



WORK MANAGEMENT SYSTEM (WMS)

Framework

ABU DHABI NATIONAL OIL COMPANY

TODAY

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شركة الظفرة البترولية
Al Dhafra Petroleum

Exceptions
بوريج
Borouge

شركة ياسات البترولية
Al Yasat Petroleum



WMS STANDARDS

- ❑ WMS is the current replacement of various existing PTW standards across all Group Company
- ❑ Implementing a single system procedure which is common across all GC which will integrate **5 critical HSE process**

- 1) PTW
- 2) JSA (including RA)
- 3) Energy Isolation (EI)
- 4) Temporary Defeat
- 5) SIMOPS



WMS FRAMEWORK



Introduction

- ❑ Key Objectives
- ❑ Purpose
- ❑ Scope

Key Roles

- ❑ Roles and Responsibilities

Framework

- ❑ WMS Elements
- ❑ Continual Improvement

WMS FRAMEWORK



Key Objectives

- One Set of System
- Harmonized Terminologies
- Simplified & Effective Lessons Learned
- Familiarity of Contractors
- Agility for Movement

“A safety tool to ensure that the work is properly controlled, coordinated and communicated”

WMS FRAMEWORK



Purpose

- Description of key aspects and requirements
- ✓ Facilitate harmonization and integration (**5 HSE standards**)
- ✓ Defines the structure of WMS (**8 stage process**)
- ✓ Provides requirements of WMS elements (**4 elements**)

WMS FRAMEWORK



Scope

- Applicability
- Shared Interface Areas b/w GC or External Authorities
- Contractor Responsibilities
- Non-ADNOC facilities / greenfield provisions

WMS FRAMEWORK



Key Roles and Responsibilities

- ADNOC Group HSE, SVP (HQ) – Custodian
- Group Company CEO – Appoint Asset Owner (AO)
- Group Company VP-HSE – Tier 2 & 3 Audit
- Group Company Asset Owner (AO) – Compliance to WMS

Each Group Company shall maintain an **up-to-date** and **approved list** of the personnel authorized as **signatories** in the PTW System

WMS FRAMEWORK



❑ 4 WMS Elements

- 1) **Custodianship** - ADNOC Group HSE SVP (HQ)
- 2) **Deviation Management** (AO - RA to reduce risk to ALARP)
 - ✓ Application of WMS Standards Deviations and Approvals (AO shall request (RA) to GC VP HSE for review, HSE SVP-HQ)
 - ✓ Application of Stringent Requirements (Stricter Guidelines)
 - ✓ Emergency work Deviations
- 3) **Document Retention** (Min **1 year**) (For e-PTW **wet-ink signature** or doc not captured in e-PTW should be retained for 1 year)

WMS FRAMEWORK



4) Training and Competency Assurance

Asset Owner responsible to authorize and appoint competent **WMS Signatories** once the personnel have successfully completed **relevant training** followed by a formal **written** and **practical assessment**.

WMS FRAMEWORK



Continual Improvement

Periodic review of WMS Standards – **Annually** – ADNOC Group HSE

- WMS Audits (Check Compliance and Improve Performance)
 - Tier 1 – Daily Monitoring (**Self Audit**) – Competent personnel who are authorized by Asset Owners
 - Tier 2 – Annual (**Assessment by GC**) – GC VP HSE
 - Tier 3 – Every 3 Years (**Independent Assessment**) – GC VP HSE

WMS FRAMEWORK



Additional Notes

- All contractors must follow WMS standard for all activities performed within ADNOC operating facilities in the course of carrying out their contractual requirements.
- If any documentation and all relevant attachments required as per WMS Standards form part of an **investigation for any reason**, the related documents shall remain **in archive** for the duration of the investigation.

THANK YOU



Questions and Answers



**100%
HSE**



WORK MANAGEMENT SYSTEM WMS

Permit To Work (PTW)

ABU DHABI NATIONAL OIL COMPANY



AGENDA OF THE PACKAGE...



- Introduction
- Purpose
- Scope
- Key Roles
- Framework
- Process



PERMIT TO WORK



System containing documents for controlling and coordinating work to:

- Establish and maintain **safe working conditions**
- Ensure **hazards & controls** are defined and implemented
- Act as a **written agreement** between parties

ADNOC WMS – PERMIT TO WORK

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PERMIT TO WORK



The Permit clearly documents:

- Specific work scope
- Known worksite conditions via supporting documents
- Preparations, worksite hazards, precautions and controls
- Equipment, systems, buildings and work areas associated
- Affected parties and required communications
- Requirements for personal protective equipment
- Verification of preparations and controls
- Revalidation

ADNOC WMS – PERMIT TO WORK

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PERMIT TO WORK



Purpose

Ensure that a well-defined system is implemented across all ADNOC Group Companies ensuring that:

- Types of work are clearly defined
- Authorized at the appropriate level
- Categorized according to types of **Permits with Certificates**
- An appropriate level of planning
- Persons are trained and competent
- An appropriate **level of Job Safety Analysis**
- Appropriate control measures are identified & communicated



PERMIT TO WORK



Purpose

Ensure that a well-defined system is implemented across all ADNOC Group Companies ensuring that:

- Work sites and equipment are adequately prepared
- The personnel executing the work fully understand scope
- Work activities are carried out safely aligned to conditions
- Worksite is returned to a safe condition
- A time validity is applied to each Permit
- A formal hand-back procedure is in place
- Monitoring is carried out
- PTW exemptions are identified, assessed & approved (AO)**



PERMIT TO WORK



Scope

- Applicability
- Contractor Requirements and Responsibilities
- Non ADNOC Facilities and Greenfield Locations
- Alignment (Read in conjunction with other WMS Std)
- Principles (WMS Elements)



PERMIT TO WORK



For proper harmonization, a common terminology for naming of roles and understanding of their responsibilities and accountabilities.

Each GC shall maintain an **up-to-date** and **approved list** of the personnel authorized as **signatories** in the PTW System:

- Approved in **writing** by **Asset Owner**
- Reviewed** and approved on an annual basis
- Up to date**
- Readily available**



PERMIT TO WORK



Roles and Responsibilities

- Asset Approval Authority (AAA) – **Controls Approval** (**Critical & Hot Work**)
- Area Authority (AA) – **Authorization** (Also responsible for **approving GWP**)
- Permit Issuer (PI) – **Issue**
- Performing Authority (PA) – **Request & Return**
- Job Performer (JP) – **Accept & Execute**
- Permit Endorser (PE) – **Endorse** (**Affected Parties**)

ADNOC WMS – PERMIT TO WORK

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PERMIT TO WORK



WORK CONTROLLED UNDER PTW

- The safe and effective use of the PTW system is the responsibility of the respective **Asset Owner**
- Work Categorization Chart (WCC)** advises the **type** of permit
- Exemptions from the PTW process shall meet **all** the below:
 - 1) Routine activities (including maintenance)
 - 2) Low risk in nature
 - 3) Single discipline / trade
 - 4) Completed in less than a shift (<12hrs)
 - 5) No impact on operations



**JSA L2
required**

ADNOC WMS – PERMIT TO WORK

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PERMIT TO WORK

Critical Work Permit (17 activities mentioned in WCC)



- ❑ A permit used for critical work activities listed in 'Work Categorization Chart' or identified by the Group Company as Critical or High / High-Medium Risk (as per ADNOC RAM)
- ❑ Spark Potential nature of work in hazardous area will be covered under the Critical Permit



ADNOC WMS - PERMIT TO WORK

PERMIT TO WORK

- ❑ WCC has 4 parts
- ❑ Part A for JSA
- ❑ Part B for HWP
- ❑ Part C for CWP
- ❑ Part D for GWP

WORK CATEGORIZATION CHART	
Notes:	
1. Tick at the top of the list and answer each question by placing an 'X' in the 'YES' or 'NO' column.	
2. All questions in PART A must be answered 'YES' in order to use an existing JSA.	
3. The permit type and JSA Level is indicated below with a color code in Part B,C & D. For Hot Works in outside hazardous/classified areas, the need for approval of JSA's shall be determined by WCC's team.	
4. Further filling is not mandatory after Part "YES" in part B and C.	
5. Where a Formal Risk Assessment has been deemed necessary by the RWAP Team, the Formal Risk Assessment shall be attached to any category of PTW.	
PART A	
1. Does an approved JSA exist for the planned work activity? (Please use Library)	Yes No
Provide JSA Number	
Indicate activity type	Hot Work Critical Work General Work
2. Does the work activity in the JSA match the method statement/activity description for the planned work activity?	Yes No
3. Does the JSA identify all of the hazards associated with the planned work and specify appropriate control measures? Consider Location, Specific Hazards, etc.	Yes No
The permit may be required even if existing JSA, method statement, permit exists. Consider the assessment in PART B to determine if Hot Work permit is required.	
PART B	
1. Does the work involve burning, gas cutting / welding or use of naked flame?	Yes No
2. Does the work involve portable generator - specifically powered for an extension?	Yes No
3. Does the work involve high fluid processes (200°C & above) such as electrical insulation preheating, oil and well head treatment (PWHT), or use of high temperature substances etc.	Yes No
4. Does the work involve electrical welding?	Yes No
5. Does the work involve dry grit / shot blasting in Hazardous/Classified Area?	Yes No
6. Does the work involve use of explosive devices?	Yes No
7. Does the activity involve entry into a Hazardous/Classified Area with a vehicle or machine (IC Engine) without Alex Certified Churny Valve and Spark Arrestor?	Yes No
A Hot Work Permit and JSA Level 2 is required. Refer Note 2 above.	
Consider the assessment in PART C to determine if Critical Work permit is required.	
PART C	
1. Does the work involve hotting, carbon sources?	Yes No
2. Does the work involve hot works, hot surfaces, hot applications, painting, grit blasting etc.) in confined spaces?	Yes No
3. Will the work be done at height outside approved scaffolding platforms or fixed structures? (e.g. Rope Access, Critical Scaffold Erection)	Yes No
4. Does the work involve breaking of containment including spotting and the spalling of systems or equipment containing hydrocarbons or other high pressure, high temperature or hazardous fluids?	Yes No
5. Does the work require breaking into lines where isolation valves are suspected to be closing?	Yes No
6. Does the work involve working on or near a Pressurized Steam System?	Yes No
7. Does the activity involve spark potential work or entry into a Hazardous/Classified Area with a vehicle or machine (IC Engine) with Alex Certified Churny Valve and Spark Arrestor installed?	Yes No
8. Does the work involve work on a single ATEX isolation as primary isolation?	Yes No
9. Will the work activity involve Ultra high pressure (UHP) water jet cutting?	Yes No
10. Will it be required to carry out all or part of the Work Activities at night or in condition of potentially hampered visibility?	Yes No
11. Will it be required to carry out all or part of work activity in difficult or extreme environmental conditions (high heat / High humidity, etc.)?	Yes No
12. Does the work involve active bulk cooling requires for clamps (spindles, etc.) and other cooling processes in agitator/bottom and other systems with hazardous conditions?	Yes No
13. Does the work affect facilities provided for the refuge system, fire, escape and evacuation of personnel, e.g. accommodation, refuge, temporary refuge, emergency / escape lights, personal safety equipment, helicopter support systems, gangway, tertiary means of escape and rescue facilities?	Yes No
14. Do any of the tasks involve working on equipment or on pipe work or vessels contaminated with pyrophoric iron scales and require handling of pyrophoric iron residues / materials and wastes?	Yes No
15. Does the work involve a confined lift?	Yes No
16. Does the work involve working with or in proximity of High Electrical Voltage?	Yes No
17. Does the work involve Drilling?	Yes No
Critical Work Permit and Level 2 JSA is required. Refer Note 2 above.	
Consider the assessment in PART D to determine if General Work permit is required.	
PART D	
1. Does this activity require a PTW as per "PTW Standard Definitions"?	Yes No
2. Does the work involve a hot work activity?	Yes No
General Work Permit and Level 1 JSA is required. Refer Note 2 above.	
Further filling is not mandatory after Part "YES" in part D.	

ADNOC WMS - PERMIT TO WORK

CRITICAL WORK PERMIT

Form No. _____ Project/Job No. _____ Work Order No. _____

SECTION 1 - PERMIT REQUEST

1. (a) Nature of Work (tick as appropriate)

1. (b) Work Details

1. (c) Location / Equipment

1. (d) Description of Work

1. (e) Work Equipment Details

1. (f) Work Permit Issued by Performing Authority (PA)

SECTION 2 - WORK-SITE CONTROLS AND SUPPORTING DOCUMENTS

1. Permits/Authorizations

2. PPE/LO Lockout

3. Temp. Control

4. Access only Test

5. Confined Space Entry

6. Working Barriers

7. Safety Lanyard

8. Excavation

9. Shoring

10. Hoist/Crane

11. Lifting

12. Lifting

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SECTION 3 - PERMIT ENDORSEMENT

SECTION 4 - PERMIT APPROVAL

SECTION 5 - PERMIT CLOSURE

SECTION 6 - PERMIT CLOSURE

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ADNOC Classification: Internal

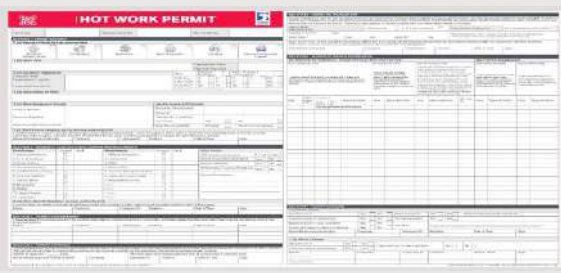
PERMIT TO WORK


Hot Work Permit (7 activities mentioned in WCC)

A permit used for activities that contain a **positive source of ignition** as part of the nature of work activity. Examples include but not limited to hot surfaces, naked flames, hot gases, mechanically produced sparks, chemical reactions, etc.

ADNOC WMS - PERMIT TO WORK

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HOT WORK PERMIT

SECTION 1 - PERMIT REQUEST

1. (a) Nature of Work (check all that apply):

1. (b) Work Title: _____

1. (c) Location / Equipment: _____

1. (d) Description of Work: _____

1. (e) Work Equipment Details: _____

1. (f) Work Permit Issued by: _____

SECTION 2 - WORKSITE CONTROLS AND SUPPORTING DOCUMENTS

2. (a) Hot Work Controls: _____

2. (b) Worksite Safety: _____

2. (c) Worksite Security: _____

2. (d) Worksite Access: _____

2. (e) Worksite Egress: _____

2. (f) Worksite Fire: _____

2. (g) Worksite First Aid: _____

2. (h) Worksite Emergency: _____

2. (i) Worksite Safety: _____

2. (j) Worksite Security: _____

2. (k) Worksite Access: _____

2. (l) Worksite Egress: _____

2. (m) Worksite Fire: _____

2. (n) Worksite First Aid: _____

2. (o) Worksite Emergency: _____

SECTION 3 - PERMIT ENDORSEMENT

3. (a) Permit Endorsement: _____

3. (b) Permit Approval: _____

SECTION 4 - PERMIT CLOSURE

4. (a) Permit Closure: _____

4. (b) Permit Closure: _____

ADNOC Classification: Internal

PERMIT TO WORK

General Work Permit

- A Permit used for activities that does not form part of the defined critical work, and does not contain any hot work.



ADNOC WMS - PERMIT TO WORK

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ADNOC GENERAL WORK PERMIT

SECTION I - PERMIT RECORD

1. (a) Nature of Work (Check as appropriate)

1. (b) Work Title

1. (c) Location / Equipment

1. (d) Description of Work

1. (e) Work Equipment Details

1. (f) Work Permit Issued by Performing Authority (IPA)

SECTION II - WORKSITE VERIFICATION

1. (a) Permit Issuance

2. (a) JSA

3. (a) Lifting Plan

4. (a) Asbestos Test

5. (a) Confined Space Entry

6. (a) Working Backlogs

7. (a) Work on Water

8. (a) Excavation

9. (a) Digging

10. (a) Road Closure

11. (a) Excavation

1. (b) Work Permit Issued by Area Authority (AA)

SECTION III - PERMIT ENDORSEMENT

SECTION IV - PERMIT AUTHORIZATION

1. (a) Worksite Verification - Required every shift / work period

1. (b) Permit Issuance

1. (c) Permit Suspension

SECTION V - PERMIT CLOSURE

1. (a) Permit Closure

ADNOC Classification: Internal

PERMIT TO WORK

Certificates

- Set of supporting documents (Shall be attached to PTW)
- Complementary to PTWs (Do not in themselves, authorize work to be carried out)
- Standalone documents (Assist in identifying & certifying controls and conditions req prior to permit issue)
- Used for preparatory work (for the main permit)

ADNOC WMS - PERMIT TO WORK



PERMIT TO WORK

Confined Space Entry Certificate

- Any work that requires entry into a confined space or into an area that could become a confined space through a fall in oxygen levels through introduction of harmful airborne contaminants or presents difficulty in rescuing and treating an injured or unconscious person.

ADNOC WMS - PERMIT TO WORK

100% HSE **CONFINED SPACE ENTRY CERTIFICATE**

Section 1 - CERTIFICATE APPLICATION

1a. Authorized Person's Certificate

1b. Assessed Permit & Certificate

Section 2 - SITE PRECAUTIONS & AUTHORIZATIONS

2a. Worksite Safety Precautions

2b. Signatures of the Permit Issuer

2c. Signatures of the Area Authority

Section 3 - SIGNATURES OF THE WORKERS

Section 4 - CERTIFICATE CLOSE

4a. Signatures of the Permit Issuer

4b. Signatures of the Area Authority

PERMIT TO WORK

Excavation Certificate

- Required whenever breaking into ground (including drilling) and cutting into floors, walls, or ceilings to specify the precautions needed to protect personnel against collapse of the excavation or the hazards of penetrating/damaging underground cables, pipes or services during excavation work.
- If depth is more than 1.2m and W/D <2 is classified as Confined Space
- Note: Excavation Certificate is applicable in all areas (Restricted/Unrestricted)
- Authorized Civil Personnel** Responsible for all excavations onsite and the authorizing signatory for Excavation Certificates

ADNOC WMS - PERMIT TO WORK

100% HSE **EXCAVATION CERTIFICATE**

Section 1 - CERTIFICATE APPLICATION

1a. Authorized Permit & Certificate

Section 2 - SITE PRECAUTIONS & AUTHORIZATIONS

2a. Underground Site Risk Identification

2b. Worksite Safety Precautions

2c. Signatures of the Authorized Civil Personnel

2d. Signatures of the Area Authority

Section 3 - SIGNATURES OF THE WORKERS

Section 4 - CERTIFICATE CLOSE

4a. Signatures of the Permit Issuer

4b. Signatures of the Area Authority

PERMIT TO WORK

Vehicle & Machine Entry Certificate

❑ Required whenever operating equipment with combustion engines such as forklift trucks, generators, compressors, etc. are introduced into **Zone Classified Hazardous areas.**

❑ Vehicle and Machine Entry Certificate is valid for **one vehicle.** Any change in vehicle requires approval from Area Authority (AA)

ADNOC WMS – PERMIT TO WORK

PERMIT TO WORK

Diving Certificate

❑ A Diving Certificate is required to ensure that appropriate control measures are strictly applied to all activities involving a diving operation which reduce the risks to a diving team to ALARP.

❑ Note: Diving Certificate shall be issued to **Diving Supervisors** only

ADNOC WMS – PERMIT TO WORK

PERMIT TO WORK

Ionizing Radiation Certificate

- ❑ Ionizing Radiation Certificate is required for all activities that involve handling and/or use of radioactive sources such as Radiography and Radioactivity based process instruments and NORM contaminated waste from process lines/vessels/tanks.
- ❑ **RPO** in conjunction with AA need to identify site precautions

ADNOC WMS – PERMIT TO WORK 23

The form is titled 'IONIZING RADIATION CERTIFICATE' and is divided into several sections:

- SECTION 1 - GENERAL APPLICANT:** Includes fields for License No., Permit No., Permit Expiry Date, and Permit Status.
- SECTION 2 - SITE PRECAUTIONS:** Contains a table for identifying radioactive sources, including fields for Source ID, Activity, and Precaution Level.
- SECTION 3 - PERSONNEL:** Lists personnel involved in the work, including their names, roles, and training status.
- SECTION 4 - CONTROL AREA:** Details the control area boundaries and safety measures.
- SECTION 5 - AUTHORITY:** Includes fields for the permit holder's name and signature.

PERMIT TO WORK

Atmospheric Test Record Form

- ❑ In order to determine the concentration of harmful vapors and/or the adequacy of the oxygen content, periodic or continuous atmospheric testing during the work would be required.
- ❑ **AA** determine the frequency of Gas Test
- ❑ Note: All Efforts shall be made to conduct Atmospheric test **within 1 hour** prior to the commencement of work

ADNOC WMS – PERMIT TO WORK 24

The form is titled 'ATMOSPHERIC TEST RECORD FORM' and includes the following sections:

- SECTION 1 - ATMOSPHERIC TEST RECORD FORM:** A table for recording test results, with columns for Test No., Reference #, Test Type, and Test Result.
- SECTION 2 - ATMOSPHERIC TEST INSTRUMENTS:** A table for recording instrument details, including Instrument ID, Name, and Calibration Date.
- SECTION 3 - ATMOSPHERIC TEST RESULTS:** A large table for recording test results, with columns for Test No., Reference #, Test Type, and Test Result.

PERMIT TO WORK

Easement Certificate

- ❑ Required for any construction and/or repair activities performed in the common service / utility area with pipelines in communication / electrical power lines (**outside the fenced area** of an operating asset or pipeline berm (5m to 30m)
- ❑ Required in **Proximity areas, Shared Interference areas & Offsite areas**

ADNOC WMS – PERMIT TO WORK

PERMIT TO WORK

Energy Isolation Certificate – Process, Mechanical & Instrumentation

- ❑ Work that requires **isolating** the energy source/equipment to be able to conduct the work activity.



ADNOC WMS – PERMIT TO WORK



PERMIT TO WORK

Road Closure Certificate

- Required for work activities that require closure of roads.
- Max Validity of 28 Calendar Days
- Authorized Fire Personnel signature is required

ADNOC WMS – PERMIT TO WORK

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100% HSE		ROAD CLOSURE CERTIFICATE		ADNOC	
Certificate No.			Previous Certificate No.		
SECTION 1 - CERTIFICATE APPLICATION					
1.1a Details of Road Closure			1.1b Associated Permits & Certificates		
Road Location			Permit & Certificate Type		
Purpose of Closure			Ref. Number / Status		
Type of Road Closure: Full Road <input type="checkbox"/> Partial Road <input type="checkbox"/>					
Planned Start Date					
Planned End Date					
Risk Assessment: JSA <input type="checkbox"/> Ref No.					
Circuit: <input type="checkbox"/> Ref No.					
Other: <input type="checkbox"/> Ref No.					
No. Signature of the Certificate Applicant			*If blank, certificate to be updated by Area Authority		
Name			Company		
Employee ID			Position		
Date & Time			Sign		
SECTION 2 - DETAILED INFORMATION					
2.1a Workable Safety Precautions			2.1b Other Precautions (Unauthorized Personnel)		
Excavation operations <input type="checkbox"/>			Work in progress <input type="checkbox"/>		
Work in progress <input type="checkbox"/>			Other Precautions <input type="checkbox"/>		
Road Closure Details					
Road Closure Location					
2.2 Signature of the Authorized Person					
I have reviewed the above sections and confirm that the certificate requirements being asked for this road closure.					
Name					
Company					
Employee ID					
Position					
Date & Time					
Sign					
2.3 Signature of the Area Authority					
I confirm that the work is necessary and safe for the safe road closure.					
Certificate Validity: This certificate shall be valid for _____ Days / Weeks / Months					
Name					
Company					
Employee ID					
Position					
Date & Time					
Sign					
2.4 Signature of the Permit Issuer					
The safety measures and precautions are appropriate as specified above, to the road closure being implemented.					
Name					
Company					
Employee ID					
Position					
Date & Time					
Sign					
SECTION 3 - CERTIFICATE CLOSURE					
3.1 Signature of the Permit Issuer					
I have verified that the road is clear and safe in safe condition, all equipment and material have been removed and the road is safe for traffic.					
Name					
Company					
Employee ID					
Position					
Date & Time					
Sign					
3.2 Signature of the Area Authority					
I have reviewed the above application and confirm that the certificate is closed.					
Name					
Company					
Employee ID					
Position					
Date & Time					
Sign					

Form No. 002/01/11 Rev. No. 01 / Closure Site No. 002/01/11 Page 1 of 1

PERMIT TO WORK

Document Requirements

- Paper based PTW Systems
 - Original copy is displayed at **work site** by **Job Performer**
 - First (1st) copy retained by the **Area Authority**
 - Second (2nd) copy retained in the **Control Room**
- For electronic PTW systems
 - A printed hard copy shall be displayed at the **worksite** during execution (**JP**)

ADNOC WMS – PERMIT TO WORK

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PERMIT TO WORK



To ensure that precautions required for tasks of a long duration are reviewed regularly, limits are set on the validity periods of Permits and associated Certificates.

- Type of permits and certificates
- Maximum validity of certificate
- Re-validation requirements of the permits and certificates

Critical Work Permit	Max. 7 calendar days validity	Revalidated Every Shift
Hot Work Permit	Max. 7 calendar days validity	Revalidated Every Shift
General Work Permit	Max. 7 calendar days validity	Revalidated Every Shift



PERMIT TO WORK



Certificate Type	Validity	Re-Validation
Confined Space Entry (CSE)	Specified by Area Authority (AA)	Every Shift
Atmospheric Test Record Form	Not Applicable	Not Applicable
Vehicle and Machine Entry	Specified by Area Authority (AA)	Not Applicable
Diving	Specified by Area Authority (AA)	Not Applicable
Excavation	Specified by Area Authority (AA)	Not Applicable
Ionizing Radiation	Specified by Area Authority (AA)	Every Shift
Road Closure	Specified by Area Authority (AA)	Not Applicable
Easement	Specified by Area Authority (AA)	Not Applicable
Energy Isolation	Not Applicable	Not Applicable
Temporary Defeat	Defeat Approval Authority (DAA)	Not Applicable

- Permit Issuer (PI) will re-validate the certificate**



PERMIT TO WORK



Signatory Limits

- ❑ There should be a **sensible limit** on the maximum number no of Permits to be administered by signatories approved by **Asset Owner**

ADNOC WMS – PERMIT TO WORK
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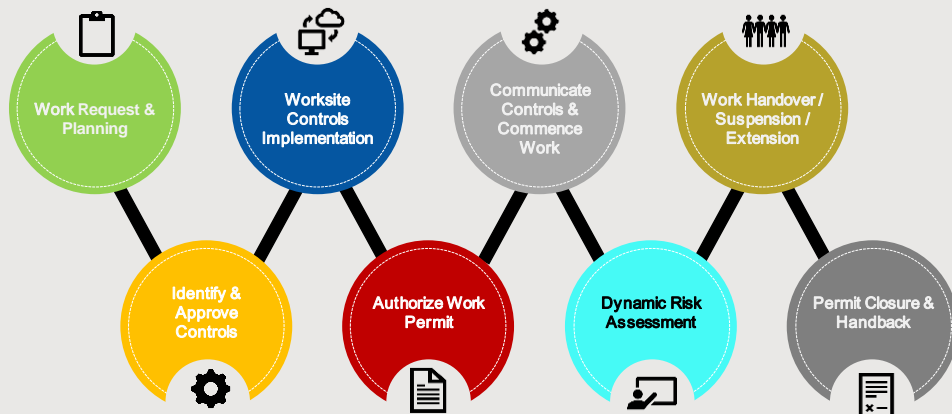
Authority	No. of Permits	No. Critical Permits	No. of Hot Work Permits
Area Authority (AA)			
Permit Issuer (PI)			
Performing Authority (PA) - ADNOC			
Performing Authority (PA) - Contractor			



PERMIT TO WORK



The Permit to Work (PTW) is an 8-step process



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PERMIT TO WORK



Work Request and planning - (IWAP) Process

The **Integrated Work Activity Plan** shall be developed in alignment with operational priorities while:

- Ensuring that Asset Owner's HSE objectives are achieved
- Balance between maintenance / operational plant req

IWAP Team composition:

- Asset Owner or Representative, PTW Coordinator, Planning Representative and Performing Discipline.



PERMIT TO WORK



Description of Work

- Performing Authority (**PA**) shall provide **clear and adequate description** about the following aspects:
 - A clear and concise title and description and location of work
 - Proposed / Planned start and finish date or duration
 - Job Performer (JP) details namely Discipline / Department
 - Expected number of people in the work party
 - Equipment, material and tools to be used
 - Providing documents supporting the work activity such as Method Statement, Procedures, Checklists, Drawings etc.



PERMIT TO WORK



Initial Job Analysis (IWAP Team)

Proposed work scope shall be classified according to the nature of work activity utilizing '**Work Categorization Chart**'. The Initial Job Analysis shall be used to determine:

- PTW with Type or PTW Exempted
- JSA (Level 1 or Level 2) or Formal Risk Assessment**
- Permit type to be raised
- Nature of the work activity
- Supporting certificates / documents and signatories
- Identification for need of isolations & temporary defeats
 - After IWAP meeting **PA Request for permit**
 - Note: All permits must be requested by PA **at least 24hrs** before work start



PERMIT TO WORK



Identify Controls

Performing Authority (PA) shall identify the applicable hazard and controls (**JSA**) and **attach to the permit form** or participate in **Formal Risk Assessment**.

- General Work Permits require **JSA Level 1** (SHCF)
- Critical & Hot Work Permits require **JSA Level 2** (SHCF + HMF)
- Formal Risk Assessment (FRA) may replace JSA Level 2
(If determined by IWAP team)

As part of the controls identification process, the **AA shall review** and **update the permit pack** (**Permit Validation**)

AA can add **pre-requisite controls** during validation if applicable



PERMIT TO WORK

Approve Controls



- AAA** checks & approves **Hot Work & Critical Work Permits**
- AA** checks & approves **General Work Permits**
- ✓ **AAA** can provide maximum **time validity** period of **7 days**. If permit is not authorized (AA) within 7 days, **approval of AAA shall be required again**
- ✓ For General Permits, If the Permit is not issued (**PI**) on the planned start date, it shall be reverted back to the **Area Authority** for validation, approval and authorization.



PERMIT TO WORK

Worksite Controls Implementation Process



- All **pre-requisite** worksite controls shall be confirmed by **Area Authority (AA)** as “In place and effective” (before authorization)
- Verification of the effective implementation of **controls** shall be provided by Permit Issuer (**PI**) (after authorization by AA and before issue)
- The process for implementation of the controls as per the Permit requirements shall be overseen through the **Daily PTW Coordination Meetings**.



PERMIT TO WORK



Authorization Process by Area Authority (AA) ensuring

- Asset Approval Authority (AAA) approval time is still valid
- Pre-requisite controls are in place and proved effective
- Information is appropriate for the described scope of work
- Authorizations and other req documents are in place
- Authorization is within the PTW limits (Set by AO)
- No conflicts (SIMOPS) shall arise due to the work activity
- Adequate communication protocols are defined (SIMOPS)



PERMIT ISSUE



Communicate Controls and Commence Work

- Atmospheric tests, where required by the permit, shall be carried out as appropriate to cover all activities within the designated area.
- Only Authorized Gas Tester (AGT) with valid certificates shall conduct the tests.
- Job Performer (JP) & Permit Issuer (PI) **joint on-site walk**
- PI shall demonstrate zero energy to JP (If applicable)
- Permit Issuer inform the JP on the Emergency Response procedures and safe evacuation protocols.
- PI will issue the permit** {after verify controls implementation}



PERMIT TO WORK



Communicate Controls and Commence Work

- The **Job Performer (JP)** shall:
 - Sign and **accept** the worksite
 - Adhere to all the worksite requirements
 - Communicate via a Tool Box Talk (**TBT**)

The work party shall be advised of and understand:

- The work content, environment and controls
- The potential hazards and controls required
- Any emergency actions
- Work party responsibilities.



PERMIT TO WORK



Supervision

Job Performer (JP) is in charge of the safe execution of the work and shall ensure:

- Work Team follow the HSE precautions
- Effectiveness of the controls is maintained
- SIMOPs protocols are followed

Stopping the Job

Every individual has an obligation to **STOP THE JOB** if deemed unsafe.



PERMIT TO WORK



Cancellation Rules

- ❑ In certain circumstances or emergencies it may be appropriate to cancel the permit
- ❑ A full re-assessment of work conducted in the affected area to ensure that conditions have not altered

In all cases when a **permit is cancelled**, re-commencing the work activity shall require a **new permit** with all the relevant approvals.

AA at his discretion shall be authorized to suspend/cancel the permit as deemed necessary



PERMIT TO WORK



Re-validation Rules

- ❑ Effective **handover** between incoming and outgoing personnel at shift handover or crew change is **critical**
- ❑ There shall be sufficient overlap to allow proper review and discussion of all permits on the facility
- ❑ At shift change, all incoming personnel shall become acquainted with the status of all ongoing and planned work.

The following shift roles shall be involved:

Area Authority (AA), Permit Issuer (PI) & Job Performer (JP)



PERMIT TO WORK



Suspension

A permit shall be automatically suspended when:

- An emergency alarm is activated at the worksite
- Rescue resources are no longer available
- Severe weather conditions occur
- Shift Ends, if the **time extension** is not approved by AA

At certain circumstances time extension is required. PTW shall be extended by **AA** for maximum **4 hours (Revalidation)**



PERMIT TO WORK



Remote Location Suspension Rules (RFO)

In RFO, **PI can authorize the permit** if delegated by AA

Job Performer shall **suspend** the PTW at the completion of work or end of work shift. Work shall require suspension under direction of the Area Authority (AA) / Permit Issuer (PI) when:

- A hazardous change in atmospheric conditions is identified
- The conditions of the Permit are not being followed
- The work scope changes or conflict with another PTW
- Sanction To Test (STT) is requested



PERMIT TO WORK



Request for Closure of Permit

PA shall **return** the permit pack to **AA** declaring:

- Housekeeping Status
- Equipment Status – Equipment is left in a safe condition
- Work Status (If work is not complete, need to provide reason)
- Work Permit Status

ADNOC WMS – PERMIT TO WORK

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PERMIT TO WORK



Closure of Permit

AA shall ensure the following:

- Verify Permit Issuer signature on the permit (before closing)
- Updating of Isolation Certificates (If applicable)
- Updating of Temp. Defeat Certificates (If applicable)
- Informing other parties to the permits

ADNOC WMS – PERMIT TO WORK

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PERMIT TO WORK

Additional Notes



- For complex and critical activities, a site visit by AA is **recommended**

Permissible Gas Values

- O2 {20.9%} {19.5% O2 Min.....23.5% O2 Max}
- LEL = <5% of LEL
- H2S = <5ppm
- CO = <25ppm
- SO2 = <2ppm
- NH3 = <25ppm

ADNOC WMS – PERMIT TO WORK

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PERMIT TO WORK

Additional Notes



- Before revalidation, AA shall confirm that all Worksite Controls are still in place and effective as per the requirements of the permit
- PI shall authorize de-isolation if delegated by AA
- JSA L2/FRA shall be used for PTW Exempted Activities
- AA identify whether the isolations are to be installed in remote field.

ADNOC WMS – PERMIT TO WORK

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THANK YOU



Questions and Answers



ADNOC WMS – PERMIT TO WORK



WORK MANAGEMENT SYSTEM WMS

Job Safety Analysis

ABU DHABI NATIONAL OIL COMPANY

1



JOB SAFETY ANALYSIS



- Purpose
- Scope

- Key Roles
- Framework
- Process

ADNOC WMS – JOB SAFETY ANALYSIS

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JOB SAFETY ANALYSIS



Purpose

- ❑ The purpose of the JSA Standard and process is to establish **mandatory** requirements for conducting Job Safety Analysis **prior to commencement of work** (using ADNOC PTW system) in areas under control of ADNOC and its group companies.
- ❑ JSA is carried out to ensure that content and location of a work scope are clearly defined, **potential hazards** of the work site & each of the tasks or activities to be performed are identified, the significance of hazards is adequately assessed & sufficient **control measures** are defined to reduce the risks to **ALARP**



JOB SAFETY ANALYSIS



Scope

- ❑ Applicability
- ❑ Contractor Responsibilities
- ❑ Non-ADNOC Facilities / Greenfield Locations
- ❑ Alignment (Read in conjunction with other WMS Std)
- ❑ Principles (WMS Elements)



JOB SAFETY ANALYSIS



Key Roles and Responsibilities

- Asset Approval Authority (**Approval of Work Pack**)
- Performing Authority (**Development of Job Safety Analysis**)
- Formal Risk Assessment (FRA) Team Leader (**Leading FRA**)



JOB SAFETY ANALYSIS



Framework

- Initial Job Analysis
- IWAP Process
- PTW Types & Applicable Levels of JSA

JSA Levels	Mandated for:
Level 1 - Standard Hazard Control Form (SHCF)	General Work Permit
Level 2 - SHCF + Hazard Management Form (HMF)	Critical or Hot Work Permit
Formal Risk Assessment	Where determined by IWAP Team



JOB SAFETY ANALYSIS



Document Library

All JSAs are subject to periodic **review** to ensure they are still applicable, **valid** and up-to date

Type	Validity/Review Frequency
Formal Risk Assessment 	Every 1 Year
Level 2: HMF 	Every 2 Years

Note: JSA L1 Validity: Not Applicable



ADNOC WMS - JOB SAFETY ANALYSIS

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JOB SAFETY ANALYSIS



JSA Level 1:
Standard Hazard Control
Form (SHCF)

Contents (JSA L1)

- 1) PPE Requirements
- 2) Applicable LSR
- 3) Applicable hazards
(aligned with work scope)
and required controls

ADNOC WMS - JOB SAFETY ANALYSIS

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JSA LEVEL 1 STANDARD HAZARD AND CONTROL FORM (SHCF)

This Standard Hazard and Control Form (SHCF) use assist the work preparer to manage hazards for the proposed work. It is expected that the required PPE for the activity and work conditions will be used. The table does not include all possible hazards and specific and safety related controls and controls can be added at locations. The required controls should be checked and effective to authorize the permit the Area Authority.

PPE Required				WORK AUTHORIZATION				ADNOC Life Saving Rules							
Safety Glasses	Mitten	Body Restrain Device	Pressure Sensitive Cover of	TOXIC GAS Follow the rules for working in toxic gas environment at least when required	EMERGENCY EVACUATION Use the correct evacuation route and follow the instructions	ENRAGING SAFETY CONTROLS Check all safety controls before starting work	HOT WORK Check temperature and insulation	ADNOC Life Saving Rules							
Handbook Identification	Force Resistant Gloves	Chemical Mask	Shielding For Radiation					WIRING AT HEIGHT Check your safety before start working at height				WIRING AT HEIGHT Check your safety before start working at height			
Eye Protection	Eye Goggles	Chemical Respirator	Worker's Suit					WIRING AT HEIGHT Check your safety before start working at height				WIRING AT HEIGHT Check your safety before start working at height			
Safety Caps	Check Tool Rubber Gloves (STO)	Clearance	Full Chemical Suit					WIRING AT HEIGHT Check your safety before start working at height				WIRING AT HEIGHT Check your safety before start working at height			
Ear Muffs	Chemical Resistant Gloves	Clearance	Clear PPE	WIRING AT HEIGHT Check your safety before start working at height				WIRING AT HEIGHT Check your safety before start working at height							
Ear Wax / Body Shaver	Reinforced Cotton Gloves	Clearance	Clear PPE	WIRING AT HEIGHT Check your safety before start working at height				WIRING AT HEIGHT Check your safety before start working at height							
Full Body Safety Harness	Leather Gloves	Clearance	Clear PPE	WIRING AT HEIGHT Check your safety before start working at height				WIRING AT HEIGHT Check your safety before start working at height							

ADNOC Classification: Internal

JOB SAFETY ANALYSIS

JSA Level 2:
Hazard Management Form (HMF)

Contents of JSA L2

- 1) Major work steps
- 2) Applicable hazards (aligned with work scope) and its location
- 3) Required controls

ADNOC WMS - JOB SAFETY ANALYSIS

JSA LEVEL 2 HAZARD MANAGEMENT FORM (HMF)

Work Step	Control Measures	Responsible	Reviewed	Approved
1. Job Briefing	Review JSA L1, JSA L2, JSA L3, JSA L4, JSA L5, JSA L6, JSA L7, JSA L8, JSA L9, JSA L10, JSA L11, JSA L12, JSA L13, JSA L14, JSA L15, JSA L16, JSA L17, JSA L18, JSA L19, JSA L20, JSA L21, JSA L22, JSA L23, JSA L24, JSA L25, JSA L26, JSA L27, JSA L28, JSA L29, JSA L30, JSA L31, JSA L32, JSA L33, JSA L34, JSA L35, JSA L36, JSA L37, JSA L38, JSA L39, JSA L40, JSA L41, JSA L42, JSA L43, JSA L44, JSA L45, JSA L46, JSA L47, JSA L48, JSA L49, JSA L50, JSA L51, JSA L52, JSA L53, JSA L54, JSA L55, JSA L56, JSA L57, JSA L58, JSA L59, JSA L60, JSA L61, JSA L62, JSA L63, JSA L64, JSA L65, JSA L66, JSA L67, JSA L68, JSA L69, JSA L70, JSA L71, JSA L72, JSA L73, JSA L74, JSA L75, JSA L76, JSA L77, JSA L78, JSA L79, JSA L80, JSA L81, JSA L82, JSA L83, JSA L84, JSA L85, JSA L86, JSA L87, JSA L88, JSA L89, JSA L90, JSA L91, JSA L92, JSA L93, JSA L94, JSA L95, JSA L96, JSA L97, JSA L98, JSA L99, JSA L100, JSA L101, JSA L102, JSA L103, JSA L104, JSA L105, JSA L106, JSA L107, JSA L108, JSA 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The image shows a detailed 'JSA LEVEL 2 HAZARD MANAGEMENT FORM (HMF)'. It includes sections for 'Job Details', 'HSE Requirements', 'ADNOC LSA', and 'Risk Assessment'. The form is structured with multiple columns and rows for data entry, including a table for 'Risk Assessment' with columns for 'Risk Level', 'Control Measures', and 'Residual Risk'. The ADNOC logo is visible in the top right corner of the form.



ADNOC WMS - JOB SAFETY ANALYSIS

JOB SAFETY ANALYSIS



Formal Risk Assessment (FRA)

❑ Always consist of, at least, **two individuals**

Initial Risk Level	RA Team Composition
Low	<ul style="list-style-type: none"> ❑ Performing Authority (PA) or PA Supervisor ❑ Asset Owner Rep. (Area Authority or his rep.)
Medium	<ul style="list-style-type: none"> ❑ Performing Authority (PA) or PA Supervisor ❑ Asset Owner Rep. (Area Authority or his rep.)
High	<ul style="list-style-type: none"> ❑ Performing Authority (PA) or PA Supervisor ❑ Asset Owner Rep. (Area Authority or above) ❑ HSE Representative ❑ Affected Parties (as applicable) ❑ Fire & Rescue Supervisor (as applicable) ❑ Other Specialists (as applicable)

The image shows a 'FORMAL RISK ASSESSMENT' form. It includes a grid for assessing risks with columns for 'Risk Level', 'Control Measures', and 'Residual Risk'. Below the grid is a table for 'RA Team Composition' with columns for 'Name', 'Role', and 'Signature'. The ADNOC logo is visible in the top right corner of the form.

ADNOC WMS - JOB SAFETY ANALYSIS

FRA (IWAP Team Decision)

Contents of FRA

- 1) Major work steps
- 2) Potential Hazards
- 3) Inherent Risk Ranking
- 4) Required Controls
- 5) Residual Risk Ranking



ADNOC WMS - JOB SAFETY ANALYSIS

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JOB SAFETY ANALYSIS



Approval Of Controls

General Work Permits (**JSA L1 Controls**)

Area Authority (**AA**)

Critical & Hot Work Permits (**JSA L2 or FRA Controls**)

Asset Approval Authority (**AAA**)



ADNOC WMS - JOB SAFETY ANALYSIS

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ADDITIONAL NOTES



- WCC Tool** will allow for deciding the JSA Level required for a specific task
- JSA L2 & FRA** both allows for identification of responsible person to implement controls.
- FRA Team members will be decided based on risk level. All the persons conducting FRA need to **endorse FRA**
- The **AO Representative** has to approve any JSA before it can uploaded to the **JSA Library** for use as a template.

THANK YOU



Questions and Answers



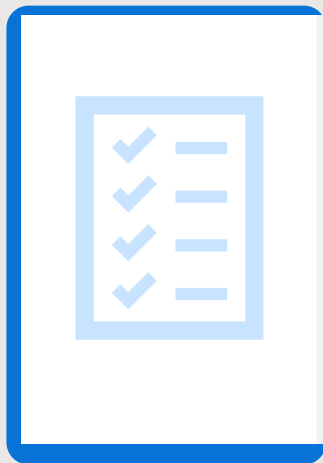


WORK MANAGEMENT SYSTEM WMS

Energy Isolation

ABU DHABI NATIONAL OIL COMPANY

AGENDA



- Introduction
- Purpose
- Scope
- Key Roles
- Framework
- Process

ENERGY ISOLATION



Introduction

Energy Isolation is the process of establishing a **secure break** in the energy supply to ensure that **inadvertent reconnection** is not possible.

Effective energy isolation ensures that equipment **remains** safely isolated for the duration of any work activity and **prevents** accidental **re-pressuring** or **re-energizing** of equipment before personnel have ceased work and equipment integrity has been restored.



ENERGY ISOLATION



Purpose

The Energy Isolation Standard and process provides a **detailed description** of the **Safe Isolation / De-Isolation** and guidelines on **Lock Out - Tag Out** Processes for use on all ADNOC Operational Facilities. The Standard sets out:

- Compliance with applicable Statutory / Legal requirements and Regulations, Codes of Practice and ADNOC Standards; and
- Ensuring risks associated with exposure to hazardous energy sources are as low as reasonably practicable (**ALARP**)



ENERGY ISOLATION



SCOPE

The requirements of the Energy Isolation Standard shall be applicable to:

- All ADNOC group companies
- Employees
- Contractors
- Facilities (including interface areas)
- Activities
- Services and products

Contractors shall be responsible for ensuring that all activities performed within ADNOC operating facilities.



ENERGY ISOLATION



This standard **does not** apply to:

- Cord and plug-connected equipment if the equipment can be completely isolated by unplugging and the person has exclusive control of the plug
- Mobile plant and light vehicles



ENERGY ISOLATION



Roles and Responsibilities

The ultimate success of isolation process depends on the **competence** and **awareness** of the people carrying out the activities. If they do not have a sound understanding of permit or isolation requirements and their own responsibilities, the system will have a **limited effect** on maintaining a safe operation and preventing accidents.

Please use and read this standard in conjunction with other WMS Standards.



ENERGY ISOLATION



Roles and Responsibilities

□ Area Authority (AA)

Approves all IC isolation points to be implemented regardless of discipline after being consulted by the relevant discipline **Isolation Authorities (ISA)**.

AA has **overall responsibility** for ensuring that all IC isolation points have been properly implemented, their integrity checked, **“zero energy”** tested and confirmed and that this is correctly certified (by **Isolation Operators**) in the IC documentation prior to commencement of intrusive work



ENERGY ISOLATION



Roles and Responsibilities

□ Isolating Authority (ISA)

A person with overall responsibility for ensuring correct implementation of, and certification for, isolations being applied prior to intrusive work.

An Isolating Authority (ISA) is a competent person with detailed knowledge of facilities in an asset. This role develops the **isolation requirement** corresponding to their discipline.

ISA can act in the capacity of ISO to install isolations if required.



ENERGY ISOLATION



Roles and Responsibilities

□ Isolating Operator (ISO)

The person responsible for the **field operation** of the asset or, in the case of electrical isolations, the field Electrical technician competent to work on electrical facilities with HV electrical isolations requiring additional HV certification.

The ISO cannot be the Job Performer (JP) for the main permit for which the equipment is being isolated.



ENERGY ISOLATION



Framework

Isolation / de-isolation **requirements** will be documented in an Energy Isolation Certificates (ICs) with all necessary supporting documentation and **information** attached detailing:

- Full description of the types of isolation required with markup
- Unique identification name / number
- Method & Sequence of isolation of a particular isolation point
- Zero Energy Verification requirements
- Provision of Independent Verification of Isolations.




ENERGY ISOLATION



Process, Mechanical & Instrumentation Energy Isolation Certificate


Process / Mechanical / Instrumentation isolations are combined on a **single certificate** for all details related to Separation of plant and equipment from every source of energy (**pressure, mechanical, instrument and control**) in such a way that the separation is secure.





ENERGY ISOLATION CERTIFICATE

(PROCESS / MECHANICAL / INSTRUMENTATION)



SECTION 1 - CERTIFICATE APPLICATION

1.1. Job No. / Work Order No. _____

1.2. Equipment Description _____

1.3. Location _____

1.4. Signature of Issuer _____

1.5. Issued On _____

1.6. Issued By _____

1.7. Issued For _____

1.8. Safety Instructions / Notes _____

1.9. Signature of Receiver _____

1.10. Receiver ID _____

SECTION 2 - ISOLATION REQUIREMENTS

2.1. Isolation Description (Equipment ID, Description) _____

2.2. Isolation Sequence _____

2.3. Isolation Method _____

2.4. Isolation Point(s) _____

2.5. Isolation Method _____

SECTION 3 - INSTALL ISOLATION

3.1. Isolation Method _____

3.2. Isolation Point(s) _____

3.3. Isolation Method _____

3.4. Isolation Method _____

3.5. Isolation Method _____

SECTION 4 - VERIFICATION OF ISOLATION

4.1. Verification Method _____

4.2. Verification Point(s) _____

4.3. Verification Method _____

4.4. Verification Method _____

SECTION 5 - SIGNATURES

5.1. Issuer Signature _____

5.2. Receiver Signature _____

5.3. Supervisor Signature _____


5.4. Safety Officer Signature _____

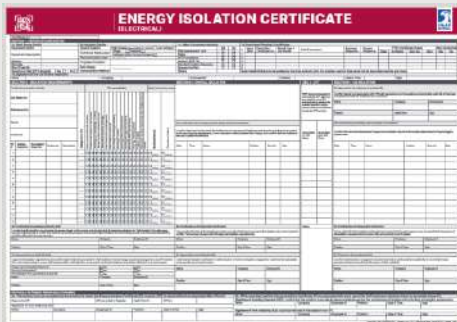
ADNOC Classification: Internal

ENERGY ISOLATION


Electrical Energy Isolation Certificate

❑ Electrical Isolation is a separate Certificate for details related to Separation of plant and equipment from every source of electrical energy in such a way that the separation is secure.





ADNOC WMS - ENERGY ISOLATION





ENERGY ISOLATION CERTIFICATE (ELECTRICAL)



SECTION 1 - CERTIFICATE APPLICATION		SECTION 2 - INSTALLATION		SECTION 3 - PTW		SECTION 4 - DE-ISOLATION	
1.1. Applicant Details Employer's Title No. _____ Extension's Description _____ Location _____ Work Order No. _____ Date of Issue _____ Signature of the Certificate Applicant _____		1.2. Technical Details Task of isolation _____ Electrical Isolation Job _____ Purpose of Isolation _____ Commissioning _____		1.3. Other Documents Attached Risk Assessment / Job Plan _____ PTW _____ Isolation SOP / Job Card _____ Electrical Diagrams _____ Permit to Work / Isolation Plan _____		1.4. Approved Personnel & Licenses Name _____ License No. _____ Position _____ Date of Issue _____ Signature _____	
2.1. Electrical Isolation Details Substation: _____ Address: _____ City: _____ Class: _____		2.2. Technical Details Voltage: _____ Type of Work: _____ Location: _____ Risk Level: _____ Isolation Method: _____ Safety Measures: _____		3.1. Approval by Issuing Authority (IA) Name: _____ Position: _____ Date & Time: _____ Signature: _____		4.1. Approval by Area Authority (AA) Name: _____ Position: _____ Date & Time: _____ Signature: _____	

ADNOC Classification: Internal

ENERGY ISOLATION

Energy Isolation – 9 Step Process



ENERGY ISOLATION



The **Integrated Work Activity Planning (IWAP)** process includes **review of the scope of work requests** received and identify whether isolations are required for safe execution of work. If the work activity requires isolations to be in place, the **scope of isolations** shall be defined which includes:

- System / Equipment to be isolated
- Location of isolation
- Reason for isolation
- Properties of hazardous materials involved



ENERGY ISOLATION



Identify & Approve Controls

The process entails identifying:

- Hazards and risks associated with isolation
- Baseline Isolations (Positive, Proved, Non-Proved)
- Required Minimum Isolation Standards (Valve Config)

It follows by **formal approval (AA)** on the Energy Isolation Certificate before **ISO** can **install** isolation

As part of PTW Process & **Permit Pack Validation**, **AA** shall ensure **appropriate** isolation certificates have been identified for the work scope & direct the **isolation requirements** to the concerned **ISA**.



ENERGY ISOLATION



Hazard Identification and JSA (For Isolation Requirement)

This step requires conducting a **JSA** to implement **isolation requirements** and a corresponding **de-isolation requirements** to return the equipment to the de-isolated state. The JSA should cover all stages of the isolation activity as follows:

- Preparatory work for the isolation
- Installation / removal and proving of the isolation
- The integrity of the isolation during intrusive work
- Requirements for testing and reinstatement of plant



ENERGY ISOLATION



In all cases, the highest reasonably-practicable standard of isolation shall be applied.

Mechanical isolation shall always be used for work **scenarios**:

- Confined space entry
- Naked flame / spark potential hot work on hazardous areas



ENERGY ISOLATION



All isolations shall meet the Baseline & Minimum Isolation Standards. Three (3) methods of **Baseline Isolations**

- ❑ **Positive Isolation (Mechanical Isolation):** removal of a spool and fitting of blinds, or fitting of a spade or spectacle blind
- ❑ **Proved Isolation:** Valve isolation where effectiveness of the isolation can be confirmed via vent / bleed points
- ❑ **Non-Proved Isolation: Valve isolation.** No provision to confirm effectiveness of valve

ADNOC WIMS -ENERGY ISOLATION



ENERGY ISOLATION



Hazard Factor Assessment Tool (HFA)

To determine Baseline Isolation Standards

Category	Description
1	<ul style="list-style-type: none"> • Very Toxic (T+) • Toxic (T) • Carcinogenic, mutagens, toxic for reproduction • Sensitising
2	<ul style="list-style-type: none"> • Extreme flammable (F+) • Highly flammable (F) • Flammable gases (R10) • Flammable liquids (R10) - unless included in category 4 • Perseum products* - unless included in category 4 but also consider whether category 1 is applicable • Oxidising (O) • Explosive (E) • Steam • Pressurised gases >250 bar (3625psi, 25000kpa) • Flaming Fluids • Asphyxiants
3	<ul style="list-style-type: none"> • Corrosive (C) • Harmful (Xn) • Irritant (Xi)
4	<ul style="list-style-type: none"> • Flammable liquids stored below flashpoint, and below flashpoint following release (R13)
5	<ul style="list-style-type: none"> • Non-classification and not stored in potentially harmful state

Substance Category	Outcome Factor		
	A	B	C
1	R	I	I
2	R	I	II
3	I	II	II
4	II	II	II
5	II	III	III

b. Release Factor	Pressure			
	Line Size	>50 barg (725psi, 5000kpa)	≤ 50 barg but >10 barg	< 10 Barg (140psi, 1000kpa)
≥ 200mm	H	H	M	
5cm < line < 200mm	H	M	L	
≤ 5cm	M	L	L	

c. Location Factor	Description	
	H	Any of: Numbers at risk >10; congested equipment; potential for escalation; large fires with potential for damage and multiple fatalities
M	Typically: 3-10 at risk; uncongested plant; storage area or small number of items in open area; minor fire	
L	Characterised by: 1-2 at risk; remote single items; easily contained minor fires	

d. Outcome Factor	Release Factor			
		H	M	L
Location Factor	H	A	B	B
	M	B	B	C
	L	B	C	C

Results	
R	Consider whether the associated risk is acceptable or whether there is a need to further reduce risk (e.g. risk reduction measures), extending the isolation envelope, plant shutdown.
I	Mechanical isolation (e.g. line blind, removable spool, spectacle blind, spade)
II	Proved isolation (e.g. SB&B, DB&B)
III	Non-proved isolation (e.g. SB, DB)

ADNOC WIMS -ENERGY ISOLATION

ENERGY ISOLATION

Minimum Isolation Standards

Valve Configuration to achieve Positive (Mechanical) & Proved Isolation depending on the fluid and pressure ratings

Substance Category	Fluid	Design Pressure	Valve to Install Positive Isolation	Valve to Work without Positive Isolation
1	Toxic Fluids	Pressures up to ANSI Rating Class 150	Single block and bleed	Single block and bleed
		Pressures at ANSI Rating Classes 300 and 600	Single block and bleed	Double block and bleed
		Pressures at ANSI Rating Classes 900 and above	Double block and bleed	Double block and bleed
2	Fuel Gas Hydrocarbon Liquids Hydrocarbon Gas Nitrogen (Asphyxiants) Diesel	Pressures up to ANSI Rating Class 150	Single block and bleed	Single block and bleed
		Pressures at ANSI Rating Classes 300 and 600	Single block and bleed	Double block and bleed
		Pressures at ANSI Rating Classes 900 and above	Double block and bleed	Double block and bleed
3	Chemicals	Pressures up to ANSI Rating Class 150	Single block and bleed	Single block and bleed
		Pressures at ANSI Rating Classes 300 and 600	Single block and bleed	Double block and bleed
		Pressures at ANSI Rating Classes 900 and above	Double block and bleed	Double block and bleed
4	Flammable liquid and gas below flashpoint	Pressures up to ANSI Rating Class 150	Single block and bleed	Single block and bleed
		Pressures at ANSI Rating Classes 300 and 600	Single block and bleed	Double block and bleed
		Pressures at ANSI Rating Classes 900 and above	Double block and bleed	Double block and bleed
5	Service Water Potable Water Firewater Injection Water Instrument Air Plant Air	Pressures up to ANSI Rating Class 600	Single block and bleed	Single block and bleed
		Pressures at ANSI Rating Classes 600 and above	Double block and bleed	Double block and bleed

ENERGY ISOLATION

If it is not possible to meet the requirements of Minimum Isolation Standard or the overall risk of the job increases by doing so, a **Formal Risk Assessment** shall be required meeting the following minimum requirements:

- Satisfaction from the assessment team that the selected isolation controls reduce the risks to **ALARP**
- Consideration of the overall risk exposure to personnel
- Consideration of alternatives (shutdown or deferral)
- Consideration of additional controls



ENERGY ISOLATION



Approve Controls

Once the **Isolation requirements** are confirmed by **ISA**, it shall be approved by **Area Authority (AA)**.

Before approving he shall be responsible to:

- Consider all aspects of work planning, operations resourcing requirements and Simultaneous Operations (SIMOPS)
- Determine if Independent verification is required

Anyone competent in the WMS system can carry out Independent Verification as identified by the Area Authority.



ENERGY ISOLATION



WORKSITE CONTROLS IMPLEMENTATION (ISO)

Process/Mechanical/Instrumentation Isolations

Installation of mechanical isolations could involve **two stages**:

- Valve isolation** – **process isolation** which enables the insertion of a mechanical isolation downstream of the initial isolation
- Mechanical isolation** – **physical isolation** requiring suitable personal protective equipment to mitigate against any undetected failure of the initial isolation



ENERGY ISOLATION



In certain situations, a **separate** Permit to Work (PTW) **shall** be required to **apply** the isolation.

The following conditions define the requirement of PTW for isolations:

- For applying mechanical isolation
- For all intrusive electrical work
- Any PTW requirement for an isolation activity as identified by IWAP



ENERGY ISOLATION



Electrical Isolations

All electrical isolation shall be installed by an authorized and competent Isolating Operator (ISO).

- Low Voltage (LV) isolation
A competent, certified and authorized Isolating Operator (ISO) can apply Low Voltage electrical isolations.
- High Voltage (HV) isolation (**1000V AC /1500V DC** and above)
A competent, certified and authorized Isolating Operator (ISO) can apply High Voltage electrical isolations.



ENERGY ISOLATION



Proving the effectiveness and integrity of Isolations (ISO)

The performance of isolations depends on:

- Integrity of isolation hardware
- Adequacy of the arrangements
- Proving and monitoring of the isolation such as:
 - Opening a bleed, vent or drain valve
 - Pressure build-up tests
 - Electrically test a circuit or attempting to operate equipment



ENERGY ISOLATION



Lock-out

- All isolations shall be **secured** with an approved padlock/locking device to ensure the isolation device is maintained in a safe position.

Tag-out

- An isolation tag shall be attached to each component of an isolation scheme to provide a **visual indication** that a device is in active use as a means of isolation and to facilitate checks that all necessary isolations are in place.



ENERGY ISOLATION



Confirmation of Isolations

- ❑ The Isolating Operator (**ISO**) performing the individual isolations shall **sign all individual isolation points** on the IC.

Independent verification

- ❑ May be required to ensure testing requirements and LOTO procedures have been met as planned and approved. **Both the signatures** shall be recorded on the certificate.



ENERGY ISOLATION



Final Authorization on Isolation Certificate

- ❑ Post signatures of ISO and independent verification (as applicable), **Area Authority (AA)** shall provide a final authorization on the IC.

AUTHORIZE PTW

- ❑ Prior to authorization of PTW, **AA** shall ensure that IC is attached to the work permit with appropriate authorizations and documentation



ENERGY ISOLATION



COMMUNICATE CONTROLS & COMMENCE WORK

Demonstration of Zero Energy

- ❑ Prior to commencement of work and in accordance with PTW standard, the Permit Issuer (PI) shall **demonstrate** the Zero Energy (as applicable) to Job Performer (JP).

Acceptance

- ❑ Job Performer (JP) **accepts** that he has **witnessed** the demonstration of Zero Energy by Permit Issuer (PI). This is covered by the signature of JP on the permit.



ENERGY ISOLATION



Personal Locks

- ❑ Each Job Performer (JP) shall apply and provide the personal **lock no.** on the **respective work permit** prior to commencement of work.
- ❑ Personal lock-out shall be used in **addition** to the primary isolation and not as a substitute for a primary isolation.
- ❑ Each JP attaches his/her own lock to prevent exposure to energy source.



ENERGY ISOLATION



Dynamic Risk Assessment Process

- ❑ It is important to **monitor the integrity** of isolations on worksite for any changes that might prevent the job from being completed safely.
- ❑ Dynamic Risk Assessment is defined as the continuous process of identifying hazards and assessing risks arising due to **changing circumstances** of an operational environment followed by taking action to eliminate or reduce risk.

ADNOC WIMS –ENERGY ISOLATION



ENERGY ISOLATION

Sanction To Test (STT)

- ❑ Elements of an isolation scheme may need to be **temporarily reversed** to confirm that work stages have been correctly completed
- ❑ ‘Sanction To Test’ is required at the intermediate stage of a work activity involving **function checks** and / or **pre-start tests**
- ❑ JP need to **suspend** the permit before requesting for STT (**Approval by AA**)

ADNOC WIMS –ENERGY ISOLATION

The image shows a detailed 'SANCTION TO TEST (STT) APPROVAL FORM' from ADNOC. The form is divided into several sections:

- SECTION 1: SITE EVALUATION BY JOB PERSONNEL:** Includes fields for Job/Workshop Name, Process, Equipment & Tools, Expected Duration of STT, and Purpose of STT. It also has a table for STT Items with columns for S. No., Duration, Category, Description, Location, and Reference.
- SECTION 2: APPROVAL CLEARANCE BY AREA AUTHORITY (AA):** Requires approval for the test and reverse equipment, and a confirmation that all associated safety permits are suspended. It includes a signature line for the AA and a checkbox for 'Independent Verification Required'.
- SECTION 3: JOB ISOLATION BY ISOLATING OPERATOR (JO):** A table for recording isolation points across different trades: Electrical, Process, Mechanical, and Instrumentation. Each trade has columns for Name, Company, Employee No., Position, Date & Time, and Sign.
- SECTION 4: TEMPORARY CHANGE TO ISOLATION SCHEME BY JOB PERSONNEL (JP):** Similar to Section 3, but for temporary changes to the isolation scheme.
- SECTION 5: ISOLATION BY ISOLATING OPERATOR (JO):** Similar to Section 3, for the final isolation setup.
- SECTION 6: COUNTERCHECK OF ISOLATION VERIFICATION:** A table for verifying the isolation points, with columns for Name, Company, Employee No., Position, Date & Time, and Sign.

The form also includes a header with the ADNOC logo and 'HSE' (Health, Safety & Environment) branding.

ENERGY ISOLATION



De-Isolation Process {after all associated permits are closed}

The approval to re-instate the isolation or de-isolation shall be provided by **Area Authority (AA)** on the IC.

- ❑ Once all preparations for re-instatement have been completed and readiness of the plant for recommissioning confirmed, the **Isolating Operator (ISO)** shall remove isolations according to the **de-isolation sequencing (ISA)** as specified in the Isolation Certificate.
- ❑ For certain de-isolations, a **separate PTW** may be required.
- ❑ AA will close IC



ENERGY ISOLATION



Extended Period Isolations (EPI) {AA fill EPI}

Isolations which are required to remain in place although **no work is being carried out** within the isolation boundary. May be required for following **three** main reasons:

- 1) The task has commenced but is suspended for a period exceeding the validity period of the Permit
- 2) An item of equipment that has been installed but is awaiting commissioning / start-up
- 3) An item of equipment becomes redundant and is to be isolated, pending an MOC to remove it



ENERGY ISOLATION



As per WMS Standard: Energy Isolation

- All isolations shall be recorded in the Isolation Register
- All GC shall utilize their Group Company specific LOTO standards during isolation
- All Extended Period Isolations shall require a periodic review and integrity check

While determining the isolation requirements for a particular isolation, the Isolating Authority (ISA) shall utilize **Hazard Factor Assessment (HFA)** tool to determine **Baseline Isolation Standards**. The ISA shall also ensure result of baseline isolation standard meets the **Minimum Isolation Standards**



ENERGY ISOLATION



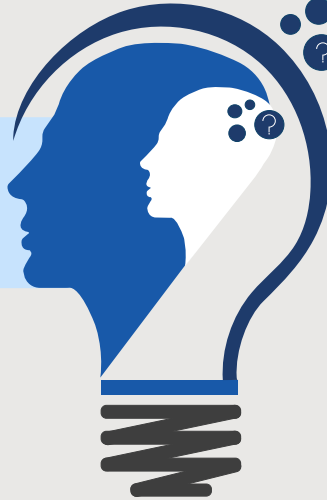
- Requirement to conduct an **independent verification** of each isolation point is determined by AA
- Before, the Extended Period Isolation (EPI) is linked to a work permit; an integrity check of the isolation is always required
- STT is not mandatory. STT required or not will be mentioned on IC



THANK YOU



Questions and Answers





WORK MANAGEMENT SYSTEM WMS

Temporary Defeat of HSEGES

ABU DHABI NATIONAL OIL COMPANY



AGENDA OF THE PACKAGE...



- Introduction
- Purpose
- Scope
- Key Roles
- Framework
- Process

ADNOC WMS – TEMPORARY DEFEAT OF HSEGES

2



TEMPORARY DEFEAT OF HSECES



Introduction

A Temporary Defeat or **bypass** occurs when a HSE Critical Equipment and System (HSECES) is **taken out of service** (isolated or shut down) while the equipment or facility being protected remains in service.

The use of the term Defeat should be taken to mean any of the following - to temporarily bypass, block out, isolate, override, inhibit, force, jumper, or **disable a safety / protection device** or an instrumented system or any parts thereof which would **interrupt the normal design functionality** of the equipment and system and its inherent ability to perform its **protective or safety functions**.



TEMPORARY DEFEAT OF HSECES



Purpose

- ❑ To provide **instruction** on the evaluation and mitigation of risk for all occurrences where HSE Critical Equipment & Systems (HSECES) are temporarily defeated
- ❑ To ensure that any such bypasses of HSECES are **authorized, applied, monitored** and **removed** in a correct and controlled manner
- ❑ Safe, standardized and robust system for temporarily defeating the HSECES required to ensure **risks** associated with exposure to hazardous energy sources are **ALARP**

TEMPORARY DEFEAT OF HSECES



Scope

- Applicability
- Contractor Responsibilities
- Implementation (Adherence to all other WMS Standards)
- Principles (WMS Elements)



TEMPORARY DEFEAT OF HSECES



Key Roles and Responsibilities

For proper harmonization of the Temporary Defeat process across ADNOC Group, all Businesses should adopt the common terminology for naming of roles and understanding of their responsibilities and accountabilities.

Success of Temporary Defeat process depends on the **competence** and **awareness** of the people carrying out the activities.



TEMPORARY DEFEAT OF HSECES



Key Roles and Responsibilities

- Defeat Approval Authority** (Approval / Validity / Extension)
[Selected from matrix based on **magnitude** of defeat]
- Defeat Authority (DA) – **Defeat Plan** (Risk Assessment)
- Defeat Performer (DP) – **Perform** (Implement / Restore)



TEMPORARY DEFEAT OF HSECES



HSECES shall only be defeated if it is necessary to **prevent a greater risk or to perform an activity** related to HSECES. Defeats of HSECES shall be allowed in the following situations and under strict control:

- For continued safe operations of plant and equipment
- For **testing** of the device
- For **maintenance** or **repair** of the device or connected equipment
- When its function may be adversely affected by certain work activities



TEMPORARY DEFEAT OF HSECES



- ❑ Only the **minimum number** of HSECES or systems that can be adequately monitored shall be taken out of service within the same zone and, as soon as the task is completed, the safety device or devices shall be placed back in service.
- ❑ Defeating the HSECES should be permitted for the **shortest duration possible**, are subject to risk assessment and only to be used when the facility is manned or remotely monitored.
- ❑ All other safeguarding instrumentation on equipment should be functional and **high priority given to any repairs** required to normalize a system.

ADNOC WMS – TEMPORARY DEFEAT OF HSECES

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TEMPORARY DEFEAT OF HSECES



Categorization Basis **Type**

Process Defeats

Any process-related bypass required / enacted by the **DCS operator** during **start-up / shut down** (unless specifically designed for start-up or shut-down) or controlled by OEM (Original Equipment Manufacturer) approved SOP, during **process upset** or in the course of handling **emergency** conditions.

Maintenance Defeats

Any bypass related to enabling the undertaking of **corrective** or **preventive** maintenance.

ADNOC WMS – TEMPORARY DEFEAT OF HSECES

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TEMPORARY DEFEAT OF HSECES



Categorization Basis **Duration**

1) Temporary Bypasses / Defeats

- Temporary Defeats or bypasses of HSECES are performed to allow certain work to proceed without causing unnecessary shutdown or interruption

2) Extended Period Defeats (EPD)

- Expected to remain in place **beyond the planned duration** of approval

3) Permanent Defeats

- As part of engineered changes to operating facilities (MOC)



TEMPORARY DEFEAT OF HSECES



HSECES **shall not be defeated** under below conditions:

- Risk is not reduced to ALARP level after consideration of implementing mitigation measures
- If suitable alternate protection cannot be provided
- If facility is in an upset condition (unstable condition or outside of defined normal operating windows such as when starting up, shutting down or running a controlled test)



TEMPORARY DEFEAT OF HSECEs

DURATION OF DEFEATS

- ❑ All Temporary Defeat shall indicate the **maximum time frame** allowed for temporary equipment safeguard bypasses to be in place.
- ❑ Every effort should be made to limit temporary safety critical equipment and system bypasses to **less than single shift**
- ❑ If the duration required might be more than **72 hours**, it will also trigger the process of **Downgraded Situations (DGS)** and the Group Companies shall ensure that appropriate controls are identified to mitigate the risks.



TEMPORARY DEFEAT OF HSECEs

Temp Defeat – 9 step Process



TEMPORARY DEFEAT OF HSECES



Integrated Work Activity Planning Process (IWAP)

- Identification of the safeguarding function
- Identifying any existing defeats in the same area / facility
- Identification of all equipment temporarily unprotected
- Method of defeat (Software / Hardware)
- Expected duration of defeats

After IWAP Team, **PA request for TDC** if required



TEMPORARY DEFEAT OF HSECES



Process Defeats:

The **DCS** (Distributed Control System) **Supervisor** is the **Certificate Applicant** for process defeat. This role will initiate the Certificate for such a process defeat, e.g. start-up/shutdown requirements, process upset requirements.

The **DCS Operator** acting in capacity of **Defeat Performer (DP)** ensures that associated certificates and **defeat registers** are always maintained up-to-date and that the records are informative and detailed.



TEMPORARY DEFEAT OF HSECES



Maintenance Defeats:

In such case the **Maintenance / Instrument / Automation Supervisors** shall act as the **Performing Authority (PA)** and **Certificate Applicant** for a defeat request and initiate the certificate as **Defeat Authority (DA)**. This shall apply to all maintenance activities such as Preventative Maintenance tasks and all jobs for which a system notification (work order) is generated.

The **Technician (DP)** shall be responsible to **implement** the defeat and shall liaise closely with the DCS operator. This role will sign off the **Defeat Register**



TEMPORARY DEFEAT OF HSECES



Hazard Identification and Mitigating Controls:

On the certificate, the **Defeat Authority (DA)** shall create **Defeat Plan**:

- Identify hazards, hazardous situations or specific events that may arise due to the defeated condition
- Evaluate the risk associated with these hazards; and
- Evaluate safeguards that reduce the risk to meet the conditions of **ALARP**
- Defeat plan should be approved by **AA**



TEMPORARY DEFEAT OF HSECEs



The **Defeat Approval Authority** shall be selected from matrix according to the impact of the defeat has over the plant i.e. the **magnitude of defeat**.

- ❑ If "Multiple shifts with normalization at shift end (< 12 hrs.)" is selected, a **single approval** shall be required in line with the Magnitude / Severity of the Defeat. The table in the next slide depicts the approval levels for various scenarios of temporary defeat.



TEMPORARY DEFEAT OF HSECEs



Approval Authority	< 12 hrs	12 to 72 hrs	> 72 hrs
Plant or SIL > 2	Manager Operations / Equivalent	SVP / VP Operations / Equivalent	SVP / VP Operations / Equivalent
Process Unit or SIL 2	Manager Operations / Equivalent	Manager Operations / Equivalent	SVP / VP Operations / Equivalent
Process Section or SIL 1	Team Leader / Section Leader Operations / Equivalent	Team Leader / Section Leader Operations / Equivalent	VP Operations / Equivalent
Individual Equipment	Area Authority	Team Leader / Section Leader Operations / Equivalent	VP Operations / Equivalent

Individual Device:
Individual HSECEs Component

Small Section:
Multiple components but not a complete critical system

Large Section:
A complete critical system comprising of multiple components

The **AA** shall authorize all Temporary Defeats before implementation of defeats.



TEMPORARY DEFEAT OF HSECES



Applying Defeats

The Defeat Performer (DP) shall:

- Notify all relevant parties affected by the defeat when it is first executed
- Update **Defeat Register** and **Shift Handover log**

If the defeat is planned to be continued beyond shift change, the Defeat Performer (DP) shall inform the affected incoming parties and record the same in **shift handover log**



TEMPORARY DEFEAT OF HSECES



Sign-Off on Temporary Defeat Certificate

- The Defeat Performer (DP) defeating the HSECES shall **confirm execution** of the defeat by **signing** the Temporary Defeat Certificate. {Note: TDC completed}

AUTHORIZE PTW

- AA** shall authorize PTW making sure that TDC is attached to the work permit with appropriate approvals and documentation



TEMPORARY DEFEAT OF HSECES



DYNAMIC RISK ASSESSMENT

- ❑ Dynamic Risk Assessment is defined as the continuous process of identifying hazards and assessing risks arising due **changing circumstances** of an operational environment followed by taking action to eliminate or reduce risk.
- ❑ The controls set in place of defeated HSECES and plant conditions shall be **continually monitored** for ensuring safe execution of work.
- ❑ Monitoring requirements shall be followed as per the requirements of the **Defeat Risk Assessment** and Temporary Defeat Certificate (**TDC**).



TEMPORARY DEFEAT OF HSECES



If planned to extend beyond shift change:

- ❑ The incoming shift personnel (AA, PI & JP) shall record the details in their respective **shift handover logs** and notify other affected personnel on the new shift.
- ❑ If planned to re-instate the defeats during night shifts, the records shall be recorded in the respective **shift handover logs**.
- ❑ The **Area Authority (AA)** shall ensure that the **Temporary Defeat Certificate is valid** in accordance with the requested timeframe (**given by defeat approval authority**) and not expired.



TEMPORARY DEFEAT OF HSECES



Temporary Defeat Certificate (TDC) is no longer required:

- The work is complete under the associated permits or permit validity has expired
- Area Authority (AA) has taken the decision to cancel the associated permit
- Validity of the requested duration of TDC is complete.

If any of the **associated work permits** is formally **closed** by the AA, the Temporary Defeat Certificate (**TDC**) shall be **updated** with the details of the **closed permit**.



TEMPORARY DEFEAT OF HSECES



Returning HSECES back to service

- The request for **restoration** raised by **AA**
- HSECES shall be returned back to service by **DP**
- HSECES shall be tested for function (**If applicable**)
- Testing requirements shall be based on the type of safeguard (mechanical, electrical, etc.) **Testing results** shall be documented in the **Defeats Register**.
- AA will close TDC**



TEMPORARY DEFEAT OF HSECES



In cases where HSECES was defeated for working on other equipment, **then testing might not be applicable** for its re-statement as the HSECES was healthy and working prior to defeating.

Extended Period Defeats (EPD)

In case the planned duration of approval of defeat is expired and HSECES not returned to service, it shall be considered as Extended Period Defeat. If extension is required, **Defeat Approval Authority** decides whether a separate **Temporary Defeat Risk Assessment** is required or not and provides a separate validity and approval for the extension.



ADNOC WMS – TEMPORARY DEFEAT OF HSECES

TEMPORARY DEFEAT CERTIFICATE

SECTION 1 - CERTIFICATE APPLICATION

Type of Temporary Defeat		Exceeded Duration of Defeat	
Tag No.	Tag No.	Tag No.	Tag No.
Service Description/Location	MILEAGE of drive with last maintenance at date when it is used		

SECTION 2 - SIGNATURES OF THE CERTIFICATE APPLICANT

Name	Company	Empirement ID	Position	Date & Time	Sign

SECTION 3 - THE HAZARDS AND CONTROLS FOR TEMPORARY DEFEAT

Type of Defeat	Process	Maintenance	% of Associated Parts & Certifications	Part & Certification Type	Ref. Number	Status
Method of Defeat						
Downgraded Situation	Yes	No				
Remarks						

SECTION 4 - SIGNATURES OF ENDORSED AUTHORITY

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SECTION 5 - APPROVAL AUTHORIZATION

Category	Approval Authority	> 13 hrs	13 to 70 hrs	> 70 hrs

SECTION 6 - WORKING AUTHORIZATION

Name	Emp. No.	Date & Time	State	Emp. No.	Date & Time	State

SECTION 7 - TEMPORARY DEFEAT IMPLEMENTATION & REMOVAL

Name	Emp. No.	Date & Time	State	Name	Emp. No.	Date & Time	State

SECTION 8 - RISK ASSESSMENT FOR DEFAT

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SECTION 9 - SIGNATURES OF APPROVAL AUTHORITY

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ADNOC WMS – TEMPORARY DEFEAT OF HSECES

THANK YOU



Questions and Answers





WORK MANAGEMENT SYSTEM WMS

Simultaneous Operations (SIMOPS)

ABU DHABI NATIONAL OIL COMPANY

AGENDA OF THE PACKAGE...



Introduction

Purpose

Scope

Key Roles

Framework

Process

SIMOPS



Introduction

Simultaneous Operations (SIMOPS) are activities that take place at the **same time** and meet the following conditions:

- Activities that are located in the **same area**; and
- Activities that could **affect the safe performance of the another activity** (e.g. Breaking Containment and Hot Work)

Wherever possible, operations should be managed to **avoid situations** where simultaneous operations (SIMOPS) could arise, however at times, it may be necessary to perform operations simultaneously.

SIMOPS



Purpose

To provide a **framework** to identify **potential hazards and threats** associated with **concurrent operations**. The application of SIMOPS is intended to provide:

- A basis for **safe performance** of simultaneous operations
- A common approach to **routine** SIMOPS
- A consistent approach to the planning and execution of **non-routine** SIMOPS
- Identification of combinations of work activities that **cannot be performed** at the same time

SIMOPS



Scope

- Applicability
- Contractor Responsibilities
- Application (Adherence with all other WMS Standards)
- Principles (WMS Elements)

SIMOPS



Key Roles and Responsibilities

- For proper harmonization of the SIMOPS process across ADNOC Group, all Businesses should adopt the common terminology for naming of roles and understanding of their responsibilities and accountabilities.
- Success of SIMOPS process depends on the **competence** and **awareness** of the people carrying out the activities.

SIMOPS



SIMOPS Coordinator (**Single point coordination**)

- ❑ The SC role is a **temporary role** where the person is appointed for the duration of the concurrent operations. SC shall be a competent person **appointed by the Asset Owner** in control of the worksite and should be at Supervisory or Management level in a facility with detailed knowledge of the asset and where two functions or business groups are involved.

SIMOPS



Framework

Routine SIMOPS (**Covered in SIMOP Matrix**)

Routine Simultaneous operations occur where all the activities involved have been **previously identified** and the controls documented and their execution covered by existing, approved written instructions or **procedures** (or Procedure Checklists).

SIMOPS



Non-Routine SIMOPS (Not Covered in SIMOP Matrix)

Non-routine or 'occasional' SIMOPS can occur in the case of maintenance and/or modification works within the units of an existing facility such as a project. Following shall be required:

- Overview for performing the planned operation & purpose
- Identifying other activities planned during the same period
- Identifying other limitations or restrictions
- Identifying circumstances (for example, weather)
- Undertaking a **Formal Risk Assessment** with appropriate teams of operational, engineering and specialists (where required)

SIMOPS



Types of SIMOPS / MOPO Matrix

Separate matrices may be constructed for the below several categories of concurrent activities deemed as SIMOPS:

- Operations specific
- Adverse Weather & Environment specific
- HSECES Impairment specific
- Equipment Unavailability

It is at the **discretion of Group Company** to ascertain whether to use a single SIMOPS matrix which combines all the above matrices above or have set of individuals' matrices.

SIMOPS



SIMOPS Restrictions Tables

- List the activity restrictions for managing conflicts
- Act as a supplement to the matrix
- Reference and guidance related to that particular combination of activities to be conducted.
- Provides structured guidance

All "**Restricted**" SIMOPS activities should have an appropriate **JSA** conducted and attached to **Deviation Request Form** for approval. (**AO will give Approval**)

SIMOPS



SIMOPS Matrix Decision Tree

- Provides several occasions in the PTW process to ascertain **SIMOPS**.
- Facilitates the planning/ scheduling SIMOPS activities

Three basic categories are identified in a SIMOPS Matrix or MOPO:

- Allowed combinations of operations (**Green**)
- Restricted combinations with appropriate controls (**Yellow**)
- Prohibited combinations (**Red**)

SIMOPS



Process

- ❑ **Identification phase:** Identify SIMOPS and undertake Job Safety Analysis (JSA)
- ❑ **Preparation phase:** Identify & Approve Controls and form plan including resources for management of SIMOPS risks to ALARP
- ❑ **Execution phase:** Implement SIMOPS controls through integrated coordination of operations
- ❑ **Review phase:** After Action Review (AAR) of SIMOPS management and update of documentation including SIMOPS matrices

PROCESS



Identification Phase

The **Integrated Work Activity Planning** process:

- ❑ Involves identifying the hazards arising as a result of SIMOPS
- ❑ Evaluates the consequence of failures
- ❑ **Identifies:**
 - ❑ Whether proposed concurrent operations or activities fall under a classification of **Routine** or **Non-Routine**
 - ❑ Where a combination is **not permitted** or **restricted**

SIMOPS



Preparation Phase

SIMOPS Management Plan (SC)

Preparation of a SIMOPS Management Plan that shall include the following elements:

- Description of the operation (Requirements, Tools, etc.)
- Identification of additional supervision and support
- Allocation of responsibilities
- Job Safety Analysis and MOPO and Restrictions Table**

SIMOPS



Preparation Phase

Site Coordination Roles, Organization and Communication

- Any activity, whether essential or not, should be stopped when the level of risk exceeds the maximum acceptable level or when the operations are disrupted
- An authorized and competent appointed SC should have the experience to make such judgement
- During routine operations, the AA shall be the SC**

SIMOPS



Preparation Phase

Other Pre-Execution Preparation Activities

- A **site survey** prior to commencing SIMOPS by the appointed SC and involved parties
- Review of requirements for shutting down work in affected areas
- Revisions or modifications may be recommended to the SIMOPS management plan
- Applicable **Incident Management drills** should be conducted prior to commencing SIMOPS operations

SIMOPS



Execution Phase

On-site Pre-Start Checks

SIMOPS Coordinator (SC) shall have a SIMOPS document containing:

- The applicable Matrix of Permitted Operations (MOPO)
- Common Emergency Response Plan (ERP)
- Asset equipment or Activity spacing requirements
- Site layout diagram with Muster Points
- Details of SIMOPS Impact Contours
- Communication requirements

SIMOPS



Execution Phase

Prior to starting SIMOPS, the SC shall:

- Confirm that all controls are effectively implemented**
- Ensure Dynamic Risk Assessment is followed
- Hold a **safety discussion** and briefing to communicate any safety and emergency response measures to the personnel involved in the operation

SIMOPS



Execution Phase

Site safety meetings for SIMOPS exercise shall be arranged in advance of the start-up of SIMOPS activities covering:

- Scope, purpose & objectives
- Review of operational details & Communication lines
- Procedures, instructions & responsibilities
- Emergency preparedness and contingency plans
- Utilization of safety equipment and protective clothing
- Management of the operations

SIMOPS



SIMOPS Coordinator shall:

- Review, approve and sign all paper or electronic permits (in SIMOPS instances only) as the **Permit Endorser (PE)** for **Non-Routine SIMOPS**
- Maintain rigorous oversight of all SIMOPS work activities
- Ensure that all workers have received information regarding the current SIMOPS activities
- Ensure Emergency Response Plans are in place and understood

SIMOPS



SIMOPS Coordinator shall:

Further requirement that should be **on-site** as required:

- Signage at the site entrance that includes the **name** of the SC, contact **phone number** and **location**
- A Permit Board or equivalent system
- Controlled access system for the site applicable for level of activity and risk

SIMOPS



During Execution

SIMOPS Coordinator (SC) shall:

- Facilitate a daily SIMOPS Planning Meeting**
- Ensure conflicts due to scope, complexity and proximity have been adequately addressed before any work commences
- Ensure that all **hand over accountabilities** between SIMOPS parties are documented
- Ensure that all communication lines and means are, at all times, tested and effective

SIMOPS



During Execution

- Proper communication** must be established among all personnel involved in SIMOPS involving such means as intercom or radios.

Further, SC shall ensure:

- Personnel manifest or roster is available and up-to date
- Communicate with responsible personnel
- Document and report on any safety incidents including near miss incidents related to a SIMOPS activity

SIMOPS



Post Completion Phase (Review Phase)

Upon completion of the operations involving SIMOPS, it is recommended to conduct an **After Action Review (AAR)** which shall be initiated by the **Asset Owner Rep** to:

- Review any incidents and near misses
- Identify lessons to be learnt for safer execution
- Identify improvements to the effectiveness of SIMOPS Process

ADDITIONAL NOTES



- SIMOPS/MOPO Matrix is **not a stand-alone document**. The use of Restriction Tables is to **put required controls** required in place
- Each GC shall identify the **Routine SIMOPS applicable** within their respective business and document the same via use of **SIMOPS matrix** or MOPO matrix and Restrictions Table.
The following requirements shall be applicable:
 - The MOPO Matrix / Restriction Table shall be approved by Asset Owner;
 - The MOPO Matrix / Restriction Table shall be reviewed and approved in case of any changes / modifications; and
 - The approved MOPO Matrix / Restriction Table shall be readily available in the Permit Control Facility /Control Room or other designated area.”

THANK YOU



Questions and Answers

