

COMMENTS TO BE RETURNED TO:
 COMPANY/PMC

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Document No.	5578-E4-HSE-HU-00038	Rev. Date	27 Oct 2010
Document Title	Floor Grating Safe Removal Procedure	Rev	0

COMMENTS:

By:

Signed

Date

Review Code:

1. REJECTED : REVISE AND SUBMIT
2. COMMENTS AS NOTED : WORK MAY PROCEED SUBJECT TO COMPLIANCE WITH AND INCORPORATION OF COMMENTS
3. NO COMMENTS : WORK MAY PROCEED
4. INFORMATION ONLY. : ACCEPTED FOR INFORMATION ONLY

No. of Pages attached to this form :



**RUWAIS REFINERY
EXPANSION PROJECT**

**EPC-4 TANKAGE AND ASSOCIATED
INTERCONNECTING PIPING**

AGREEMENT No. 09-5578-E-4

DAEWOO E&C

PROJECT No. 5578

Doc. No. 5578-E4-HSE-HU-00038

Rev. 0

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FLOOR GRATING SAFE REMOVAL PROCEDURE

AGREEMENT NO. : 09-5578-E-4

PROJECT NAME : Ruwais Refinery Expansion Project
EPC-4: Tankage & Associated
Interconnecting Piping

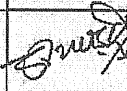
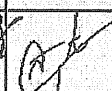


COMPANY : Abu Dhabi Oil Refining Company (TAKREER)

PMC : Mott MacDonald Ltd.

CONTRACTOR : Daewoo Engineering & Construction Co., Ltd.

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This page is a record of all revisions of this document. All previous issues are hereby superseded and are to be destroyed.

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0	27 Oct 2010	Issued For Construction	D. Bhandari	A. Mesquita	DY Kim	M Heo	
A	16 August 10	For Review and Comment	C Wardman	DY Kim	J Brand	M Heo	
REV	DATE	REASON FOR ISSUE	PREP	CHKD	REVD	APP'D	COMPANY
SIGNED (Initials)							

NOTES:

- (a) Revisions are denoted by a vertical line placed in the right-hand margin against the revised text.
- (b) PREP = Prepared by, CHKD = Checked by, REVD = Reviewed by, APP'D = Approved by.
- (c) In case of conflict between any requirements stipulated in this document with the contractual requirements, the contractual requirements shall prevail.

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1. INTRODUCTION

1.1 Purpose

The purpose of this procedure is to eliminate hazards associated with the removal of grating or other flooring. This will be accomplished through a thorough risk assessment and the utilization of a grating removal permit and where necessary, a permit to work inside barricaded areas.

1.2 SCOPE

The scope of this procedure covers all areas on the project where grating or flooring is removed from elevated structures resulting in a potential fall exposure.

2. RESPONSIBILITIES

Project Manager

- The Project Manager has the responsibility to ensure that the requirements of this procedure are adhered strictly to during execution of the project.

Section Manager

- The Section Manager has the responsibility to ensure that DEC and Subcontractor management is aligned with and accountable for this procedure and permit to work procedure.

HSE Manager

- The HSE Manager shall be responsible for the overall implementation of this procedure.
- He shall report violations and/or noncompliance issues to project management for immediate corrective action.

Supervisors

- All supervisors should ensure that all employees adhere to the requirements of this procedure on performing work.

Employees

- All employees should practice safe work habits, and comply with the requirements of this procedure on performing work.

All Subcontractors must ensure that the safe removal of grating and flooring is a necessity to perform the task.

3. PERMIT REQUIREMENTS

1. At least 24 hour before removing any section of grating or flooring, the Subcontractor must apply to DEC for a flooring and grating removal permit (See attachment 1).

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2. DEC is responsible to ensure that the removal of gratings are controlled and properly managed to eliminate the fall hazards that exist.
3. All employees involved in this type of work or working near an open hole must be trained in hazards and dangers associated with elevated work and fall protection
4. Each permit will be valid for a maximum period of one week.
5. Before issuing any permit, the DEC area supervisor and a member of the HSE team, as a minimum, must visit the location to review the necessity of removing the flooring material.
6. All locations where flooring material is to be removed must be surrounded by a hard barricade located no closer than one(1)m and no further than two(2)m from the edge of the opening. A copy of the permit must be available at the location at all times.
7. Removal of flooring material will only be performed after completion of the permit procedure.
8. All openings in floors will be covered with temporary covers unless work is in progress which requires the opening. All temporary covers will be secured in place to prevent accidental displacement. Penetrations through flooring for permanent installations such as pipe or equipment must be protected through the use of temporary hole covers.
9. All temporary covers shall have the phrase "Hole Cover – Do Not Remove" marked on the face of the cover or if grating is used as a hole cover, it must be painted bright yellow.
10. All temporary hole covers must be capable of withstanding, without failure, a weight of at least 250kg. As a minimum 19 mm plywood or piece of scaffold board should be used to construct hole covers, where possible scaffold board should be used.
11. All grating removal operations shall have a dedicated hole watch person posted at the opening as long as the opening does not have a secured hole cover on it.
12. The dedicated hole watch person shall wear a high visibility yellow vest, must be trained in the responsibilities of their duties, must be issued a badge indicating they have completed and passed the course and must remain at the location at all times until the opening is covered properly.
13. The duties of dedicated hole watch will be to ensure that all persons entering the work space meet all requirements set forth, ensure that the permit is in place, ensure that no unauthorized persons enter the work space, and ensure that all requirements of this procedure are met.
14. No floor opening will be left uncovered. Hole covers will only be removed while work is being performed which requires the opening. Hole covers will be replaced at the end of each shift, during breaks or any other absence of the workers performing the task. In the event a hole cover cannot be replaced during a break, a dedicated hole watch must be in place during the entire period of work stoppage.
15. 100% fall protection must be in place within the barricaded work area prior to the removal of the grating, during the time the grating is not in place and until the grating is replaced.
16. No work will take place within an area where flooring has been removed without a permit to work (See attachment 2), being in place.
17. This permit is in addition to that required simply for the removal of the flooring or grating.

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18. Any person or work group wishing to work inside a barricaded area where flooring or grating has been removed must, at least 24 hours in advance of such work, apply for a permit as in attachment 2.
19. The permit must detail the nature of the work to be carried out, including the method to be employed and tools/equipment used.
20. The permit must detail any special precautions which are required to be taken for working inside the barricaded area.
21. A full listing of workers involved must be appended to the permit together with the name of the supervisor in charge of the works.
22. The requirements of this permit must be addressed during the TBM briefing held prior to work commencing.
23. If open holes are temporarily covered then the cover shall be constructed of material (wood or steel) sufficient to withstand a load of 250 Kg and be properly secured.
24. On completion of the work, DEC's supervisor and safety shall inspect the work area to ensure the grating has been properly replaced and secured and that the area is completely safe. If satisfactory, sign the permit off and retain a copy of the permit on record at DEC HSE department.
25. A copy of the completed permit must be available at the work place at all times.

4. ATTACHMENTS

Attachment 1: Flooring and Grating Removal Permit

Attachment 2: Notification of Work inside Barricaded Area Permit

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Attachment 1: Flooring and Grating Removal Permit

Flooring and Grating Removal Permit	Permit No: 00000	
<p>Under no circumstances shall flooring or grating be removed from any area without prior approval being granted by the issuance of this fully signed and completed permit.</p> <p>Permits will only remain valid for a maximum of one(1) week from the date of commencement shown in part 1.</p> <p>This permit is to be returned to DEC with part 3 fully completed when the grating has been replaced and secured.</p>		
Part 1 : Application (To be completed by the subcontractor)		
1. Subcontractor : _____ 2. Requested By : _____ 3. Reason for Removal : _____ 4. Location : _____ 5. Area : _____ 6. Date and Time of Request : _____		
Preliminary Approval Construction : _____ HSE : _____		
Part 2 : Approval (To be completed by Daewoo E&C)		
<u>Action Required</u>	<u>Yes / No</u>	<u>Comments</u>
1. Hard Barricade :	Yes / No	_____
2. Hole Cover with Sign in place :	Yes / No	_____
3. Warning Sign @ Location :	Yes / No	_____
4. Adequate Lighting :	Yes / No	_____
5. Dedicated Hole Watch :	Yes / No	_____
Final Approval Construction : _____ HSE : _____		
Distribution(3 copies) 1. White Copy : Work Site, 2. Pink Copy : DEC, 3. Green Copy : Subcontractor		

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Attachment 2: Notification of Work Inside Barricaded Area Permit

<h2 style="margin: 0;">Notification of Work Inside Barricaded Area Permit</h2>	
Grating Removal Permit No:	Issued To:
Requested By:	Company:
Area:	Location:
Duration : From _____ To _____	
Description of Work (Including Method and Equipment)	
Special Precaution to be taken:	
The Work will be Supervised By :	
List of Workers Involved :	
1.	6.
2.	7.
3.	8.
4.	9.
5..	10.
Name of Applicant :	Date :
DEC Supervisor :	Date :
DEC HSE Representative :	Date :
<p>Any change in method of work or equipment as describe above will invalidate this permit.</p> <p>In such cases, a new permit must be made out. If during work, irregularities or disturbances occur DEC must be informed immediately.</p>	