall be reported minimum as "Class D" Process Safety No Tier / Non-API 754 Events unless the event has more sever secondary consequence then it shall be classified accordingly. Routine emissions from permitted or regulated sources (if accepted by permit) and personal safety events that are not directly associated with on-site response or exposure to LOPC events stay excluded.				
INJURY *Based on OSHA (29 CFR 1904)*	Fatality	Lost Workday Restricted Workday	Medical Treatment	First Aid	
	Occupational injury: Any physical harm that resulted from instantaneous single exposure event to chemical, physical, or biological agents in the work environment.				
FINANCIAL	Direct Loss (excluding Production loss) > US$ 10 Million	Direct Loss (excluding Production loss) US$ 1,000,000 - 10 Million	Direct Loss (excluding Production loss) US$ 100,000 - 1,000,000	Direct Loss (excluding Production loss) < US$ 100,000	
ENVIRONMENT	LOSC of Hazardous Materials (without TQ) ≥ 10 MT	LOSC of Hazardous Materials (without TQ) ≥ 1 - < 10 MT	LOSC of Hazardous Materials (without TQ) ≥ 0.1 - < 1 MT	LOSC of Hazardous Materials (without TQ) < 0.1 MT	

Consequence	Class "A"	Class "B"	Class "C"	Class "D"	Class "E"
	LOSC of Non-Hazardous Materials > 10 MT outside of SABIC property	LOSC of Non-Hazardous Materials > 10 MT	LOSC of Non-Hazardous Materials ≥ 1 - < 10 MT	LOSC of Non-Hazardous Materials < 1 MT	
	Pollution requiring remediation of ≥ 500 MT of contaminated soil / groundwater	Pollution requiring remediation of ≥ 50 - < 500 MT of contaminated soil / groundwater	Pollution requiring remediation of ≥ 5 - < 50 MT of contaminated soil / groundwater or groundwater monitoring wells above applicable regulatory/permit limit value/base line	Pollution requiring remediation of < 5 MT of contaminated soil.	
	Water discharge parameter from the facility above 500% of applicable regulatory/permit limit value	Water discharge parameter from the facility ≥ 200% - < 500 % of applicable regulatory/permit limit value	Water discharge parameter internally or from the facility outside of applicable regulatory/permit limit value	Water discharge parameter not meeting the expected internal control limits	
			Noise level at the facility border > than applicable regulatory/permit limit value at the fence of the SABIC property.		

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Consequence	Class "A"	Class "B"	Class "C"	Class "D"	Class "E"
Non Compliance / violation issued by the Authority *(written or Verbal)*		Issue of Notice of violation(s) with penalty > US$ 1,000,000 OR Environmental cleanup cost > US$ 1,000,000	Issue of Notice of Violation with Penalty of US$ 100,000 - 1,000,000 OR Environmental cleanup cost is US$ 100,000 - 1,000,000	Issuance of Non-Compliance / Notice of Violation without any Penalty or with penalty < 100,000 US$ OR and Environmental Cleanup cost ≤ US$ 100,000 OR Issuance of Warning Letter	

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Consequence	Class "A"	Class "B"	Class "C"	Class "D"	Class "E"
HEALTH / ILLNESS	Fatality From an **occupational exposure***	Health effects due to **occupational exposure*** resulting in any of the following: - Permanent Total Occupational Disability - Permanent Partial Occupational Disability	Health effects due to **occupational exposure*** resulting in Medical Treatment or occupational hearing loss such as: - Any treatable occupational illnesses (reversible health effects) e.g. irritation/ inflammation illnesses (needing medical treatment), poor vision related impairment, etc. - Confirmed occupational Standard Threshold Shift (STS) cases.	- Health effects due to an **occupational exposure*** resulting in first Aid treatment not causing any immediate disabilities nor chronic diseases. OR - Any **occupational** chemical and/or physical (e.g. such as noise, vibration, heat, cold, electromagnetic fields, lighting) release/exposure over the Occupational Exposure Limit (OEL) without health effects. OR - Any temporary hearing loss (conductive hearing loss) within 21 working days from the initial diagnosis.	

- Occupational Exposure:

The exposure to potentially harmful chemical, physical, or biological agents that occurs as a result of employee's occupation.

- Occupational illness:

Any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to factors associated with employment and/or work environment such as noise induced hearing loss, contact dermatitis, ergonomic aspects etc. It includes acute and chronic illnesses or disease that may be caused by inhalation, absorption, ingestion, or contact.

- Permanent Total Occupational Disability /Permanent health Disability:

It is the disability that totally and permanently prevents the contributor from engaging in any work or profession with a disability percentage of 100%. Such percentage is determined by the authoritative SABIC medical Board, Physician or licensed health care professional.

- Permanent Partial Occupational Disability /Irreversible Partial Disability:

It is the disability caused by occupational injury or disease and reduces the earning capacity of the contributor. The disability degree is equivalent to or exceeding 50% but less than 100%; such percentage is determined by the authoritative SABIC medical Board, Physician or licensed health care professional.

- Temporary hearing loss (Conductive Hearing Loss):

Hearing loss occurs in the outer or middle ear where sound waves are not able to carry all the way through to the inner ear. Sound may be blocked by earwax or a foreign object located in the ear canal; the middle ear space may be impacted with fluid, infection or a bone abnormality; or the eardrum may have been injured.

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Consequence	Class "A"	Class "B"	Class "C"	Class "D"	Class "E"
SECURITY	Any malicious or irresponsible act resulting in any Class A consequences OR Any loss or theft of company property resulting in Class A financial consequences OR Any loss or theft of Regulated radioactive sources of "Category 1" according to the IAEA-standard	Any malicious or irresponsible act resulting in any Class B consequences OR Any loss or theft company property resulting in Class B financial consequences OR Any loss or theft of Regulated radioactive sources of "Category 2 & 3" according to the IAEA-standard	Any malicious or irresponsible act resulting in any Class C consequences OR Any loss or theft company property resulting in Class C financial consequences OR Any loss or theft of Regulated radioactive sources of "Category 4 & 5" according to the IAEA-standard	Any malicious or irresponsible act resulting in any Class D consequences OR Any event that has not resulted in negative consequences, but security measures have been circumvented, eluded, or violated OR Any loss or theft of company property resulting in Class D financial consequences	
	• Workplace violence cases shall be reported in eSHEM by the site. Classification of such events resulting in fatality/injury shall be determined by a multi-discipline committee formed by Global Security based on severity and SABIC level of control over the event in compliance with OSHA and local regulations. • Global EHSS and legal counsel shall be notified and consulted in case of any lost or theft of Scheduled/non-scheduled Chemicals regulated under the Chemical Weapons Convention. Any loss or theft of Schedule Chemicals regulated under the Chemical Weapons Convention requires forming a committee by Global EHSS & legal as applicable. • For information security & electronic system security incidents classifications refer to the guidance under section 4.2.1.				

Attachments

(3)

خطة الإدارة والمراقبة البيئية لابن رشد (EMMP)

Environmental Management and Monitoring Plan for IBN RUSHD (EMMP)

Environmental Management and Monitoring Plan Report

For the Project of

Retired Assets Dismantling, Demolition, Excavation, Removal and Disposal of the Arabian Industrial Fibers Company (IBN RUSHD) in Yanbu Industrial City

Prepared By: ARM Associates

Prepared For: IBN RUSHD

31 January 2023

Report Title	Environmental Management and Monitoring Plan for IBN RUSHD
Status	Final Report
Client Company Name	IBN RUSHD
Issued by	ARM Associates

Document Production / Approval Record

Issue No: 2	Name	Date	Position
Prepared by	Zahra Alshajjar	31 December 2022	Environmental Engineer
Checked by	Mohsen Alami	1 January 2023	General Manager
Approved by	Mark Saeger	3 January 2023	Director Environment Division

Document Revision Record

Issue No	Date	Details of Revisions
01	3 January 2023	Preliminary Draft for Client Review
02	24 January 2023	Response to Client Comments
03	31 January 2023	Response to Second Round of Client Comments

Approved for Issue on 31 January 2023

Mark Saeger

Director Environment Division

Disclaimer

ARM has prepared the present Report for the exclusive use of IBN RUSHD hereinafter referred to as the Client and in compliance with the contract under which ARM provided their services. These services have been performed with due diligence and no other warranty express or implied may be inferred from the professional advice given by ARM. No person except the Client may make use or base himself on this Report without prior and express consent in writing from ARM. Unless specified in some other manner within this Report, the assessments and judgements set forth herein assume that the establishment and facilities involved shall continue being made use of for the present purposes without significant changes.

The conclusions and recommendations contained in the present Report are based on information provided by third parties. Unless otherwise specified the information obtained from those third parties has not been independently verified by ARM.

In those instances where field research has been conducted the research has been restricted to the level of detail appropriate for achievement of the aims set forth in the contract.

Released for Issue, 31 January 2023

Mark Saeger

Director Environment Division

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Acronyms

Abbreviation	Definition
ARM	ARM Associates Consulting Company
DEMP	Demolition Environmental Management Plan
EHSS	Environment, Health, Safety, and Security
EMMP	Environmental Monitoring and Management Plan
EPCD	Environmental Protection and Control Department
KSA	Kingdom of Saudi Arabia
MSDS	Material Safety Data Sheet
NCEC	National Center for Environmental Compliance
NCWCD	National Commission for Wildlife Conservation & Development
PPE	Personal protective equipment
RC	Royal Commission
RCER	Royal Commission Environmental Regulations 2015
SEP	Stakeholder Engagement Plan
SLO	Stakeholder Liaison Officer
WMF	Waste Management Facility
WWTP	Wastewater Treatment Plant
YIC	Yanbu industrial City
Units of Measure	
km/h	Kilometer per hour
L	Liters
m/s	Meters per second
tpy	Tons per year

1. INTRODUCTION

1.1. Project Understanding, Overview and Background

ARM Associates has been commissioned by IBN RUSHD to prepare an Environmental Management and Monitoring Plan (EMMP), for the Dismantling, Demolition, Excavation, Removal and Disposal of all the retired assets in the Arabian Industrial Fiber Company, IBN RUSHD in Yanbu Industrial City.

This EMMP seeks to identify and list the key activities that will be carried out to guide the demolition process to ensure that risks to the local environment are mitigated and consistent with the requirements of Royal Commission Environmental Regulation 2015 (RCER 2015), and where applicable or relevant to the national regulatory requirements established by the National Center for Environmental Compliance (NCEC). Any interactions with the NCEC will be managed and coordinated through the RC EPCD.

The project has been conducted to meet the RCER 2015 requirements for projects conducted within the Yanbu Industrial City (YIC).

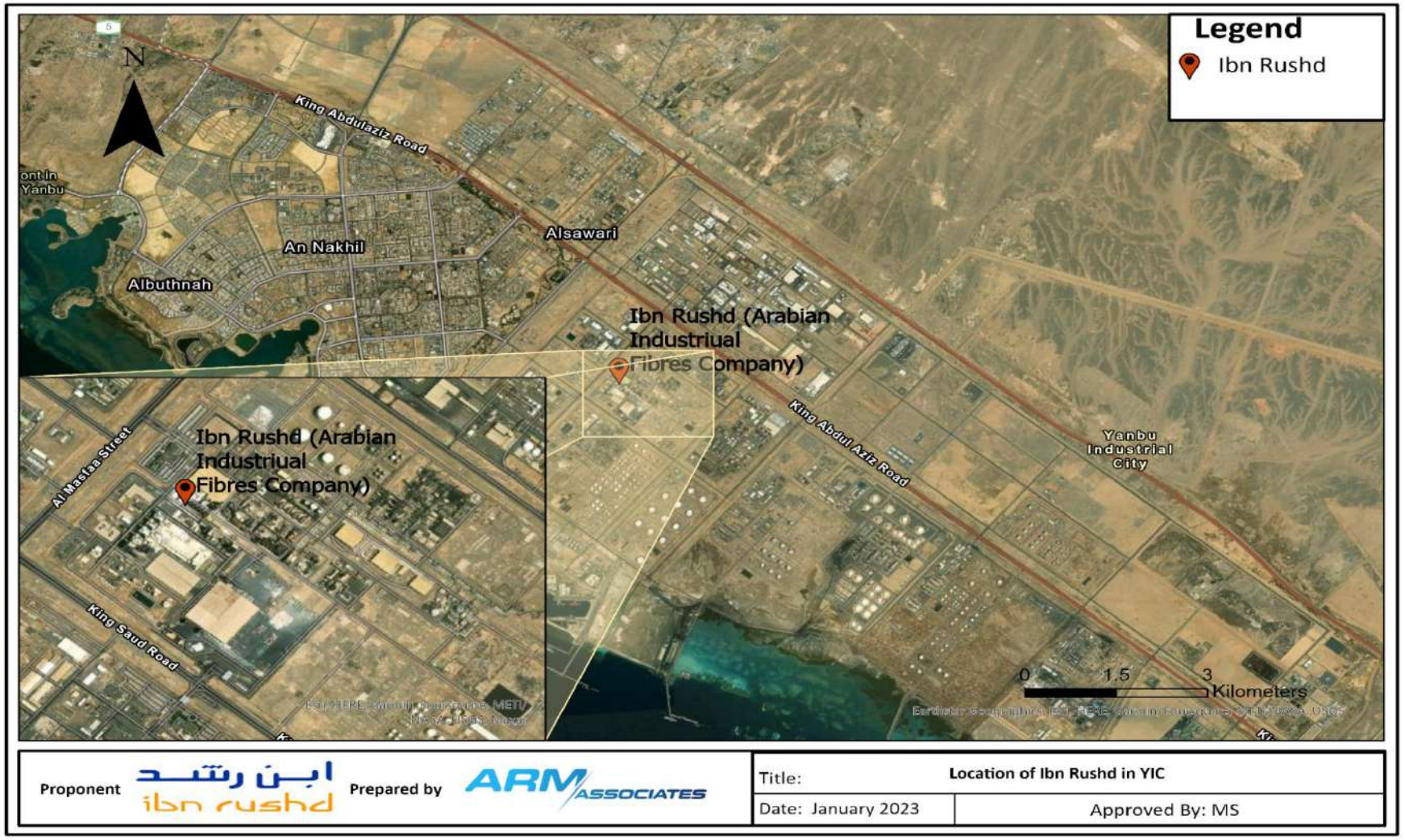
1.2. Data Sources

The environmental impact reports previously prepared for the project and the documents provided by IBN RUSHD were taken into account. The IBN RUSHD site was visited to collect data and document the current conditions and to improve understanding of the process and the potential for impacts during demolition. Additional data were obtained from the literature.

1.3. Project Location

The facility is located in Yanbu Industrial City (YIC). The general location of the IBN RUSHD plant with respect to Yanbu Industrial City is shown in Figure 1.

Figure 1 Location of IBN RUSHD in YIC



2. BACKGOUND ON THE ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN (EMMP)

2.1 Propose

The purpose of the EMMP is to provide a prescribed set of actions, procedures, audits, training, and monitoring requirements to guide the demolition of the facilities. The EMMP will serve as the principal means by which environmental issues will be monitored, controlled, and audited during the Project's Dismantling, Demolition, Excavation, Removal and Disposal phases and shall apply to all contractors. The EMMP shall include procedures for implementing all identified mitigation measures, and will provide, as a minimum, the following procedures:

- Identify roles and responsibilities, legislation, applicable emission limits for pollutants and an auditing program.
- Identify any potential or actual environmental aspects and adverse conditions.
- Set out a chain of command outlining roles and responsibilities of personnel in relation to implementation, management and review of the project and its related activities.
- Demonstrate commitments of all contractors and aspects of the demolition effort to protect the environment.
- Provide procedures describing the management, monitoring and mitigation measures of potential and actual adverse impact.
- Identify a set of mitigation measures to be taken during the work to eliminate adverse environmental impacts, offset them, or reduce them to acceptable levels.
- Define plans for reporting to IBN RUSHD, RC EPCD, and NCEC if necessary.
- Address emergency response, remedial actions, and monitoring requirements if spillage or uncontrolled emissions occur.

As a part of the EMMP specific procedures will be developed to manage and minimize the resulting environmental impacts arising from emergency events. The plan shall include specific procedures to address the following emergency situations, as a minimum:

- Identify sources of risk and develop and implement procedures to minimize risks and potential effects.
- Identify environmental incident response plan for spill response, fires, and exposure of workers to hazardous materials.
- Identify the responsibilities, resources, and procedures for interfacing with the relevant stakeholders, including site security, the Royal Commission, and IBN RUSHD.

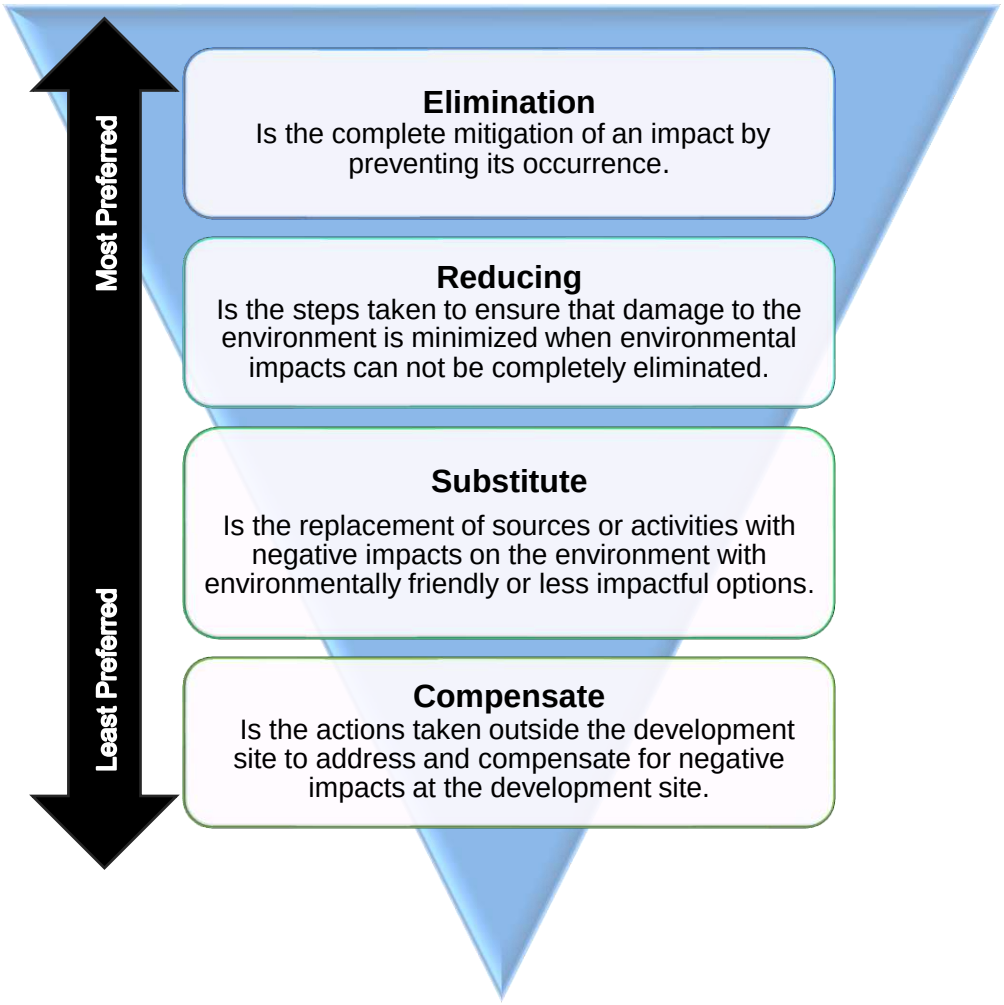
2.2 Report Structure

The report will be organized as follows:

- **Chapter 1 Introduction:** Explains the main objective of preparing the report, the sources of the information mentioned, and the location of the project.
- **Chapter 2 Background on the Environmental Management and Monitoring Plan:** Presents an overview of the EMMP's purpose, procedures will be covered, and structure.
- **Chapter 3 Demolition Environmental Management Plan:** Describes mitigation measures for significant environmental aspects during dismantling, demolition, excavation, removal, and disposal operations.
- **Chapter 4 Implementation of the Environmental Management Plans:** This section includes how, when, and where these measures will be implemented, as well as who will be responsible for them.
- **Chapter 5 Environmental Monitoring Plan:** Shows the major components of the environmental monitoring process, which are taken to verify the effectiveness of the EMMP.
- **Chapter 6 Stakeholder Engagement Plan:** Lists the stakeholders involved in this project (internal and external), their relationship to the project, and the mechanism for communicating with them for consultation or grievance procedures.

3. DEMOLITION ENVIRONMENTAL MANAGEMENT PLAN (DEMP)

This section provides a description of proposed mitigation measures that will enhance environmental protection during dismantling, demolition, excavation, removal, and disposal operations. These measures for all environmental aspects will be arranged according to the hierarchy shown below.



4.2 Noise Control

Noise generated by high noise-sources shall be measured periodically at the locations where the high noise emitting equipment is operated and at any current or future predicted hot spots along the perimeter fence of the process area in compliance with RCER 2015. The following are proposed mitigation measures to reduce noise generated during demolition efforts:

- Install noise barriers or noise-deflecting features, particularly for noise from mechanical equipment used in demolition and removal activities that have been found to have the potential to exceed permissible noise levels at the fence line.
- The Contractor shall construct acoustic screens or enclosures around any parts of the works from which excessive noise may be generated.
- The Contractor shall ensure that all mechanical equipment used in the works is effectively sound-reduced using the modern available technology such as breakers and silencers.
- To the extent possible, the asks that require large equipment use will be scheduled to avoid overlaps and to be conducted during daylight hours, and their noise will be monitored according to RCER standards.
- Activities that require crushing will be limited to daylight hours whenever possible.
- Demolition equipment and delivery trucks will be required to implement all manufacturer recommended maintenance schedules to ensure that noise abatement technologies are operating correctly at all times.
- Engine idling will be limited to periods no longer than 10 minutes.
- Schedule heavy equipment deliveries to avoid high-noise engines idling on public roads or in areas where people might gather.
- Areas within the site and within the boundaries of the project areas that have high sound pressure levels will be clearly marked and workers, suppliers, visitors, and consultants will be required to wear ear protection devices when working in these areas.
- Conduct periodic noise surveys around the perimeter to ensure that noise does not become a significant concern.

4.3 Chemicals, Fuels and Hazardous Materials Management

4.3.1 Chemicals to be Managed During Demolition

The demolition process will require the collection and management of several waste materials remaining in the mothballed process units. Some of these chemicals are categorized as hazardous or non-hazardous as defined in RCER 2015, Volume I, Section 4.1. The specific chemicals that need to be managed during the demolition process are listed in Table 1.

Table 1 List of Hazardous and Non-hazardous Materials To Be Handled During Demolition

Chemical	Hazardous Classification (1)	Quantity, tons	Special Considerations	Reuse or Recycle Options	Disposal	Responsible Party
PSA Absorbent	Non-hazardous	137.5	May form a flammable dust	Regeneration if economical and technically feasible	RC Approved Class II landfill	Demolition Subcontractor
ADS Parex Absorbent	Ignitable, toxic	581.5	Contains aromatic hydrocarbons	None	RC Approved Incineration	Demolition Subcontractor
Activated Alumina	Non-hazardous	194.52	May form a dust	Regeneration if economical and technically feasible	RC Approved Class II landfill	Demolition Subcontractor
Molecular sieve PG-363	Non-hazardous	30.78	None	Disposal	RC Approved Class II landfill	Demolition Subcontractor
Foamglas Insulation	Non-hazardous	~ 30	None	None	RC Approved Class II landfill	Demolition Subcontractor
Glycerin	Non-hazardous	3 maximum	Can ignite under high heat	None	RC Approved Incineration	Demolition Subcontractor
Ion Exchange Resin	Toxic eye and throat irritant	3	Use proper PPE	None	RC Approved Class I landfill	
Therminol 66 HTF	Toxic to aquatic life	3	Keep away from the sea	Regeneration if economical and technically feasible	RC Approved Incineration	Demolition Subcontractor
AA Plant Catalyst	Non-hazardous	85	Avoid breathing vapors, mist, or gas	Regeneration if economical and technically feasible	RC Approved Class II landfill	Demolition Subcontractor
Lubricating Oil	Ignitable	70	Open burning can release toxic fumes	Regeneration if economical and technically feasible	RC Approved Incineration	Demolition Subcontractor

4.3.2 Storage and Spill Prevention

- All hazardous materials including chemicals and fuels will be stored in designated areas on site to prevent mixing of non-compatible materials and shall be sufficient to accommodate any chemicals (powder or liquid) and be well-ventilated.
- All excavated material will be stored in designated areas away from drains.
- Fuel, oil, and chemical storage areas will be away from busy vehicle routes and stored in client-approved storage areas.
- All storage and refueling areas must be constructed to be impermeable and be surrounded by a bund wall or spill wall to prevent spills flowing outside the containment or into the underlying soil and groundwater.
- The storage areas will be inspected at least weekly and any failures in containment devices will be repaired immediately.
- Chemicals associated with the activities will be stored, handled, and disposed of in accordance with Regulatory Authority standards and as per the Material Safety Data Sheet (MSDS) of each chemical.
- All hazardous materials, including chemicals and fuels, will be kept away from the water's edge, and stored appropriately (i.e., quantities of more than 200 liters should be stored on an impermeable base within a bund capacity of holding 110% of the stored amount.
- All materials will be clearly labeled.
- Hazardous materials must be handled by operators trained and qualified in spill handling and response, including use of spill kits.
- Areas where oil, fuel and/or chemicals are used or stored will have spill kits appropriate for the materials in use within easy access. A sufficient inventory of spill kits will be maintained to allow replacement immediately after each use.
- Ensure there is adequate fire-fighting equipment in the fuel storage area.
- Adequate signage will be in place identifying hazardous material and the nature of the hazard.
- A list of all hazardous substances present on site and the material safety data sheets (MSDS) for these substances will be available at required locations/sites.
- Ensure that any fuel to be used on-site (e.g., for generators) is stored in a container (tank or drum) that is of sufficient strength and structural integrity and has been installed to

ensure that it is unlikely to burst or leak during normal use, and that was rated according to the fuel used so that static electricity and earthing requirements are met.

- Maintain absorbent materials and spill kits with all fuel transfer vehicles, maintenance vehicles, or vehicles designated for emergency response.
- Locations with a high spill frequency will be fitted with appropriate secondary containment and collection sumps. These control features will be inspected regularly by trained personnel. Hazardous spills shall not be discharged directly to the public watercourse. It shall be retained in a steel/plastic container, or in a lined, concrete pit.
- Any leaking drums or containers will be removed immediately and appropriately. The underlying soils will also be remediated if the leak caused them to become contaminated. Contaminated soils will be transported to an RC approved Waste Management Facility (WMF) for appropriate treatment and disposal.
- Empty containers will be removed from the site and will be either recycled or disposed of as hazardous material.
- All chemical containers will be placed on the dedicated yard and the accidentally spilled chemicals and/or expired chemicals will be collected and discharged at appropriate disposal sites.
- The quantities of fuel, oil and chemical that pose environmental hazards shall be minimized.

1.1.1. Spill Kits

Spill kits will be made available at strategic locations across the site (including refueling locations, and storage areas).

- The spill clean-up kit must be labeled and have appropriate signage indicating its normal location when not in use, and instructions for use must be kept within the kit.
- Sand must not be used as an absorbent, as this directly causes further environmental contamination (i.e., the sand is part of the natural environment, and becomes contaminated).
- The contents of the spill clean-up kit must be restocked after use, and contents must be checked for adequacy on a regular basis.

The following should be the minimum contents of the spill kits:

- Personal protective equipment (goggles, chemical resistant gloves, plastic, vinyl or rubber shoe covers, disposable lab coats, aprons, or coveralls).
- Clean up tools and materials (e.g., thick, heavy dust waste bags, shovel, sealing tape).
- Metal drip trays and/or quick deployment pools.

- Metal drip tray should be used for: Leaking vehicle fuel tanks, blown hydraulic lines, leaking containers and liquids used to decontaminate spill responders.
- A quick deployment pool is also an ideal and inexpensive option to place beneath a vehicle that is leaking as it can be cleaned and used again.

1.1.2. Spill Response

Spillages or leakages resulting in soil or water contamination should be considered as an environmental incident and must be cleaned up immediately to prevent it from reaching or spreading into the environment. Spills or leaks will be classified as per RCER 2015 and the SABIC Safety, Health and Environment Management Element (SHEM-10), Incident Reporting, Classification, Investigation and Analysis.

If a spill occurs, a response procedure should be followed, and a detailed contaminated land cleanup strategy shall be implemented as follows:

- Access the risk (safety, severity, and area of impact).
- Call EHSS Manager and Environmental Advisor immediately and inform:
  - Location of the incident.
  - Type of incident and severity.
  - Whether emergency services are needed.
- Contain the spill:
  - Use booms or pool to contain spill and stop it spreading.
  - Barricade incident area.
- Absorb contained fluids (with sorbents).
- Dispose of contaminated materials (be it soil, water or spill kit materials) initially into sealed drums or other containers, and then transported off-site by RC approved Waste Transporter Company to RC or NCEC approved disposal facility.
- Complete final incident report and submit to IBN RUSHD, and RC EPCD immediately after the incident response has been satisfactorily completed.

4.4 Waste Management

Demolition activities will result in the generation of a variety of waste which can be divided into distinct categories based on their constituents, as follows:

1. Demolition waste (includes materials torn down during demolition, including concrete, structural steel, aluminum, copper and other metals, plastics, e-waste, materials that have been over-ordered or are surplus to requirements for the demolition process, and materials that have been used and discarded).
2. Hazardous waste (such as oil, fuel, and chemicals).
3. General refuse (this includes food waste and its packaging, and wastepaper).

1.2.1. Waste Management Hierarchy

The various waste management options can be categorized in terms of preference from an environmental viewpoint. The options considered to be more preferable have the least impacts and are more sustainable in a long-term context. Hence, the hierarchy is as follows:

1. Avoidance and minimization, i.e., not generating waste through changing or improving practices and design.
2. Reuse of materials, thus avoiding disposal (generally with only limited reprocessing).
3. Recovery and recycling, thus avoiding disposal (although reprocessing may be required).
4. Treatment and disposal, according to relevant laws, guidelines, and good practice.

This hierarchy should be used to evaluate waste management options, thus allowing maximum waste reduction and often reducing costs. For example, by reducing or eliminating over-ordering of materials required to undertake the demolition, waste is avoided, and costs are reduced both in terms of purchasing and in disposing of waste.

In addition, The RCER 2015 specifies waste management requirements within YIC. No waste generated in YIC can be transported outside of YIC for treatment or disposal other than those returned to the vendor for reuse or those sent outside for recycling.

To the extent possible all steel, concrete, copper, other metals, plastics, e-waste, used oils and lubricating materials, solvents, and packaging materials will be segregated and sent to a licensed facility to be recycled.

The RCER Waste Manifest procedure will be followed to record the quantity of recycled e-waste, the location where it was taken for recycling, and a confirmation that the material was accepted for recycling and records will be retained for no less than 5 years.

The Contractor should incorporate these measures listed below into a comprehensive on-site waste management plan. Such a waste management plan will include site-specific factors, such as designated areas for the segregation and temporary storage of reusable and recyclable materials.

3.3.1.1. Recommended Measures for Demolition Waste

It has been estimated that approximately 150,000 – 200,000 tpy of demolition waste will arise at the plant demolition site. The following measures can be taken:

- Expired or unused materials will be minimized with careful design, planning, and inventory management to minimize over-ordering. To the extent possible individual demolition contractors will be encouraged to transfer unused materials to others to avoid excess quantities being purchased and stored on site.
- The Contractor shall separate as much as possible of the demolition waste to comply with the demolition schedule and to increase the feasibility of recycling certain components of the waste stream by recycling contractors.

- Small quantities of oil-stained concrete are expected to be generated; these will be treated as hazardous waste for disposal purposes.
- Concrete and masonry can be crushed and used as fill and the extracted steel reinforcing bar can be used by scrap steel mills. Different areas can be designated for such segregation and storage depending on site specific conditions. It should be noted that the contractor should ensure that the waste is actually recycled if the recovered materials are exported for recycling in other countries.
- Proper storage and site practices will minimize the damage to or contamination of demolition materials that may reduce their recyclability and suitability for disposal in class II landfills. On-site measures may be implemented which promote the proper disposal of wastes once off-site. For example, having separate skips for inert (rubble, sand, stone, etc.) and non-inert (wood, organics, etc.) wastes would help to ensure that the former are taken to uncontrolled landfills, while the latter are properly disposed of at controlled landfills.

3.3.1.2. Recommended Measures for Hazardous Waste

For those processes which generate hazardous waste, it may be possible to find alternatives which generate reduced quantities or even no hazardous waste, or less dangerous types of hazardous waste. Hazardous waste that is produced should be handled in accordance with the Code of Practice on the Packaging (MSDS sheets), Handling and Storage of Chemical Waste as follows:

Containers used for the storage of chemical waste should:

- Be suitable for the substance they are holding, corrosion-resistant, maintained in a good condition, and securely closed.
- Have a capacity of less than 450 L unless the specifications have been approved by EPCD.
- Display a label in accordance with instructions prescribed in RC regulations.
- All chemical containers will be placed nearby special vehicles and any accidentally spilled chemicals will be collected by vacuum truck and transported to temporary storage areas within the plant for ultimate disposal to an RC EPCD/NCEC licensed disposal facility.

The storage area for chemical waste should:

- Be clearly labeled and used solely for the storage of chemical waste.
- Have an impermeable floor and bunding, of capacity to accommodate 110 % of the volume of the largest container.
- Make sure the storage area has adequate ventilation, regardless of how much waste is stored there.
- Be covered to prevent rainfall from entering (water collected within the bund must be tested and disposed as hazardous waste if contamination is found).

- All hazardous solid and liquid waste generated during operations will be collected, appropriately segregated, and stored at each designated location(s) on a daily basis to prevent spreading to surrounding areas, mingling with non-compatible materials, or becoming harmful to surrounding people or the environment.

Treatment and disposal of chemical waste should:

- Be through a designated waste collector licensed by RC EPCD/NCEC to handle these hazardous materials.
- Be to a facility licensed to receive chemical waste, such as a hazardous waste treatment facility that also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuse facility under approval from the EPCD.

3.3.1.3. Recommended Measures for General Refuse

- General waste generated on-site and at worker accommodations will be stored in closed bins or compactors separate from demolition and hazardous waste in an orderly manner at each designated site(s).
- The burning of refuse on demolition sites or accommodations is prohibited by law.
- Food service activities at worker accommodations generate a large amount of general refuse, so reusable rather than disposable dishware should be used if feasible.
- Office waste can be reduced through the recycling of paper if volumes are large enough to warrant collection. If local collection schemes are available, they will be used.
- Aluminum cans are often recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.
- All demolition contractors shall employ a reputable waste collection company approved by EPCD to remove general waste from the site to the designated landfill location or treating facility, separately from demolition and hazardous waste every day or two to minimize odor, pest, and litter impacts.

3.3.1.4. Recommended Measures for All Types of Waste

The recommended measures that must be taken into account in all types of waste are:

- Waste should be handled and stored in a manner which ensures that they are held securely without loss or leakage thereby minimizing the potential for environmental contamination.
- Only reputable waste collectors authorized to collect the specific category of waste concerned should be employed.
- Appropriate measures should be employed to minimize windblown litter and dust during transportation by either covering trucks or transporting waste in enclosed containers.
- The necessary waste disposal permits should be obtained from the appropriate authorities.

- Collection of general refuse should be carried out frequently, preferably daily; waste should only be disposed of at licensed sites and site staff and the civil engineering contractor should develop procedures to ensure that illegal disposal of waste does not occur.
- Waste storage areas should be well maintained and cleaned regularly; and records should be maintained of the quantities of waste generated, recycled, reused, and disposed, determined by weighing each load. The RCER Waste Manifest System will be used to maintain records to allow tracking of the ultimate disposal or recycling of all waste leaving the site.
- Training and instruction of demolition staff should be given at the site to increase awareness and draw attention to waste management issues and the need to minimize waste generation. The training requirements should be included in the site waste management plan.
- The waste shall be disposed of according to RCER/NCEC requirements at an approved disposal facility (EPCD will provide a list of approved transporters and approved disposal facilities). In order to avoid illegal dumping of these waste materials into non-designated locations, all of the materials taken out from the site shall be handled by waste manifest requirements documented in RCER 2015, Volume 1, Section 5.2, which confirms the waste material has been transported to and accepted by the appropriate receiving facilities. The authorized receipts at final disposal areas/treatment facilities shall be kept in the file at the site for a period of not less than 5 years.

4.5 Air Quality

Air pollution impacts are unavoidable during any demolition project. Demolition activities result in air emissions from combustion equipment as a result of demolition, excavation, heavy lifting equipment, collection and removal of demolished materials, transport of materials to recycling or disposal sites, and the delivery of supplies and personnel.

Appropriate mitigation measures listed below will be implemented by all demolition contractors and records of maintenance, source of fuel and fuel consumption,and inspection/repairs of onsite fuel storage tanks will be produced and retained by each contractor.

- All vehicles will be inspected and certified for the intended uses.
- All vehicles will be operated in accordance with recommended procedures and subject to manufacturer recommended maintenance schedules.
- Vehicles will not be allowed to idle for more than 10 minutes.
- Use the lowest sulfur diesel fuel supplies available.
- Activities that require the use of heavy equipment will be coordinated to the extent possible to minimize the movements of this equipment.
- Deliveries of materials, supplies and workers will be coordinated to minimize the frequency of movements.
- Fuel tanks will be enclosed in secondary containment and refueling activities will be done without splash fill to the extent possible.

4.6 Dust Control

Demolition activities result in the emission of Particulate Matter (PM) into the air from vehicle movements, surface disturbances caused by heavy equipment, as well as structural demolition. The dust generated is usually from concrete, cement, wood, stone and silica.

As presented above, the demolition works are likely to cause high dust impacts at some receptors. The following dust control measures should be implemented to minimize dust nuisance to within acceptable levels arising from the works:

- Avoid large-scale vehicle movement tasks during periods when the wind speed exceeds 13 m/s.
- Frequent movement of vehicles should be on hard-pack or paved areas in the demolition zone. So unpaved surfaces must be paved or compacted during the early stages of demolition.
- Limit vehicle speed to less than 30 km/h when operating on unpacked or paved surfaces.
- Treat surfaces prone to dust generation with water when extreme conditions are present that can result in dust emissions.
- The heights from which excavated materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from collisions with other materials at the surface.
- Dusty materials should not be loaded to a level higher than the side and tail boards and should be covered before transport.
- Plan for activities to minimize the extent and duration of areas that will be affected by vehicle movements.
- Include grading to barriers (berms, silt fences) to catch runoff before reaching the area where solids can dry and turn to dust.
- Effective water sprays should be used on the site at potential dust emission sources such as active demolition areas.
- Haul roads should be regularly watered.
- Wheel washing facilities should be provided at the exit of the site.

With the above measures, it is expected that the dust emissions from the site could be reduced by 50%.

4.7 Water Discharge Control

Some measures have been taken to control the discharge of stormwater, dust control water, and sewage from the site into the Red Sea in order to comply with the standards for effluents discharged.

1.5.1. Contaminated Stormwater Control

- Contaminated stormwater shall be collected by the surface water collecting system and a dedicated stormwater basin sized for the first 30 mm of any single rain event shall be provided in order to prevent direct flow to the outside of the site boundary.
- Before discharging into RC stormwater channel, the contaminated water shall be retained in the storm water basin where it will be tested to determine if contamination exists.
- If contaminated stormwater does not meet RCER 2015 discharge standard in Table 3C, then it needs to be added to effluent flows directed to the central WWTP.
- If contaminated stormwater does not meet the discharge standard of Table B it will be sent for treatment and disposal at an RC EPCD approved WMF.
- When demolition of elements of the internal runoff control system are taking place the affected areas will be surrounded by a sand barrier on an as needed basis to ensure the retention of runoff.

1.5.2. Sewage and Wastewater Control

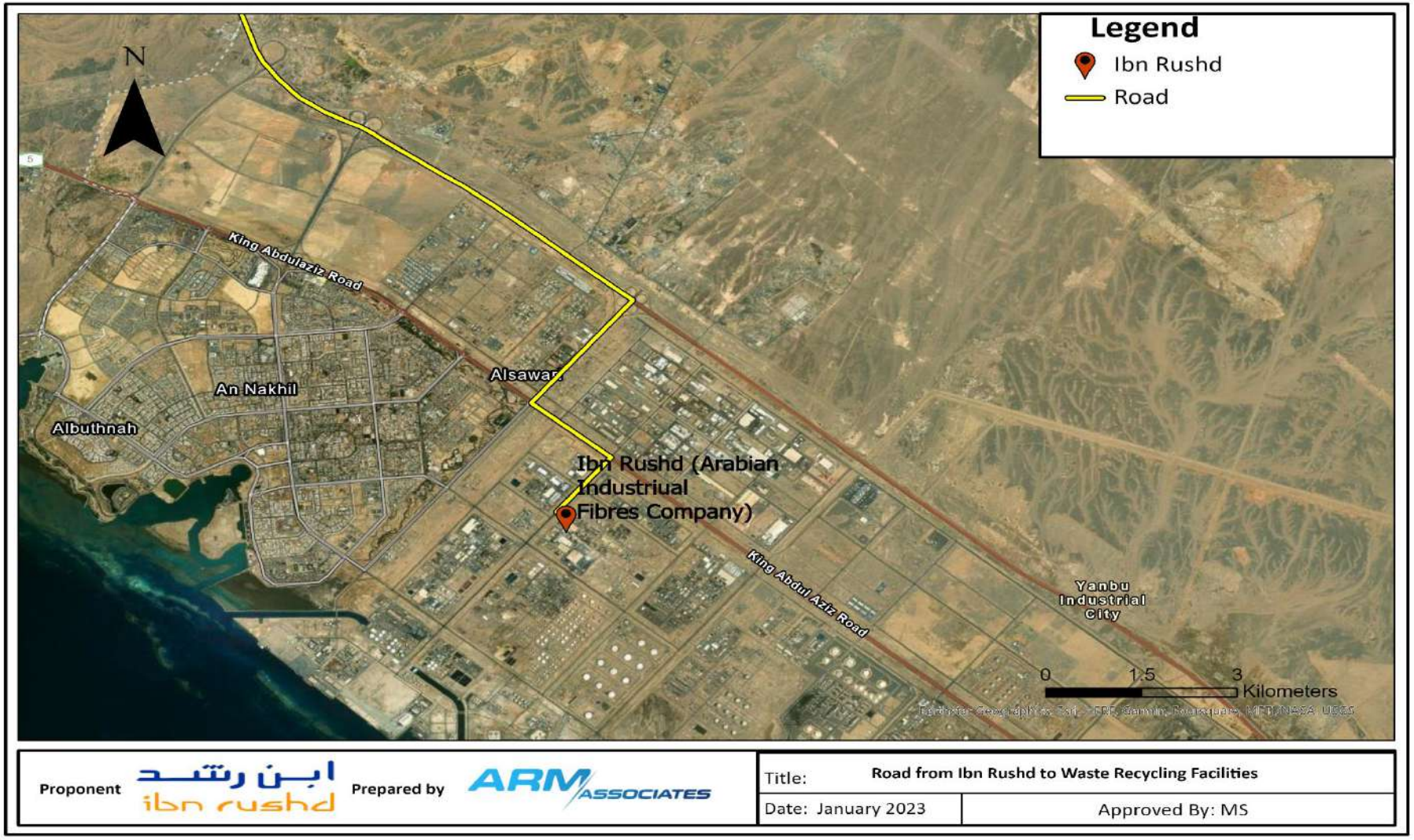
- All sewage and wastewater shall be pumped to local municipal sewage wastewater treatment facility as follow:
- The sanitary wastewater shall be disposed of through Marafiq sanitary wastewater facility.
- Wastewater from chemical totes shall be disposed of through an RC approved WMF company to dispose of the industrial water to the facility.
- The authorized receipts at the treatment facilities shall be kept in a file at the site for period not less than 5 years.

4.8 Traffic Control

- The existing infrastructure and continually expanding surface road network are considered sufficient to support the delivery of demolition equipment, transportation of demolition waste, and the demolition labor force during the demolition effort. It is estimated that deliveries can reach 70-100 per day at peak to transport large, disassembled components and other waste materials during demolition. Therefore, all these deliveries will be routed to the main highways away from the roads that service the Yanbu residential areas as shown in Figure *2* and Figure *3*, and deliveries of large components will be arranged with industrial security. Figure *2* shows the most favorable route to the waste management facilities operating in YIC and Figure *3* is the preferred route to facilities outside of YIC where materials can be taken for recycling.
- It is anticipated that approximately 700 – 1,000 laborers will be involved in the demolition effort at peak. Typically, laborers are housed in camps in relatively close proximity to the site and are transported in busses to and from the site. Based on an estimate of 40 workers per bus it is anticipated that there will be approximately 22 – 25 round-trip bus trips per day. The workforce will be deployed in two shifts, and this can reduce the number of trips by bringing workers in one trip and returning workers who have ended their shifts

Figure 2 Road from IBN RUSHD Plant to Waste Management Facilities

Figure 3 Road from IBN RUSHD Plant to Waste Recycling Facilities



in the same round trip. As these moves will not contribute to additional traffic on roads in the residential part of the city.

4.9 Health and Safety

The demolition of industrial facilities is associated with health and safety risks. Specific health and safety issues are summarized in Table 2.

Table 2 Main Health and Safety Risks to Be Managed During Demolition

Type of Emergency	Area	Control Measures
Worker exposure to demolition equipment and machinery	Demolition area	Work procedures, work permits, and PPE can reduce the risk of catastrophic accidents and the possibility of burns and trauma injuries.
Fire or explosion of diesel fuel	Diesel delivery and metering system	Employee training will be implemented to ensure that all employees know the danger signs and what to do in the event of an accident. Additionally, the appropriate fire-fighting equipment and employee personal protective equipment (PPE) will be available.
Transportation and storage of materials and demolition waste.	Receiving and load out and on road truck movements	Includes demolition waste and other materials received or transported in bulk by truck and stored in designated storage areas. There will be specially trained and responsible workers for this operation.

Type of Emergency	Area	Control Measures
Miscellaneous Accidental Spills	General areas	Delivery truck incidents could lead to the release of hazardous chemicals at loading/unloading areas/docks or plant roadways. The release of hazardous chemicals could cause personnel exposure and environmental contamination. Truck access will be confined to certain areas, all drivers will be trained in the safe operation of vehicles and records will be maintained to document the required maintenance of vehicles.
Vehicle incidents	External Plant entrances and roadways	Delivery truck incidents could lead to demolition waste falling into the roadways. All drivers will be trained in the safe operation of vehicles and certified for the operation of the particular class of vehicle, and records will be maintained to document the required maintenance of vehicles.
Vehicle incidents	Contractor in transit from home to work	The contractor will implement safe driving awareness programs and encourage ridesharing, and busses for laborers.
Medical Emergencies	General plant areas	Due to the nature of the project, there is a risk of personal injury including, but not limited to cuts, bruises, sprains, broken bones, chemical exposures and damage to soft tissues (i.e., skin, eyes, etc.), sunstroke, electrocution, burns, pinches, and other assorted injuries. Each area will have a first aid kit and treatment area, and the facility will have staff trained in first aid on a 12 hours per day, 6 days a week schedule. Training requirements and personal protective equipment will be enforced.

Type of Emergency	Area	Control Measures
Natural Events	General areas	Managing the impact of natural events including, but not limited to, severe heat conditions, sandstorms, fog, rain events, lightning storms and other natural events will be the responsibility of the Health and Safety department personnel. The EHSS group will monitor developing weather conditions and work with the contractor management teams to develop and issue safety guidance as needed to ensure personnel are not working in unsafe conditions, such as on elevated superstructure when lightning is imminent. Safety guidance can range from heat alerts requiring extra liquids, more frequent breaks, or the cancellation of work to “shelter indoors” requirements for severe weather (severe sandstorms or lighting storms). A matrix of increasing weather conditions vs. mitigating protocols will be developed and maintained by the EHSS group for use in managing the impact of Natural events.

The personnel responsible for the health and safety of each of the contractors selected for the project will be subject to review and approval from the Project Management Team. A strict prequalification process for contractors including a review of standard procedures and historical safety records will be adopted.

Each contractor will be responsible for drafting Health and Safety Plans associated with their work. All written work procedures shall include information on Health and Safety practices, required protective equipment and emergency procedures in order to create and maintain a safe and healthy work environment, and reduce the potential impacts on surrounding residential, cultural, educational, and recreational areas to protect public health.

5. IMPLEMENTATION OF THE ENVIRONMENTAL MANAGEMENT PLANS

The Environmental Management Plans for Demolition cannot be effective if they are not implemented in a structured and disciplined way. The activities below represent the minimum requirements that must be considered.

6.2 Roles and Responsibilities

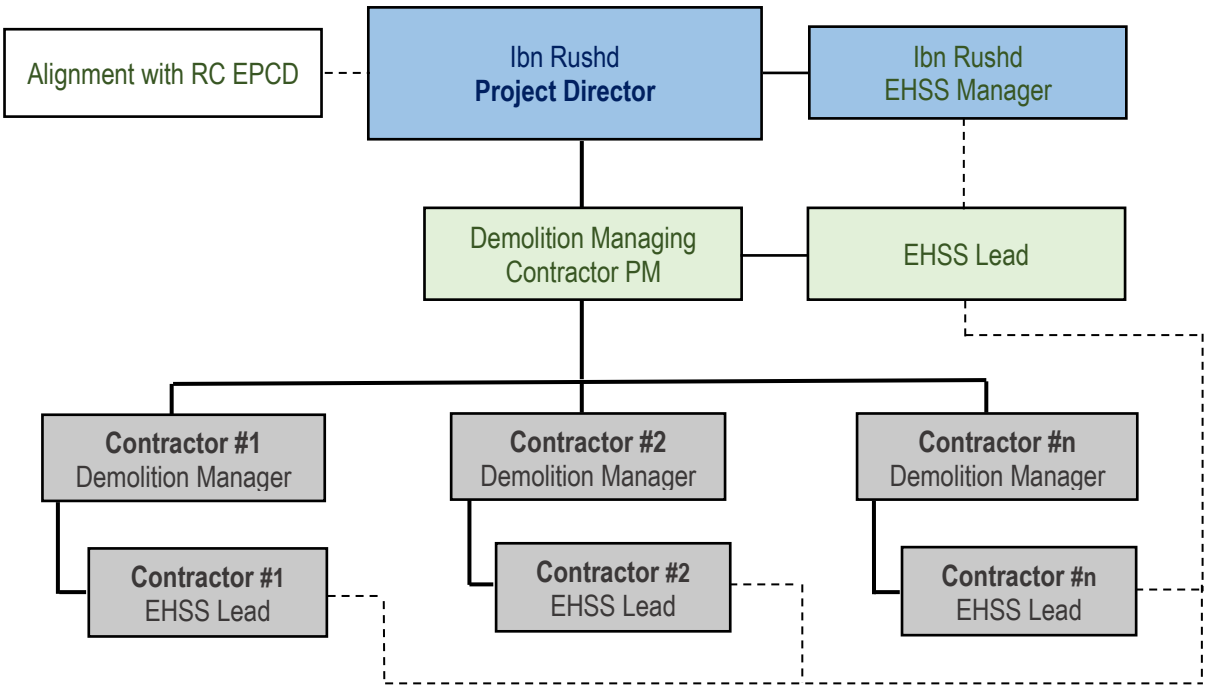
The organization of the Demolition Environmental Management and Monitoring Plan (D-EMMP) and its execution for the demolition work shall be based on the Line Management principles, which means that the Environmental Management responsibilities follow the reporting lines from the Project Director to the Project Manager of each contractor and to each project member.

The Project Director has the overall responsibility to establish a project organization for the implementation of EHSS requirements.

The Demolition Managing Contractor organization will include a Project Manager, reporting directly to the overall Project Director. Individual contractor's personnel responsible for Environmental, Health, Safety and Security (EHSS) matters will report directly to their manager, but there will also be direct communication between the EHSS personnel of all contractors and the Project Manager of the Demolition Managing Contractor.

Any line manager is obliged to ensure that the activities he is responsible for are planned, organized, carried out and documented according to this D-EMMP. All line managers are responsible for contacting the Demolition Manager when support in EHSS matters is needed. The EHSS organization is illustrated in the organization chart in Figure *4*.

Figure 4 Organizational Structure and Reporting Lines for D-EMMP.



Project Director (IBN RUSHD)

The Project Director is ultimately responsible for the EHSS program assurance for the Project. This position has overall responsibility for all demolition related issues and shall provide the necessary resources and personnel for the execution of this plan.

EHSS Manager (IBN RUSHD)

The EHSS Manager of IBN RUSHD is responsible for the overall EHSS performance of the Project and acts as a supervisor of the Demolition Managing Contractor's EHSS management. The manager has direct reporting lines to the Project Director and is in day-to-day communication with EHSS Lead of the Demolition Managing Contractor.

Project Manager (Demolition Managing Contractor)

The Project Manager of the Demolition Managing Contractor is responsible for implementing Project EHSS requirements and policies as well as for the overall direction of the team and the development of departmental plans and procedures. EHSS related Interfaces between other departments and with contractors shall be coordinated with the Demolition Manager.

EHSS Lead (Demolition Managing Contractor)

The EHSS Lead is responsible for the day-to-day implementation of the Project's EHSS requirements and policies for each demolition contractor and has direct reporting lines to the Demolition Managing Director and the Ibn Rushd EHSS Manager.

Contractor's Demolition Managers

All contractor's Demolition Managers are responsible for the Demolition activities on-site in accordance with the contractor's SoW and this EMMP. Contractor Managers have reporting lines to the Project Manager of the Demolition Managing Contractor. The Demolition Manager is responsible for EHSS compliance for a contractor's activities on site as per IR Asset Retirement Management System.

Contractor's EHSSLeads

The EHSS Leads are responsible for planning and execution of EHSS elements contained within their work scope, and providing any data, feedback and hold-points required.

6.3 Communication

Lines of communication are shown in the organizational chart shown in Figure 4.

6.4 Audits and Reporting

A four-tiered approach will be applied to the monitoring of the project performance, as follows:

1. **Site Tours:** These will mainly consist of a daily “walkthrough” of the demolition site by the Demolition Contractor’s Environmental Specialist/Engineer.

2. **Site Inspections:** To be conducted weekly by the Demolition Contractor’s Environmental Specialists/Engineers and Project Manager of the Demolition along with the Contractor’s EHSS Leads or Contractor’s Demolition Managers to check demolition site activities against a planned checklist.

3. **Audits:** At least quarterly internal audits of the implementation of this D-EMMP and any specific sub-plans adopted by the Demolition Manager will be conducted by the Demolition Contractor’s EHSS Specialists/Engineers. In addition, independent external audits may be undertaken at specified intervals (the initiative comes from RC EPCD).

4. **Environmental Monitoring Program:** Monitoring of key environmental conditions such as air quality, noise and water quality will be undertaken in accordance with the Environmental Monitoring Plan (in chapter 5) and local requirements.

   During Site tours and Site Inspections, the Demolition Contractor’s EHSS Manager and EHSS Specialist/Engineer should monitor the EHSS performance (as applicable) of the site in line with this D-EMMP and gather relevant information and inputs to monthly reports. Any manager, superintendent, foreman or worker who discovers a non-conforming environmental issue, shall notify the Project Manager of Demolition directly or through a line manager. The Demolition Manager (Demolition Managing Contractor) will report directly to the Project Director to have work suspended if on-site conditions have, or have the potential to impact habitat, and wildlife or are in significant non-conformance with requirements outlined in this D-EMMP, RCER 2015 standards, or NCEC standards.

   All environmental and health and safety incidents, including near misses, will be reported immediately to the Demolition Manager and further to the Project Director identifying the nature of the incident and how it has been or will be addressed. A Non-Conforming situation shall be addressed by the implementation a corrective action through the non-conformance handling procedure.

6.5 Training Plan for Demolition Phase

All contractors selected for the demolition effort will be required to establish that they operate under the guidelines of their formal D-EMMP that addresses the recommended procedures and mitigation measures identified in this document. All workers will receive formal initial training that will describe the following:

- Training for all contractors on the requirements and procedures of the D-EMMP.
- Roles and Responsibilities and organization structure of the environmental management team.
- Environmental awareness to describe why the mitigation measures and the procedures for implementing the mitigation measures are important.

- Procedures for identifying and responding to perceived or real environmental emergencies.
- Procedures for recommending opportunities to improve the environmental performance during the project works, such as opportunities to reduce or reuse waste generated or reduce water.
- Requirements for internal audits of work phases to identify gaps between recommended practices and actual performance.
- Scheduled periodic refresher training and toolbox talks to discuss lessons learned from internal audits and to reinforce the goals of the D-EMMP.

7. ENVIRONMENTAL MONITORING PLAN

Monitoring of key environmental conditions such as air quality, noise and water quality will be undertaken in accordance with the monitoring plan and local requirements.

The results of spot inspections and planned audits will be prepared as formal reports and discussed in monthly management meetings. Plans for the preparation, implementation and monitoring of any additional requirements or procedures that are found to be necessary to improve the management plan will be documented along with a schedule and a named person responsible for the implementation of recommendations.

8.2 Noise

- Sound pressure levels at specific areas of the demolition effort where hearing protection is required will be monitored on a regular basis. The causes of increased sound pressure levels, if found, will be investigated and remedial action taken to reduce the sound pressure to acceptable levels.
- Periodic measurements of ambient noise at predicted hot spots along the facility fence line will be made during the demolition and removal of material as specified by EPCD to document that noise levels from the facility operations do not exceed the allowable limits as presented in RCER 2015.

8.3 Waste

- A waste manifest as specified in RCER 2015 will be maintained during demolition to document the quantities of each type of recyclable material, and waste generated, the date the materials were sequestered to the on-site temporary storage yard, the date these wastes were transported off-site, the transporter and license number of the transporter, and the time these wastes were accepted at the final recycling or WMF.
- The waste manifest forms, and a summary of waste generation, handling and disposal will be made available to RC EPCD if requested.

The waste manifests and summary reports will be prepared by Demolition Contractors as part of their normal job duties and will be maintained by the Project Director.

8.4 Air Pollution Sources

- No special air quality monitoring is thought to be required during demolition. If dust levels rise to problematic levels the Demolition Contractors will consider monitoring short-duration periods to document the potential exposures and take immediate mitigation measures.

8.5 Wastewater Effluents

- Monitoring groundwater quality before and during dewatering if any dewatering is required.

- The flow rate of sanitary wastewater and industrial wastewater during demolition should be monitored to document the incremental contribution to current total flows sent to Central Sanitary Wastewater Treatment plant.
- Capacities of existing systems to manage the additional flows will be documented every three months.

Demolition Contractors will monitor effluents periodically through their laboratories.

9. STAKEHOLDER ENGAGEMENT PLAN (SEP)

The overall objective of this Stakeholder Engagement Plan (SEP) is to define a program for stakeholder engagement, including information disclosure and consultation throughout the demolition stage. The SEP highlights the way the project owners (IBN RUSHD) will communicate with stakeholder groups who may be affected by or interested in the project. Effective stakeholder participation is important for the successful management of the risks and impacts on the communities affected by the project and also aims to align the strategy with Saudi Arabian cultural and social values. The SEP also defines an external grievance mechanism by which residents of Yanbu Industrial City and other internal and external stakeholders can raise concerns, provide feedback, or make complaints about the project activities.

The SEP, therefore, sets out to:

- Maintain constructive and transparent relationships between local communities and the project owners, and thereby to create a collaborative framework that can assess its positive and negative impacts on the community and respond appropriately.
- Build a communication channel with the local community about the project owners' challenges and accomplishments in achieving sustainable environmental management objectives.
- Ensure that major announcements that could impact the local community are communicated concurrently with communications to external audiences (such as the media).

It is proposed that the SEP is a living document and will be updated on a regular basis (usually annually). Updated versions may include new stakeholders and any changes to the stakeholder program.

10.2 SEP Content

The following system for stakeholder engagement will be implemented for and is applicable to the IBN RUSHD Demolition Project in accordance with the best practices and taking account of local KSA cultural and social values and specifics:

1. **Identification of IBN RUSHD Demolition Project Stakeholder Groups:** identification of stakeholders and the public that are, or could be, affected by the project's operation.
2. **Stakeholder Engagement Process:** during this step, the project owners are to ensure that identified stakeholders are appropriately engaged on EHSS issues that could potentially affect them through a process of information disclosure and consultation.
3. **Consultation Process:** the consultation process will be based on the disclosure of information relevant to the project activities. The consultation process will be undertaken in a manner that is inclusive and culturally appropriate.
4. **Grievance Mechanism:** maintaining a grievance process by which stakeholders' residents of local communities can raise concerns, and which will be handled in a prompt and consistent manner.

10.3 Stakeholder Identification and Consultations

Stakeholder identification is a crucial step in managing the overall stakeholder engagement process. Accurate stakeholder identification reduces the risk of a narrow stakeholder group dominating the engagement process to the detriment of the entire community. When stakeholders are accurately identified and interactions are documented, the project owners will be able to demonstrate compliance, responsiveness and optimum business practices.

The project owners have identified three major stakeholder groups who may be interested and/or affected by the project activities:

- Internal stakeholders (employees, vendors, suppliers, consultants, and the demolition construction contractors and their staff).
- External stakeholders, including governmental authorities, municipalities, transport companies, WMFs, recycling facilities, and local businesses.
- Local public/residents.

Others who wish to be included in the list can contact the project owners and be put on the mailing list for information on reporting, meetings, or other consultation opportunities.

4.2.1. External Stakeholders

Table *3* summarizes the key categories of external parties and their potential interest in the project.

Table 3 Key Categories of External Parties and their Potential Interest in the Project

External Stakeholders	Interest in the Project
Royal Commission for Jubail and Yanbu Environmental Protection and Control Department	EPCD is the primary authority responsible for the protection of the environment and public exposure to environmental threats in YIC. Most public complaints will be managed through the Royal Commission. Any direct communication if necessary with the NCEC will be coordinated through the RC EPCD.
High Commission for Industrial Security (HCIS)	HCIS is the body responsible for security, safety and fire protection.
Local or Regional Chambers of Commerce	To ensure project purchased materials and consumables through local businesses to the extent possible.
National Commission for Wildlife Conservation and Development (NCWCD)	To ensure that the project does not negatively affect natural protected areas and complies with NCEC/KSA environmental legislation.
SABIC EHSS Department	Coordination throughout the project to ensure the project is in compliance with SABIC policies, and consistent with KSA regulations concerning the treatment of worker safety and community health
Business and workers' organizations	Interest in procurement and supply chain, and potential environmental impacts.
Press and media if interest arises	Inform people and authorities in the project area and the wider public about project implementation and planned activities.

External Stakeholders	Interest in the Project
Academic institutions (universities, think tanks, schools)	1. Potential concerns regarding environmental and social impacts. 2. Potential educational/outreach opportunities to increase awareness and acceptance of the project.
Local Residents through interactions with the relevant Departments of the Royal Commission	1. Potential concerns regarding exposure to environmental impacts. 2. Potential educational/outreach opportunities to increase awareness and acceptance of the project. 3. Potential opportunity to conduct public exhibitions to educate local residents about the project impact, etc.

4.2.2. Internal Stakeholders

Internal interested parties with stakes in the project include the staff of the project, management, and employees of the surrounding SABIC facilities, their prospective contractors and subcontractors, service providers, local vendors, and suppliers.

4.2.3. Summary of Stakeholder External and Internal of the Project

Table *4* summarizes the level of interest in and potential influence over the project of the various stakeholder categories identified above. Categories having “high level of interest” and “high ability to influence the project” will require regular and frequent engagement, typically face-to-face and written, and several times per year. Categories with “medium interest or medium influence” will require regular engagement (e.g., every half-a-year), typically through written information. Other will require infrequent engagement (e.g., once a year), typically through indirect written information (e.g., mass media).

4.2.4. Methods of Engagement with Stakeholders

The project owners will use complementary venues for engagement to ensure that the broadest stakeholder groups are reached. These venues are complementary in that they will each serve different purposes but for a common end. Examples of venues include:

- Meetings with the officials representing relevant RC Departments, and government officials if and when necessary.
- Frequent interaction and meetings with RC EPCD.
- Formal letters to and meeting with local Chambers of Commerce.
- Meetings with governmental authorities as requested for special interests.
- Meetings with local business owners.
- Meetings with employees.
- Presentations to stakeholders about the project and its development progress if requested.
- The newsletters that include project updates, achievements, and community events.

Table 4 Potential Level of Interest and Influence Over the Project

Level of Interest in Project	Ability or Likelihood to Influence the Project		
	High	**Medium**	**Low**
High	- Royal Commission for Jubail and Yanbu Environmental Protection and Control Department - Citizens of the surrounding areas to be addressed through interaction with the RC	- Local/Regional Chamber of Commerce - High Commission for Industrial Security (HCIS)	- Local Business - Workers
Medium	- Ministry of Labor and Social Affairs - Ministry of Health	None	- Press and media - Surrounding Industries
Low	None	- National Commission for Wildlife Conservation and Development (NCWCD)	Academic Institutions

- Formal grievance responses via Grievance Mechanism, outlined in this SEP.
- Press releases through available media outlets.

Topics of discussion may include business updates and key business issues (e.g., road safety, EHSS risks, owner/operator EHSS policies, public health, environmental awareness, etc.).

10.4 Stakeholder Engagement Program and Communication

Table 5 below describes the stakeholder engagement program and communication set out for the project.

Table 5 Stakeholder Engagement Program Communication Plan

Stakeholder Group	Means of Engagement and Communication	Proposed Media	Responsibility	Frequency
Governmental Authorities and Agencies				
Royal Commission Industrial Investment Department	Direct meetings and telephone conversations	In person, telephone, online meetings	Project Director	Quarterly

Stakeholder Group	Means of Engagement and Communication	Proposed Media	Responsibility	Frequency
EPCD	Direct meetings and telephone conversations	In person, telephone, online meetings	Project Manager of the Demolition Managing Contractor	Quarterly
High Commission for Industrial Security (HCIS)	Direct meetings and telephone conversations	In person, telephone, online meetings	Project Manager of the Demolition Managing Contractor	As needed throughout lifetime of the project
National Center for Environmental Compliance (NCEC)	Coordinated through the Royal Commission EPCD	In person, telephone, online meetings	Project owner's Stakeholder Liaison Officer working with RC EPCD	As needed or requested by NCEC
SABIC Industrial Security and Environment Department	- Ongoing working linkages with the Department - Communication with authorities through meetings and presentations	In person, telephone, online meetings	Project owner's Stakeholder Liaison Officer, EHSS Manager, and SHEM Policies	As needed throughout lifetime of the project
Other External Stakeholder Groups (as needed or requested)				
Local Chambers of Commerce	- Communication with authorities through meetings and presentations - Email and phone	Project owner's websites Regional newspaper/TV and Radio station	Project owner's Stakeholder Liaison Officer	As needed throughout lifetime of the project
Business and workers' organizations	- Coordination through the RC Departments and/or SABIC Business Affairs Department	In person, telephone, online meetings Project owner's websites Regional newspaper/TV and Radio station	Project owner's Stakeholder Liaison Officer	As needed throughout lifetime of the project
Press and media	- Communication via meetings - Email and phone			As needed throughout lifetime of the project
Academic institutions (universities, think tanks, schools)	- Communication via meetings - Email and phone			When asked for assistance or to provide training
Internal Stakeholders				
IBN RUSHD management and staff	Annual Meetings email list serves Grievance procedure	In person, telephone, online meetings	Project owner's Stakeholder Liaison Officer	Throughout lifetime of the project
Future contractors and subcontractors, service	- Newsletters and phone calls - Meetings	In person, telephone, online meetings	Project Manager of the Demolition Managing Contractor	Throughout lifetime of the project although

Stakeholder Group	Means of Engagement and Communication	Proposed Media	Responsibility	Frequency
providers, local vendors, and suppliers	- Staff and supplier training and induction sessions, including feedback and grievance mechanism - Information on request to contractors and subcontractors - Code of conduct (for Demolition Contractor) - Special information on speed limits, timing of routes, driver safety (for Demolition Contractor)			agreements with individual vendors and other subcontractors may change due to market pressures

10.5 External Grievance Mechanism

The objective of a grievance procedure is to ensure that all comments and complaints from any project stakeholder, including local/regional authorities, residents of nearby residential areas, IBN RUSHD facility employees, Demolition Contractors' and Subcontractors' staff, equipment and materials suppliers, and other interested parties are considered and addressed in an appropriate and timely manner. All grievances will be acknowledged and responded to within a reasonable timeframe.

Prior to the beginning of demolition, the IBN RUSHD management will appoint a Stakeholder Liaison Officer(s) (SLO). The EHSS department for the IBN RUSHD and the Demolition Contractors, in cooperation with the SLO will participate in any interactions, meetings, telephone calls, etc. with External Stakeholders to ensure that their concerns or requirements are understood and that systems for documenting compliance with those requirements are being achieved. The interactions with the public will be directed through relevant departments of the Royal Commission. Announcements will be made through contacts with local government leaders, labor camp directors, and the public residing in the area through interactions with the Royal Commission.

The project owners will accept all comments and complaints associated with the project. A sample of a Comments and Complaints Form is shown in Appendix A. The comments and complaints will be summarized and listed in the Complaints/Comments Logbook, containing the name/group of the commenter/complainant, the date the comment was received, a brief description of issues, information on proposed corrective actions to be implemented (if appropriate) and the date of response sent to the commenter/complainant.

All comments and complaints will be responded to either verbally or in writing, in accordance with the preferred method of communication specified by the complainant in the Comments

and Complaints Form. Comments will be reviewed and accounted for at project initiation; however, they may not receive an individual response unless requested.

The project owners will acknowledge all complaints within a one-week period. It is possible that responding to the complaint itself may take longer than one week to implement, and in those instances the project owners will inform the complainant within one week of what actions will be taken and when.

10.6 Roles and Responsibilities

The SLO will have the overall responsibility for consulting and communicating with the relevant departments of the Royal Commission, collecting and processing comments/complaints, and responding to any such comments and complaints. Depending on the nature of a comment/complaint, some comments or complaints will be provided to the appropriate person in the company for a response. The process will be managed through the functions of the Royal Commission.

11. APPENDIX A: COMMENTS AND COMPLAINTS SAMPLE FORM

Form For Comments, Complaints and Reports of Individuals

Reference No:	
Full Name	
Contact Information and Preferred method of communication Please mark how you wish to be contacted (mail, telephone, e-mail).	☐ **By Post (Please provide mailing address)** _____ _____ _____ ☐ **By Telephone:** _____ ☐ **By E-mail:** _____
Description of Incident or Grievance:	What happened? Where did it happen? Who did it happen to? What is the result of the problem? Source and duration of the problem?
Date of Incident / Grievance	
	☐ **One time incident/grievance (date: _____)** ☐ **Happened more than once (how many times? _____)** ☐ **On-going (currently experiencing problem)**
What would you like to see happen to resolve the problem?	

Signature: _____

Date: _____

Please return this form to: [Mr/Mrs. XXXXXX], [ROLE and DEPARTMENT],

Address: _____ Telephone: _____

Or E-mail: _____

Attachments

(4)

نقل المسؤوليات (TOR)
Transfer of Responsibilities (TOR)

Demolition Transfer of Responsibilities	Certificate Number:	

Section 1: Purpose and Key Principles

The purpose of this Certificate is to transfer responsibility within the boundary described in Section 2 for:

- The safe control of work, and
- The management of Environment, Health, and Safety

The scope of the transfer is described in Section 2. The key principles are as follows:

1. Responsibility for the control of work and management of Environment, Health, & Safety lies with the Demolition Contractor nominated in Section 2.
2. An appointed Principal Contractor, as nominated in Section 3, will review and approve the Demolition Contractor's Construction Phase Plan, Risk Assessments and Method Statements after the consent of YANSAB Demolishing Project Leader. This does not absolve the Demolition Contractor of responsibility for the work methods or ensuring that work is undertaken in a safe and environmentally sound manner.
3. The appointed Principal Contractor will monitor the TOR area and work activities being undertaken by the Demolition Contractor on behalf of YANSAB.
4. As deemed necessary by YANSAB, the Structural Advisor nominated in Section 3 will review and comment on the structural aspects of the demolition work methods. Such reviews will not absolve the Demolition Contractor of any responsibilities for ensuring that the work activities inside and outside the TOR and their effect on each other are understood, controlled and do not create any adverse EHSS impact.
5. The Demolition Contractor shall be responsible for liaising with the YANSAB Focal point(s) nominated in Section 3 to ensure that work activities inside and outside the TOR area and effect on each other are understood, controlled and do not create any adverse EHSS impact.
6. The Demolition Contractor nominated in section 2 is responsible hire an approved Waste Consignor by the Local Authorities for all waste produced within the TOR.
7. By virtue of this TOR the Demolition Contractor referenced in Section 2.1 agrees to accept responsibility and liabilities associated with the demolition activities that will take place within the TOR area defined in Section 2.2.
8.
9. The Demolition Contractor referenced in Section 2.1 confirms their agreement to indemnify YANSAB for the activities associated with this document.

Section 2: Transfer Parties, TOR Location and Workscope	
2.1 Transfer Parties	
From:	[Site name]
To:	[Demolition Contractor Name]
2.2 TOR Location	
Site	[Site location]
Plant/Unit	

Location Drawing

Insert plot plan drawing with red line mark up to show the boundaries of the TOR area (YANSAB Demolishing Project Leader to provide)

Note: On site the location is physically defined by a fenced boundary.

2.3 Work scope

Brief narrative to describe the key components of the work scope to be undertaken in the TOR under the control and management of the Demolition Contractor (YANSAB Demolishing Project Leader to Provide)

Section 3: Key Contacts (and Circulation List when TOR Certificate Authorised in Section 8.1)		
3.1 YANSAB / Client		
Demolishing Project Leader		Tel:
EHSS Sr. Manager		Tel:
Focal Point(s)	For daily liaison with demolition contractor, may need multiple entries for shift personnel (e.g. Shift Managers)	Tel:
Structural Advisor	Typically from SABIC MFG Asset Integrity team	Tel:
3.2 Demolition Contractor: Insert Company Name		
Site Manager	Indicative titles, adjust to suit project	Tel:
Project Engineer		Tel:
EHS Manager		Tel:
Work Permit Issuer		Tel:
Incident Controller		Tel:
3.3 Principal Contractor: Insert Company Name		
Project Manager	Indicative titles, adjust to suit project	Tel:
EHS Manager		Tel:
3.4 Site Emergency Response Services		
Responsible Person	Indicative titles, adjust to suit project	Tel:

Section 4: Key Reference Documents		
#	Document Description	Unique Reference(s)
4.1	Decommissioning Handover Dossier	
4.2	Pre-Construction Information	
4.3	Contractors Traffic Management Plan	
4.4	Asbestos Survey Report(s), as applicable	
4.5	Demolition Contractor Safe Systems of Work (Approved by Principal Contractor/YANSAB)	
4.6	Demolition Contractor Construction Phase Plan (Approved by Principal Contractor/YANSAB)	
4.7	Demolition Contractor Site Waste Management Plan (Approved by Principal Contractor/YANSAB)	
4.8	Demolition Contractor/YANSAB Focal Point Liaison Plan and Proforma	
4.9	Demolition Method Statements	
4.10	Any others to be listed on a project specific basis	

Section 5: Residual Risks			
#	Description	Present (Y/N)	Comments/References
5.1	Existing underground drainage systems		
5.2	Existing underground electrical supplies/other services		
5.3	Presence, or potential presence, of hazardous insulation materials		
5.4	Adjacent live plant and equipment		Specifically note position and risks relative to the demolition TOR area – process drains/fire mains/above and below ground cables /live plant and/or storage including flammable and toxic materials, hazards as disclosed in Pre-construction Information
5.5	Potential for residual hydrocarbons or other contaminants		
5.6	Live electrical cables running through the TOR area		Specifically note position and risks relative to the demolition TOR area
5.7	Live water mains and/or hydrants within the TOR area		Specifically note position and risks relative to the demolition TOR area
5.8	Structures and walkways in poor condition		
5.9	Equipment charged with catalysts, desiccant, ...etc. within TOR area		Specify quantities and disposal process
5.10	Any others to be listed on a project specific basis		

Section 6: TOR Area Restrictions and Precautions			
#	Description	Applicable (Y/N)	Comments/References
6.1	Safe Systems of Work (SSOW)		The Demolition Contractor will apply their SSOW as referenced in section 4.5
6.2	Routine liaison between the Demolition Contractor and YANSAB Focal Point		Must take place and be formally recorded in accordance with the Liaison Plan referenced in Section 4.8 to ensure that work activities inside/outside the TOR and their effect on each other are understood and controlled to avoid any adverse EHSS consequences
6.3	Traffic Management		The Demolition Contractor will apply their Traffic Management Plan as referenced in Section 4.3
6.4	Lifting Operations		The Demolition Contractor will manage all lifting activities. Lifting operations that extend outside the TOR boundary must be reviewed in advance with YANSAB Focal Point.
6.5	**No** hot work allowed		Exceptions must be requested and approved, in writing, on a case by case basis
6.6	**No** blind hot cutting		Hot cutting where the geometry of the object to be cut means that it cannot be thoroughly visually examined and tested to ensure that no flammable material is present.
6.7	**No** confined space entries (includes but not limited to excavations, manholes, sewers, drains, tanks, vessels, tunnels, shafts, ducts, pipelines, boreholes, boilers, stacks, enclosures and other such unventilated areas)		Exceptions must be requested and approved, in writing, on a case by case basis
6.8	**No** deliberate collapse of equipment or structures		Exceptions must be requested and approved, in writing, on a case by case basis
6.9	The validity of the TOR Certificate is subject to a satisfactory 6		

Section 6: TOR Area Restrictions and Precautions			
#	Description	Applicable (Y/N)	Comments/References
	monthly audit by YANSAB EHSS team		
6.10	The validity of the TOR Certificate is subject to a satisfactory ongoing audits of the work area, work methods and work execution by YANSAB and appointed Principal Contractor		
6.11	Any others to be listed on a project specific basis		

Section 7: EHS Incident Management, Reporting and Auditing

7.1 EHS Incident Management and Reporting

The Demolition Contractor will provide a trained and competent individual to fulfil the role of 'Incident Controller' in the event of a signficant incident requiring emergency response.

The Demolition Contractor EHS Manager nominated in Section 3.2 is responsible for providing:

The YANSAB Demolishing Project Leader, EHSS Sr. Manager nominated in Section 3.1, and the Principal Contractor EHS Manager nominated in Section 3.3

With details of any accident that occurs within the TOR area.

Verbal notification must be provided as soon as practicable following any accident and an initial written summary must be provided within 24 hours. The Demolition Contractor will ensure that all accidents are investigated in the appropriate level of detail and closed out in a timely manner. YMS-SHEM-P-10.00 guidelines to be used for incident reporting.

7.2 EHS Performance Reporting

The Demolition Contractor EHS Manager nominated in Section 3.2 is responsible for providing the following data as minimum, in writing, by the third working day of each month:

1. The total man-hours expended by the demolition contractor and all sub-contractors involved in the execution of the works during the previous calendar month.
2. A summary of any accidents or incidents and their classification, near misses and observations.

After alignment with the Principal Contractor EHS Manager nominated in Section 3.3, the data shall be provided to the YANSAB Demolishing Project Leader, EHSS Manager nominated in Section 3.1 who will be responsible for internal reporting of the data.

7.3 EHS Auditing

The YANSAB EHSS Manager nominated in Section 3.1 will be responsible for:

1. Establishing an appropriate audit program throughout the TOR validity period.
2. Facilitating 6 monthly audits by selective representation from YANSAB management teams and EHSS Group.
3. Co-ordinating any corrective actions arising on behalf of the YANSAB Demolishing Project Leader who is responsible for completion.

SECTION 8: HANDOVER		
8.1 Handover		
Issued By:	Insert Job Title (YANSAB Demolishing Project Leader)	Name: Signature:
Received By:	Insert Job Title Demolition Contractor Site Manager/Responsible Person	Name: Signature:
Effective From:	Date:	Time:
Forecast Handback	Date:	Time:

SECTION 9: HANDBACK		
A Handback Certificate (FORM-1406-07) has been completed and the TOR is handed back		
Issued By:	Insert Job Title Demolition Contractor Site Manager/Responsible Person	Name: Signature:
Received By:	Insert Job Title (YANSAB Demolition Project Leader)	Name: Signature:
	Date:	Time:

Attachments

(5)

إعادة استلام المسؤوليات (TOR)

Transfer of Responsibilities (TOR) Handback

Transfer of Responsibilities	Certificate Number XXX
The purpose of this certificate is to transfer the responsibility for all operations within or associated with the Plant/Area/Location described below: **From:** Demolition Contractors Name **To:** [Site name].	
Plant: Plant / Area /Location Works: [Site location] (Delete as applicable)	
Description of Area/System Responsibility: This document covers the area of Plant / Area /Location and work associated with its demolition, dismantling and site clearance. The actual area of the site encapsulated under this document is shown on the following: Document ref	
Job Title Print: (Demolition contractor and Responsible Person) Name Print: Signed: Date and time:	
Job Title Print: (Principal Contractor) Name Print: Signed: Date and time:	
Job Title Print: (YANSAB Demolishing Project Leader) Name Print: Signed: Date and time:	
Job Title Print: (YANSAB EHSS Sr. Manager) Name Print: Signed: Date and time:	

Attach a plot plan red line map showing the area of responsibility.