Preamble

Terms & Definitions

Context

Leadership

Planning

Support

Operation

Performance Evaluation

Improvement

Reference Standards

ISO14001:2015 & ISO45001:2016

Clause 10.1: Opportunities For Continual Improvement; Nonconformity and Corrective Action.
Clause 10.2: Continual Improvement.
Clause 8.2: Management of Change.

PSM (22 Elements) Model

Incident Investigation and Communication: The purpose of this element is to document the process for investigating incidents that occur onsite or off-site in a way that promotes thorough and efficient investigation in a timely manner; uniform, accurate, clear, and concise documentation and reporting; identifies and implements recommendations to prevent incident recurrence; involves the right people to get the information; ensures a clear understanding of key factors and key learnings; participating personnel obtain a positive learning experience.

Management of Change - Facility and Technology: Processing plants are designed according to standard engineering practices. The changes to the documented process safety information (e.g. hazard of materials, equipment design basis and process design basis), even if subtle or temporary, can lead to catastrophic events. Therefore, these changes must be managed in such a manner that safety, the integrity of the plant and the environment are not compromised. All changes must receive appropriate review and authorization before being implemented.

Management of Change - Personnel: Safe operations of facilities require an effective personnel change management system as people are the essential ingredient in "Process Safety Management" and play the most important role in its implementation and day to day compliance. It is essential that personnel changes at all levels are controlled according to a pre-established criteria so that minimum levels of experience and knowledge are maintained at the site.

Pre Startup Safety Review(PSSR): PSSR provides a final checkpoint for new and modified equipment and facilities to confirm that all appropriate elements of Process Safety Management have been addressed satisfactorily and the equipment / facility is safe to start-up. It is mainly intended to make sure that alterations / additions to the process or system do not create hazards to personnel at the site, surrounding facilities, community and environment by inadequate, incomplete, or unauthorized design or installation.

This Section's Objectives

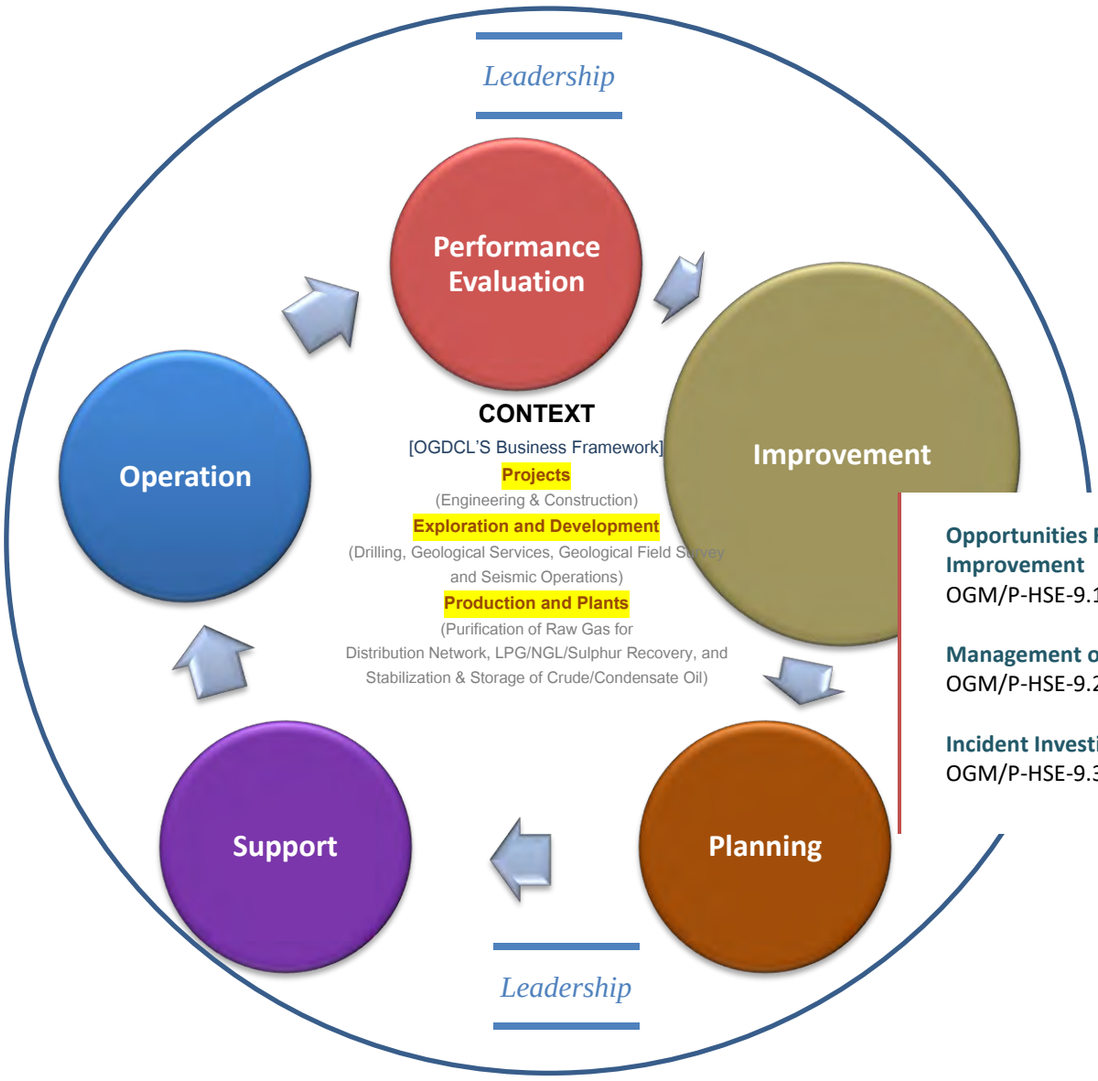
- Take action to improve HSE System and achieve intended outcomes.
- Investigate an incident for its root cause determination to avoid recurrence.
- Control nonconformities and take appropriate corrective & preventive actions.
- Enhance the suitability, adequacy, and effectiveness of HSE System.

Associated Documents

- Preliminary Incident Report
- CPR Form
- CPR Log / Register
- Register of Occupational Illnesses and Injuries
- Employee's Workplace Exposure & Health (WEH) Record
- Engineering Change Request (ECR)

Applicable Documents

- Specimen Pre-Startup Safety Review (PSSR) Checklist


Leadership
Performance Evaluation
Improvement
Operation
CONTEXT
[OGDCL'S Business Framework]
Projects
(Engineering & Construction)
Exploration and Development
(Drilling, Geological Services, Geological Field Survey and Seismic Operations)
Production and Plants
(Purification of Raw Gas for Distribution Network, LPG/NGL/Sulphur Recovery, and Stabilization & Storage of Crude/Condensate Oil)
Support
Planning
Leadership
Opportunities For Continual Improvement
OGM/P-HSE-9.1
Management of Change
OGM/P-HSE-9.2
Incident Investigation
OGM/P-HSE-9.3

9.1 Opportunities For Continual Improvement

OGM/P-HSE-9.1(9) Revision Number 9

Original Issue: June 25, 2007
This Issue: November 21, 2025

Updated By:
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Manager HSEQ-ERM/ CRO, OGDCL

Reviewed By:
Babar Iftikhar
General Manager HSEQ-Security, OGDCL

Approved By:
Ahmed Hayat Lak
Managing Director, OGDCL

Change/ Revision Log

#	Description of Change
1	Modified: *New Logo & Tag Line*

Associated Documents Approval & Issue

Related Document/ Record	Initiated by	Reviewed by	Checked/ Verified / Approved by
OGF – HSE – 047 CPR	Any Employee	Location HSE Rep.	Location IC
OGF – HSE – 048 CPR Log	Location HSE Rep.	Location HSE IC	Location IC/ Location HSE IC

9.1.1 Mechanism for Identifying Opportunities For Continual Improvement

- Workforce members at all levels shall be encouraged to identify opportunities for continual improvements to improve the reliability of operations, processes, services with respect to HSE management system.
- Following activities shall provide mechanism for identifying opportunities for continual improvement, but not limited to:
  a) Observation visits / walkthroughs / STOP Card Logs (unsafe conditions and unsafe behaviors)
  b) Performance trends against the objectives and targets
  c) Identification of a system deviation or failure that may result in non-fulfillment of HSE related contractual, legal or regulatory requirement
  d) HSE audit findings
  e) HSE performance reports (KPIs analysis)
  f) Inspection and test records (esp. when performance of personal protective, safety critical and emergency equipment falls below desirable level)
  g) Repetitive operational failures or near hits of similar nature that have tendency to cause incident
  h) HSE related complaints / feedback from customers
  i) HSE MRC meetings

9.1.2 Corrective and Preventive Actions

- Corrective and preventive actions shall be taken to eliminate the causes of non-conformities to prevent their recurrence and to eliminate any potential causes of non-conformity using CPR template as follows:
  - Location HSE IC shall review and classify the reported-issue, sort out Primary Surface Cause and discusses the nature of problem and corrective & preventive action with the concerned Sectional IC
  - HSE Section shall enter CPR description into CPR Log
  - Concerned Sectional IC shall determine the Contributing Surface Cause(s) and Design Root Cause after thorough investigation in consultation with all the stakeholders
  - HSEQ Section in consultation with the relevant ICs shall formulate the Problem Solving Team and get endorsement by Location IC
  - HSEQ Section shall forward copies of CPR to Problem Solving Team due to whom the issue has fundamentally arisen or who are responsible to rectify
  - Problem Solving Team shall:
    - Propose actions in the presence of HSEQ Rep.
    - Agree on the decision regarding the final action(s) to be taken, fully endorsed by Location IC
    - Allocate Completion-Time to correct / prevent the issue (to be concurred in the presence of Location IC),
    - Take appropriate action(s), and
    - Timely intimate HSE Section of the actions taken.

    Note: Concerned IC could also be the part of Problem Solving Team.
  - When a corrective and preventive action is decided upon, it may be implemented on trial basis and the results shall be closely monitored. Further measures or changes shall be made where required during the trial period until satisfactory results are attained.
  - The corrective and preventive measures where deem fit shall be made by incorporating changes in the HSE system in the relevant documents such as drawings, specifications, operating procedures, work instructions and / or templates.
  - Where the corrective and preventive action identifies new or changed hazards or need for new or changed controls, the proposed actions shall be implemented ensuring that the risk(s) reassessed accordingly.
  - On, or immediately after, the due date of implementation of a corrective and preventive action, HSE Rep. shall follow up to determine if the corrective and preventive action has been implemented and whether it is

effective.

- When there is objective evidence that the corrective and preventive action is effective, CPR shall be closed out. If more work is needed to fully implement the action, a new follow up date shall be agreed upon.
- HSE Section shall enter the final status of the CPR into the CPR Log and maintain the original CPR form as record.

OGF - HSE - 047(3)

Oil & Gas Development Company Limited
Corrective and Preventive Action Request (CPR)

CPR Number: _____

☐ Initiator → ☐ HSEQ → ☐ Concerned Section → ☐ HSEQ → ☐ Problem Solving Team Leader → ☐ HSEQ

PART I: General

Date: _____
Time: _____
Activity: _____
Area: _____
Auditee / Concerned I/C: _____
Reported / Requested By: _____

Issue	Reference
☐ Procedure	_____
☐ Process	_____
☐ Product	_____

PART II: Nonconformance / Deviation / Opportunity For Improvement:

Description:

_____
_____
_____
_____
_____
_____
_____

Signature: _____
Reported / Requested By

(Impact-Value in relevant Units)	Asset Damage	Environment Damage	Human Damage		Production Loss	Reputation Damage
			Injury(ies)	Fatality(ies)		
☐ Actual/Incurring:						
☐ Could have resulted in:						

To be specified/verified by I/C HSEQ.

RECEIPT
Auditor/ MR / I/C HSEQ

Classification

Major	Minor	Obsr.

Incident	Hazard	Near Hit

Primary Surface Cause

Unsafe Condition	Unsafe Behavior	Both

_____
Signature

Date: _____

Time: _____

PART III: *Root Cause: *(Attach Analysis / Investigation Report, if necessary)*

Contributing Surface Cause(s):

Unsafe Condition	Unsafe Act/Behavior
☐ Improper HSE Equipment	☐ Operating without Authority
☐ Improper HSE Documentation	☐ Horseplay
☐ Improper / Incomplete Resources	☐ Overriding Safety Devices
☐ Unsafe Design or Construction	☐ Disobeying Instructions / Not Following SOP
☐ Poor / Inadequate Operating Conditions	☐ Wrong Orders of Supervisor
☐ Inadequate Warning System	☐ Lack of Skill / Knowledge of Worker(s)
☐ Too Much Occupied/Over-worked/Fatigue	☐ Unsafe Act of Outsider(s)
☐ Poor Housekeeping	☐ Unsafe Act of Fellow-Worker(s)
☐ Bad Environmental Conditions	☐ Working in Bad Environmental Conditions
☐ Any Other(s) _____	☐ Any Other(s) _____

Design Root Cause(s):

Unsafe Condition [Operations]	Unsafe Act/Behavior [Management]
☐ NO Hazards Identification & Risk Assessment [HIRA]	☐ Hazards NOT Communicated / NO HazCom System
☐ INADEQUATE Hazards Identification & Risk Assessment [HIRA]	☐ Provided INAPPROPRIATE Tool(s)/Equipment(s)
☐ NO SOP/Work Instruction(s)	☐ Provided INAPPROPRIATE Chemical(s)/Material(s)
☐ FLAWED SOP/Work Instruction(s)	☐ Provided INAPPROPRIATE Control(s)/Warning System
☐ INADEQUATE SOP/Work Instruction(s)	☐ Provided INADEQUATE Job Description(s)/JARD(s)
☐ INCONSISTENT compliance of Operational Controls	☐ INADEQUATE Supervision or Monitoring
☐ NO Inspection/ Maintenance/Calibration Plan(s)	☐ INADEQUATE Internal Audits & Follow-ups
☐ FLAWED Inspection/ Maintenance/Calibration Plan(s)	☐ INADEQUATE Management Review Meetings
☐ INADEQUATE Inspection / Maintenance/Calibration Plan(s)	☐ SOP/Work Instruction(s) NOT Enforced
☐ UNTRAINED or UNSKILLED Worker/Operator	☐ Inspection/ Maintenance/Calibration Plan(s) NOT Enforced
☐ NO Objective and Management Program	☐ INADEQUATE Training Program
☐ INADEQUATE Objective and Management Program	☐ Training Effectiveness NOT Measured
☐ Other _____	☐ INCONSISTENT Trainings / Refresher Courses
	☐ Objective and Management Program NOT Enforced
	☐ Other _____

RECEIPT
Auditee/ Concerned I/C

_____
Signature

Date: _____

Time: _____

RECEIPT
Auditor/ MR / I/C HSEQ

†Problem Solving Team

1. _____
2. _____
3. _____

_____
Signature

Date: _____

Time: _____

†ENDORSEMENT
Location In-Charge

_____
Signature

Date: _____

Time: _____

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual — Page 1 of 3

Oil & Gas Development Company Limited

OGF - HSE - 047(3)

Corrective and Preventive Action Request (CPR)

CPR Number: _____

PART IV: Proposed Corrective / Preventive Action:

Proposed Solution(s):

_____

††Agreement Decision on the Solution:

_____

Tentative Completion Date / Time for taking corrective/preventive action(s):

To be concurred in the presence of Location In-Charge.

Corrective / Preventive Action(s) Taken:

Focused Area(s)	Description
Hazards Identification & Risk Assessment [HIRA]; Objective and Management Programs	
Engineering Controls [Design of a workplace, Automation, Material handling devices, Use of technology for reducing emergency situations/ waste/adverse health, etc.]	
Administrative Controls [SOP, Work Instruction(s), HazCom, Purchasing Criterion, Trainings, etc.]	
Inspection/ Maintenance/Calibration Plan(s)	
Supervision / Surveillance Audits / Management Review Meetings	
Other(s)	

RECEIPT
Problem Solving Team Leader

_____
Signature

Date: _____

Time: _____

††**ENDORSEMENT**
Location In-Charge

_____
Signature

Date: _____

Time: _____

COMPLETION
Problem Solving Team Leader

_____
Signature

Date: _____

Time: _____

PART V: Results of Action Taken:

(Effectiveness of action taken especially the preventive measures to avoid recurrence)

_____

Follow-up *Date / Time:* _____

RECEIPT
Auditor/ MR / I/C HSEQ

_____
Signature

Date: _____

Time: _____

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

Page 2 of 3

OGF - HSE - 047(3)

Oil & Gas Development Company Limited

Corrective and Preventive Action Request (CPR)

CPR Number: _____

PART VI: Follow up Audit / Close Out details: *(Implementation and effectiveness of action taken)*

#	Follow-ups Date / Time	Status	Description	I/C HSEQ Signature

Actual Time Taken *on rectification:* _____

* *Root-cause describing 'why not-agree' with the reported issue is also required to be mentioned.*

Instructions

1. Requesting / reporting person shall report the issue through CPR to *HSEQ*.
2. *HSEQ* shall classify the issue, assign primary surface cause, determine the impact-value in relevant units and forward the reported issue to the **Concerned I/C** (in whose area issue apparently took place).
3. **Concerned I/C** shall:
   - Find the Contributing Surface Cause(s) and Design Root Cause after doing thorough investigation in consultation with all the stakeholders, and
   - Inform *HSEQ*.
4. *HSEQ* shall formulate the Problem Solving Team in consultation with the relevant In-Charges and get endorsement by Location management.
5. *HSEQ* shall forward copies of CPR to **Problem Solving Team** due to whom the issue has fundamentally arisen or who are responsible to rectify.
6. **Problem Solving Team** shall:
   - Propose actions in the presence of *HSEQ*
   - Agree on the decision regarding the final action(s) to be taken (endorsed by Location management)
   - Allot Completion-Time to correct / prevent the issue (to be concurred in the presence of Location In-Charge),
   - Take appropriate action(s), and
   - Timely intimate *HSEQ* of the actions taken.
6. *HSEQ* on the promised date shall verify the corrective / preventive action and set follow-up date and time.
7. *HSEQ* shall follow-up, close CPR and note down actual / total time taken on rectification.

Note: **Concerned I/C** could also be the part of **Problem Solving Team**.

OGF – HSE – 048(01)

Oil & Gas Development Company Limited

Corrective & Preventive Action [CPR] Log

Location: _____ **Month** _____ **Year** _____

CPR #	Initiation		Description	Classific-ation	Root Cause		Corrective / Preventive Action			Close Out	
	By	Date/ Time			By	Date / Time	By	Tentative Date / Time	Actual Completion Date & Time	Number of Follow-ups	Total Time Taken on Rectification

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

Page 1 of 1

9.2 Management of Change (MoC)

OGM/P-HSE-9.2(9) Revision Number 9

Original Issue: June 25, 2007
This Issue: November 21, 2025

Updated By:
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Reviewed By:
Babar Iftikhar
General Manager HSEQ-Security, OGDCL

Approved By:
Ahmed Hayat Lak
Managing Director, OGDCL

Change/ Revision Log

#	Description of Change
1	Modified: *New Logo & Tag Line*

Associated Documents Approval & Issue

Related Document/ Record	Initiated by	Reviewed by	Checked/ Verified / Approved by
OGF – HSE – 051 Engineering Control Request	Any Employee	Location IC, Sectional IC, Location HSE Rep.	Respective HOD, Area Manager, Location IC

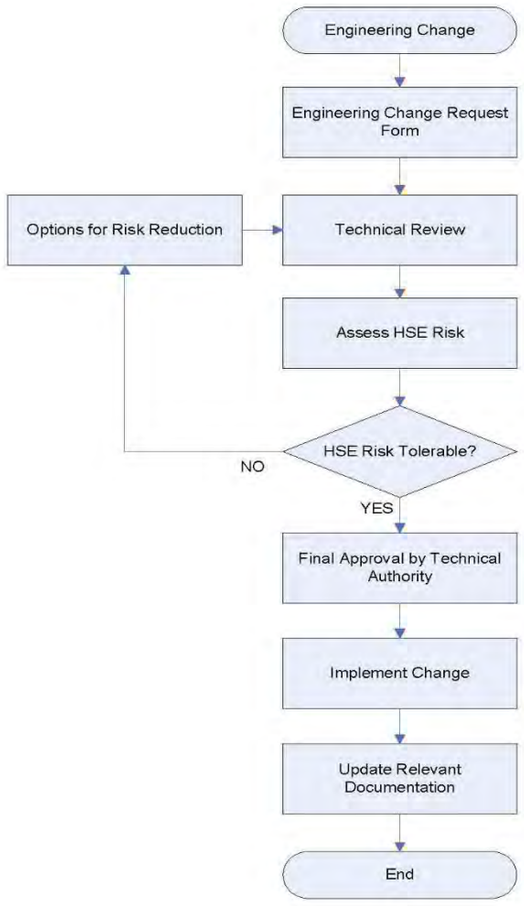
9.2.1 General

- Management of Change, or MoC, is a practice used to ensure that safety, health and environmental risks are controlled when a company makes changes in their facilities and operations; When decisions and changes are made rapidly, safety and health risks can increase resulting in disasters such as deflagrations and/or explosions.
- There are mainly two types of MoCs at OGDCL:
  - Management of Change (MoC) – Facility and Technology
  - Management of Change (MoC) – Personnel

9.2.1.1 Management of Change (MoC) – Facility and Technology

- A MoC shall be used to ensure that all changes to operating processes are properly reviewed and any hazards introduced by the change are identified, analyzed, and controlled before start-up and/or before resuming the production process.
- Engineering Change are any modifications that differ from the current facilities design basis.
- It applies to facilities in operation and in the development phase. This procedure mandates that OGDCL management shall control the change regarding any modification whether temporary or permanent, to plant and equipment, process materials, operating procedure, operating conditions which is outside the normal methods of operation and maintenance.
- Few examples of modifications are as follows:
  - Any change in the approved method of operation (as defined in the SOP).
  - A repair to or replacement of an existing item of equipment or component which represents a departure from the existing engineering specification.
  - A change in the means of support of plant items, pipe-work or fittings or a change to a structure, which could affect its load bearing capabilities.
  - A change, irrespective of its magnitude, that affects the engineering line diagram.
  - A change in the material of construction, size or shape of any component which is in contact with process fluid or utility stream or which could affect the flow rate, temperature, pressure or composition of a process fluid or utility stream.
  - A change to the setting of an alarm or trip irrespective of any maintenance job requirement.
  - A change to the setting or capacity of a relief stream or device.
  - A change to a control system including the overriding of control action in the field by forcing actuated valves to a particular position.
  - A change to any hardware or software trip or interlock system, including controllers/ indicators, etc. This includes any override or defeat of a trip or interlock system unless the override/defeat is an integral part of the system design e.g. a key override or purpose-designed faceplate for software overrides/defeats.
  - Introduction of any new substance into any part of the process or plant equipment including any change in formulation, change in ratio of ingredients or change in source of supply.
  - An alteration to the flow-rate, temperature, pressure or composition of a process fluid or utility stream outside the defined operating parameters.
  - Any change or alteration in layout of an operating field building or building services.
  - Any change in the approved project/ design specification during field implementation
  - Any change in Operating, maintenance, inspection and testing procedures
  - Change in duty or operation from original design intent even though physical changes are not required, e.g. load increase
  - Introduction of new methods, materials and/ or chemicals

- Whereas the following type of activities shall "not" constitute modification:
  - Replacement of similar kind of piping, mechanical parts, instruments or electrical components that are identical to the existing ones.
  - Change in operating parameters within safe operating limits as specified in the design conditions or the operating manuals.
  - Routine repairs and services carried out by maintenance or other groups.
  - Modifications that are adequately covered by existing control procedures or do not affect the integrity of the facilities are EXCLUDED from the scope of this standard. Typically, these would be as follows: -
    - Changes to domestic and office equipment, and consumables
    - Temporary isolations for servicing, examination and testing of equipment within the planned maintenance program
    - Routine servicing for lube oil, filters, etc.
    - Like-for-like replacements, e.g. gas detector, floor grating, loose lifting gear
    - Temporary changes covered by permit to work or standing order procedures.



9.2.1.1.1 Engineering Change Request Lifecycle

- All Engineering Change Request shall be raised via Engineering Change Request Form. Engineering Change Request can be raised by any OGDCL employee when any change as per above section is required.
- An ECR Committee shall be formulated at each location comprising minimum of Location IC, Sectional ICs and Location HSE Representative. The committee shall conduct Monthly ECR Review to review change proposals and minutes of meetings shall be documented. The meeting shall:
  - Review all Engineering Change Requests (ECR) and give a priority status.
  - Assign technical authority (role) for each ECR for further assessment. Technical authority (role) shall be an employee (Location or Head office) who is deemed competent to analyze and conduct Hazard / Risk Analysis of Engineering Change Request.
  - Review ECR priorities where questions exist.
  - Review all other ECR priorities in view of the current status and backlog.
  - Review overall ECR progress and agree measures to address any resultant issues.
  - Recommend ECR's for cancellation shall be identified in the meeting minutes and the originator shall be advised. The reason for cancellation will be documented.

Note:- In special circumstances, an ECR may need to be progressed very rapidly. In this instance, Location IC shall convene Emergency ECR meeting.

- The assigned person(s) shall technically review the ECR and shall:
  - Comment upon the requirement for the change
  - Evaluate hazards associated with the change (e.g. increased noise levels)
  - Assess risks (safety, environmental, business)
  - Assess maintenance and operational requirements
  - Consider whether a better solution should be implemented
  - Estimate the pre-implementation costs i.e. design costs
  - Estimate the total ECR costs i.e. Design, Materials, Installation (±25%)
  - Conduct and document Risk Assessment for the planned change and provide any steps /action necessary before proceeding with the Job.
- Approval of Modification Job (change) shall be taken from the concerned competent authority(ies) based on various scenarios as given below:

MoC Scenarios	Executive Director	General Manager	Area Manager	Location IC	Sectional IC
Change to be affecting operations	Complete shutdown of operations, affecting production	Partial shutdown of operations, affecting production	Complete shutdown of sub-unit, not affecting production	Partial shutdown of sub-unit, not affecting production	No shutdown
Change which would require regulatory/ 3rd party approvals or intimation	approved project/ design is affected	new sub-unit is required	safety critical equipment is affected	permissible / allowance operating limits are violated	N/A
Costing	As per delegation of financial powers				
Change to be made after an emergency	Catastrophic (5)	Critical (4)	Major (3)	Marginal (2)	Negligible (1)
Change to be affecting risk rating(afterwards)	Low/ Medium to High/ Intolerable	Low to Medium	No effect		

- The ECR shall be considered as complete/ closed based on following:
  - All work detailed in ECR is completed
  - *Pre-Startup Safety Review (PSSR) to protect personnel and processes by conducting a thorough review before operating the new, repaired or updated/ modified units. The pre-startup safety review shall confirm that prior to the introduction of hazards to a process, construction and equipment is in accordance with design specifications and safety, operating, maintenance, and emergency procedures are in place and are adequate. (Specimen PSSR Checklist is attached at Appendix A)*
  - Satisfactory commissioning and testing has been conducted
  - Process safety information has been updated and personnel have been trained
  - Completion of all as-built, revision and updating of all affected drawings, manuals and procedures
  - Issue to field of all affected drawings, manuals and procedures
  - Development and approval of any new procedures required as a consequence of the engineering change
  - Confirmation of receipt from site that all affected drawings, manuals and procedures have been received and filed (copies of transmittals showing field acknowledgement to be placed in ECR file); Filing into ECR file copies of all affected drawings, manuals and procedures
  - Purchase of spare parts
  - Close out of all statutory requirements
  - ECR form is completed and signed off.
- Engineering changes may lead to revision and formal approval of few other documents. These include but are not limited to:
  - Risk register
  - Operating, maintenance, inspection, test procedures and work instructions
  - Emergency response procedures/notices
  - Layouts, process flow diagrams, P&IDs, isometrics and utility line diagrams
  - Instrument loop diagrams, cause and effect diagrams, piping isometrics
  - Safety and lifesaving appliance location diagrams
  - QA / QC plans

9.2.1.2 Management of Change (MoC) – Personnel

- There may be other organizational changes, such as changes resulting from mergers, acquisitions, reorganizations, personnel changes (including changes in staffing levels, workforce experience, contracting out), and / or policy changes such as budget cutting.
- Due to these contemplated changes which may have impacts on the safety & health of workforce members & assets as existing operating procedures/ protocols may not be complied upon in toto and the timeliness or frequency of budgetary approvals, trainings, tests, inspections, repairs, or replacements of equipment could not be properly followed.
- In such scenario, a special MOC/ risk assessment shall be carried out by concerned Department to ensure that anticipated changes are managed

and implemented in a manner that assures the safety & health of workforce members, continued safe operations and integrity of the processes under normal production & emergency upset conditions by modifying the existing operating procedures/ protocols and controls.

- Record of such these special MOC/ risk assessment shall be maintained by concerned Department with a copy to HSEQ Department.

9.2.1.3 Mandatory Requirement For MoC

- Persons involved in Technical review should be experienced in the area that is being assessed.
- The cost of change will not necessarily be proportional to the risk impact. In all cases an HSE risk screen shall be used to determine the resources required to fully evaluate the impact of the change. Ranking of changes using financial criteria shall not be done.
- The cumulative effects of change shall be considered. For example a small change, when looked at in isolation, may be rated a relatively low and insignificant risk. However, when combined with other changes the overall risk profile may be intolerable.
- HSE Department/ Section shall be consulted to ensure adequate assessment of the HSE risks.
- Resources shall be made available to ensure the change is implemented as planned.
- Where new skills, technology or greater responsibilities are required, then training and development programs shall be included for persons who may be impacted by the change.
- Communication of change during all phases of the change from inception through to completion is obligatory. Special emphasis shall be placed on using feedback during the communication process in order that the persons impacted by the change have the opportunity to suggest improved methods of implementing the change. This will have the benefit of encouraging ownership of the change, overcome inherent resistance to change, and increasing the probability that the change will be successfully implemented.
- Close out of completed changes shall always include a full update of the relevant documentation in hard copy and electronic format, as appropriate.

Oil & Gas Development Company Limited

OGF – HSE – 051(02)

Location/ Site:_____

ENGINEERING CHANGE REQUEST

1. Initiate Change (To Be Filled By Initiator)					
Serial Number/ Revision	Title				
MoC initiated by:	Name/ Department		Date		
1.1 Description of the Change					
Current situation/ condition:					
Target change (situation/ condition, motivation):					
Reasons for change:					
Expected savings:					
System/ location/ organization which is affected (benefitted) by the change:					
1.2 Is it a temporary change?	◉ No ○ Yes		**Temporary change valid until:**	Date	
1.3 Impact of the Change					
Would the change impact:	process equipment?	○ Yes ◉ No	organization?	○ Yes ◉ No	
	process systems?	○ Yes ◉ No	operability?	○ Yes ◉ No	
	systems interfaces?	○ Yes ◉ No	operations environment?	○ Yes ◉ No	
	other?				
Description of the Impact of the Change:					
1.4 Will the change modify the risks with respect to: ⇧: increase, ⇩: decrease	Human	○ ⇧ ◉ ⇔ ○ ⇩	Environment	○ ⇧ ◉ ⇔ ○ ⇩	
	Reputation	○ ⇧ ◉ ⇔ ○ ⇩	Finance (asset & production)	○ ⇧ ◉ ⇔ ○ ⇩	

2. Change Review (To be Filled by Change Review Committee)

2.1 Assign Technical Authority

Role	Function	Name/ Department	Signature	Date
Team Lead				
Team Members				
QC Team:				
Other Consulted:				

3. HSE Hazard / Risk Analysis (To be Filled by Technical Authority)

3.1 Risk Assessment prior to start-up/ go-live

Description of Jobs and Activities	Range of Vulnerabilities (Hazards/ Threats)				Risk (Damage Expected)			Risk Calculation			Controls Solicited
	Physical	*Chemical*	*Biological*	*Social*	*Human*	*Environment*	*Assets*	*Probability*	*Consequence*	***Risk Rating***	

3.2 Costing prior to start-up/ go-live

Estimated Cost	Material Requirement	Labor Strength	Other Resources
Estimated Time For Execution:			

3.3 Actions to be implemented prior to start-up/ go-live

No.	Description	Responsible(s)	Date	Results
1.				
2.				
3.				
4.				
5.				
6.				
7.				

4. Approval of MoC (For Modification Job and Fund)					
Concerned Competent Authority	Approval		Domain/ Department/ Section	Signature	Date
	Job	Fund			
Executive Director	☐	☐			
General Manager	☐	☐			
Area Manager	☐	☐			
Location IC	☐	☐			
Sectional IC	☐	☐			

5. Data Entry		
Approval Entered in Record		
Drawings Marked As Approved For Construction		
Document Controller	Signature (Name/ Department)	Date

6. Quality Checks		
Pre-Commissioning Checks Complete		
Commissioning Checks Complete		
Team Leader	Signature (Name/ Department)	Date

7. Close & Archive MoC		
MoC Initiator	Signature (Name/ Department)	Date
QC	Signature (Name/ Department)	Date
Location IC	Signature (Name/ Department)	Date
Notes for closing:		

Appendix A

Specimen Pre-Startup Safety Review (PSSR) Checklist

Following checks are to be ensured:

TEMPERATURE/REACTION CONSIDERATIONS

____ (T01) Have personnel been adequately protected from contact with hot surfaces?
____ (T02) Has potential for instrument failure (including computer shutdown) been adequately addressed?
____ (T03) Has potential for leaks into or out of the process been adequately addressed?
____ (T04) Has potential for improper valve setup or operating error been adequately addressed?
____ (T05) Has potential for loss of utilities been adequately addressed?

VALVE, PIPING, AND VESSEL CONSIDERATIONS

____ (V01) Have cross-tied lines (pump headers, utility lines, etc.) been avoided where contamination, pressure, or temperature problems are likely?
____ (V02) Has a line-by-line review been conducted to ensure that the piping is installed as specified?
____ (V03) Is piping laid out such that it is self-draining for cleanup and maintenance?
____ (V04) Have unused piping branches been eliminated?
____ (V05) Has piping been laid out in a straightforward manner such that potential for confusion is minimized?
____ (V06) Are vents and drains located such that they do not create personnel hazards?
____ (V07) Are sample points properly configured for safe sampling?
____ (V08) Has safe access to valve operation been provided?
____ (V09) Has pipe been located such that it cannot slip or fall due to line expansion during cleanup, startup, or shutdown?
____ (V10) Are hoses and fittings of the approved type according to the plant hose policy?
____ (V11) Have the hoses been fitted with current inspection tags?
____ (V12) Have bleedoffs been provided at hose connection points?
____ (V13) Are open-ended valves of the approved type (i.e., locking handle, gate valve)?
____ (V14) Has a means been provided such that all valves can be locked?
____ (V15) Has adequate backflow prevention been provided?
____ (V16) Have nipple lengths been minimized and cantilevered branch connections avoided?
____ (V17) Have electrical continuity and grounding been provided and checked?
____ (V18) Has appropriate color-coding been provided where needed?
____ (V19) Have lines been clearly labeled, including flow arrows?
____ (V20) Has appropriate testing been completed and documented to ensure the integrity of new or revised piping systems?
____ (V21) Have drawings been revised to show "as installed" condition?
____ (V22) Has material of construction been verified to ensure that the correct material was received and installed according to the valve and piping specifications?
____ (V23) Have the correct gaskets been installed according to the valve and piping specifications?
____ (V24) Have all test blanks and blinds been removed?
____ (V25) Has the testing fluid been properly flushed from the piping or vessel?
____ (V26) Is the piping system adequately supported or braced?
____ (V27) Have check valves been reviewed to ensure that they are installed in the proper direction?
____ (V28) Is piping sloped where necessary?
____ (V29) Are bolts properly torqued?

ROTATING AND MECHANICAL EQUIPMENT CONSIDERATIONS

____ (R01) Have special precautions for safe operation been adequately specified?
____ (R02) If new lubricants or buffer fluids have been introduced, have MSDSs been provided?
____ (R03) Has tubing on complex seal flush arrangements been color-coded or otherwise marked to ensure correct hookup after maintenance?
____ (R04) Have adequate equipment guards been installed?
____ (R05) Do adequate provisions exist for cleanup, isolation, and lockout of equipment to perform maintenance?
____ (R06) Have inspection, test, and preventive maintenance provisions been made?
____ (R07) Are capacities of lifting equipment, floors, and hoists clearly displayed and visible to the operator?
____ (R08) Has the proper rotation of equipment been assured?
____ (R09) Is the drive unit grounded?
____ (R10) Have the lubricants and seal fluids been properly charged?

CONTROL SYSTEM CONSIDERATIONS

____ (C01) Has the fail-safe function of valves been properly installed?
____ (C02) Has potential for interaction with existing controls been reviewed and addressed?
____ (C03) Are alarms provided where necessary?
____ (C04) Are unnecessary alarms avoided?
____ (C05) Are guards provided to prevent accidental tripping of switches?
____ (C06) Can automatic valves be properly isolated and cleaned for servicing or removal?
____ (C07) Have new instruments and alarms been identified and designated as such in the inspection, test, and preventive maintenance program?
____ (C08) Has the operation of interlocks and alarms been verified?
____ (C09) Have the actuator air supplies been valved in?
____ (C10) Has the operation of all control loops been verified?

ELECTRICAL SYSTEM CONSIDERATIONS

____ (E01) Have start/stop switches and electrical switchgear been properly labeled?
____ (E02) Can electrical equipment be isolated safely for repair work?
____ (E03) Do lockout provisions exist both at the switchgear and at the start/stop switch?
____ (E04) Have conduit fittings been properly sealed?
____ (E05) Have electrical protective relays and safety devices been calibrated?
____ (E06) Is electrical equipment properly grounded?
____ (E07) Has the electrical equipment been properly protected from corrosion?
____ (E08) Have electrical interlocks been tested for proper operation?
____ (E09) Has the proper rotation of motors been assured?
____ (E10) Have electrical drawings been completed to reflect "as installed" condition?

____ (E11) Have electrical equipment manuals been appropriately filed?
____ (E12) Have electrical guards been installed?
____ (E13) Are indicator lights operating properly?
____ (E14) Have electrical test results been reviewed and approved?
____ (E15) Has electrical heat tracing been properly labeled?
____ (E16) Is all electrical equipment consistent with electrical classification documentation?

PERSONNEL SAFETY/HEALTH AND FIRE PROTECTION CONSIDERATIONS

____ (S01) Has adequate safety equipment (e.g., fire extinguishers, eye baths, safety showers, Scott Air Paks, alarm boxes) been provided and located where needed?
____ (S02) Is unobstructed access to safety and fire protection equipment provided?
____ (S03) Has potential for exposure to high noise levels been adequately addressed?
____ (S04) Is lighting adequate?
____ (S05) Do walkways and ladders provide safe access at all levels?
____ (S06) Do all ladders have gates or chains across opening?
____ (S07) Are walking and working surfaces level, properly secured, and providing adequate traction?
____ (S08) Have elevated work requirements been met?
____ (S09) Is the work area adequately ventilated?
____ (S10) Are process sight glasses, flow indicators, gauges, etc., properly armored?
____ (S11) Do signs adequately identify work area hazards and provide appropriate instruction?
____ (S12) Are exits and egress routes clearly identified?
____ (S13) Is the physical layout acceptable in regard to:
Height of equipment, accessibility, and lifting?
All "hot" surfaces being covered?
Tank legs being fire-proofed?
____ (S14) Are MSDSs available at the locations where the chemicals will be handled?
____ (S15) Has the HAZCOM program been updated to reflect changes in chemicals handled?
____ (S16) Have vessels been properly labeled?
____ (S17) Have proper handling and storage facilities been provided for all new chemicals?
____ (S18) Has the job site been properly cleaned up?
____ (S19) Have provisions been made to minimize potential for personnel exposure during cleanup, preparation for maintenance, and maintenance work (field and shop)?

WASTE STREAM AND ENVIRONMENTAL IMPACT CONSIDERATIONS

____ (W01) Are diking, draining, and curbing adequate?
____ (W02) Have adequate provisions been made for disposal of all wastes (i.e., drums, bags, filter elements, liquid residues)?
____ (W03) Will runoff rainwater be adequately contained if it can become chemically contaminated?
____ (W04) Are adequate provisions made for drum or other portable container handling?
____ (W05) Are sewers in the area properly identified as "clean" or "process" sewers?
____ (W06) Are sewer maps up to date?
____ (W07) Have diking isolation valves been closed?

DOCUMENTATION AND TRAINING CONSIDERATIONS

____ (D01) Has a new or revised procedure been provided and approved if required?
____ (D02) Have special procedures such as sampling methods, equipment lubrication, etc., been provided?
____ (D03) Have procedures and operator training been checked to ensure that they contain adequate provisions for health exposure control; unit startup, recycle, or hold modes; unit shutdown; and component failure and emergency response activities?
____ (D04) Have production, maintenance, hourly, and supervisory personnel been properly trained in the revisions?
____ (D05) Have training and certification materials been updated for production and maintenance?
____ (D06) Have emergency procedures been reviewed and revised as appropriate? Have required approvals been obtained?
____ (D07) Have unit safety equipment checklists been updated to reflect required checks of new or revised equipment?
____ (D08) Has the unit alarm listing been updated to reflect additions or deletions of alarms?
____ (D09) Has the unit safety relief device checklist been updated to reflect additions or deletions?
____ (D10) Have special procedures for commissioning or first-time startup been provided and reviewed, if required?
____ (D11) Has this change been adequately communicated to adjacent units or other affected groups?
____ (D12) Has the plant plot plan been updated?
____ (D13) Have process flow diagrams (PFDs) and P&IDs been updated?
____ (D14) Have the training equipment needs been considered and purchased for this project?
____ (D15) Have the production and maintenance training materials been forwarded to unit personnel and properly filed?
____ (D16) Have appropriate manuals or programs been updated?
____ (D17) Has vendor literature on equipment been filed properly in maintenance and production areas?
____ (D18) Has the training been completed, documented, and input into the training records system?

OTHER CONSIDERATIONS

____ (O01) Does equipment layout provide safe access for production and maintenance?
____ (O02) Are vessels, piping, instruments, and other components adequately supported?
____ (O03) Are appropriate materials of construction used for compatibility/corrosion?
____ (O04) Has the potential impact of the change on unchanged facilities been adequately addressed?
____ (O05) Have adequate provisions been made for technical or supervisory support during initial operation?
____ (O06) Have critical spare parts been obtained?

9.3 Incident Investigation

OGM/P-HSE-9.3(2) Revision Number 2

Original Issue: October 14, 2019
This Issue: November 21, 2025

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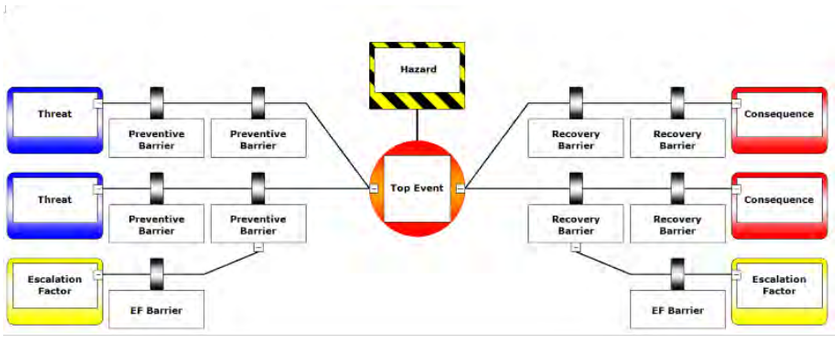
Change/ Revision Log

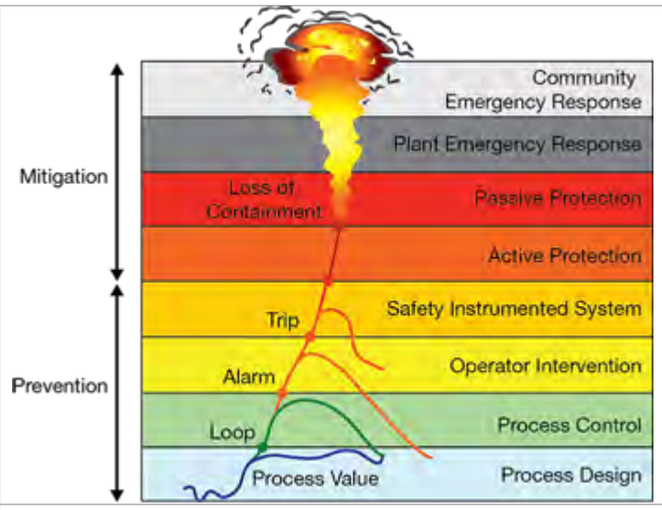
#	Description of Change
1	Modified: *New Logo & Tag Line*
2	Modified: *Activity-based Event Classification*

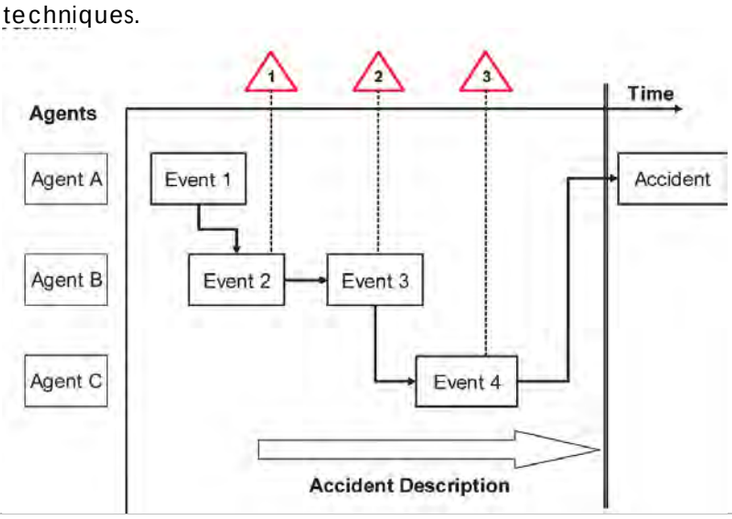
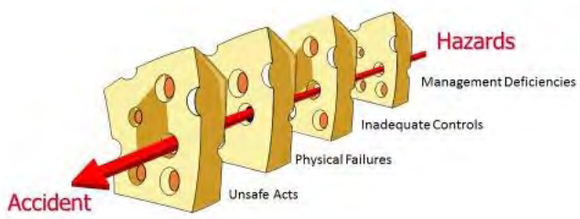
Associated Documents Approval & Issue

Related Document/ Record	Initiated by	Reviewed by	Checked/ Verified / Approved by
OGF – HSE – 046 Preliminary Incident Report (PIR)	Any Employee	Location IC Location HSE Rep.	Location IC
OGF – HSE – 046A Incident Investigation Report (IIR)	Investigation Committee	Investigation Committee	Investigation Committee
OGF – HSE – 049 Register of Occupational Illnesses and Injuries	Location Medical Rep.	Location Medical Rep.	Location Medical Rep.
OGF – HSE – 050 Employee's Workplace Exposure & Health (WEH) Record	Location Medical Rep.	Location Medical Rep.	Location Medical Rep.

9.3.1 Definitions

Bowtie Diagram	A 'bowtie' is a diagram that visualizes the risks and multiple plausible scenarios in an easy to understand picture. The diagram is shaped like a bow-tie, creating a clear differentiation between proactive and reactive risk management. 
Controlled Activity	An activity in a work environment (as a condition of employment i.e. physical location, equipment, material or vehicle) where OGDCL can set HSE policies, standards and procedures (PSP) and directly supervise and enforce its application. Incidents arising from controlled activities are reported, investigated and tracked.
Continual improvement	Process of enhancing the HSE management system to achieve improvements in overall HSE performance in line with organization's HSE policy.
Contributing Surface Cause	Major but not the root level cause of an incident (implicating or has potential to implicate) an injury or illness e.g. in case of a fall from a ladder contributing surface causes may be a) slippery floor, chemical leak, broken valve and/or untrained worker indicating *unsafe condition* and b) person did not inspect, ignored the vulnerability (hazard), failed to report the vulnerability (hazard) and/or himself created the vulnerability (hazard) indicating *unsafe behavior.*
Corrective & Preventive Action Request (CPR)	An HSE System Tool/Form for continuous improvement to timely document an issue or an emerging issue to enable focus on systematic investigation of discrepancies (violation, failures and/or deviations) in an attempt to prevent their recurrence (for corrective action) or to prevent occurrence (for preventive action).
Design Root Cause	Root level cause of an incident (implicating or has potential to implicate) an injury or illness e.g. in case of a fall from a ladder primary surface causes may be a) nonexistence of maintenance plan, flawed inspection plan and/or nonexistence of implementation strategy indicating *unsafe condition* and b) failing to provide tools, inadequate supervision, non-enforcement of rules and/or inconsistent training of the person indicating *unsafe behavior.*
Dangerous Occurrence	Readily identifiable event with potential to cause an accident or disease to persons at work and the public or of significant actual or potential material damage. (Also see *Near Hit.*)
Fatality	Death of workforce member caused by a work related incident, regardless of the time intervening between injury and death.
First Aid Case	Work related injuries or illnesses that involve a single treatment of minor bruises, cuts, burns, scratches etc. and not requiring medical care of the level to take the patient to the Hospital. This includes injuries / illnesses that require minor treatment, e.g. any one-time treatment, cleansing, application of bandages / band-aids, treatment of minor scratches, cuts, burns, splinters, etc.
Line Of Fire Injuries	Line of fire injuries occur when the path of a moving object or the release of hazardous energy (to be taken as a harms-way) intersects with an individual's body.
Layers of Protection Analysis (LOPA)	A method used to evaluate high-consequence scenarios determining if the combination of probability of occurrence and severity of consequences meets a company's risk tolerance.

	
Loss of Primary Containment (LOPC)	An unplanned or uncontrolled release of any material from primary containment, including non-toxic and non-flammable materials (e.g. steam, hot condensate, nitrogen, compressed CO2 or compressed air).
Lost Workday (Time) Injury (LWI o LTI)	A work related injury or illness which results in the OGDCL's or contractor's workforce member declared medically unfit to attend duty on the next calendar day (24 hrs) after the day of injury. The criteria "24 hours" include rest days, weekend days, scheduled holidays, public holidays or subsequent days after ceasing employment; However, if medical practitioner declares that the injured person is fit to attend office within 24 hours, then the injury shall not be LWI or LTI.
Monitored Activity	An activity where OGDCL can influence but cannot set HSE policies, standards and procedures (PSP) and cannot directly supervise and enforce its application. Incidents arising from monitored activities are reported and investigated where possible.
Near Hit/ Near Miss	An unplanned event that do not result in injury, illness, or damage – but has the potential to do so. Only a fortunate break in the chain of events prevents an injury, fatality or damage. Human error is commonly an initiating event, a faulty process or system invariably permits or compounds the harm, and is the focus of improvement. Other familiar terms for these events is a "close call", "dangerous occurrence", or in the case of moving objects, "near collision".
Occupational Health Illness	Any illness suffered due to occupational matter like Noise Induced Hearing Loss, Food Poisoning, Musculoskeletal Disorder, etc.
Opportunity	A circumstance or a set of circumstances that could lead to the improvement of HSE performance.
Medical Treatment Case (MTC)	An injury severe enough to require treatment by a medical practitioner (a physician or nurse), but does not cause the worker to miss any work.
Permanent Partial Disability (PPD)	Any work related injury or illness which results in complete loss, or permanent loss of use, of any part(s) of the body or any permanent impairment of function or parts of body, regardless of any pre-existing disability of the injured member of impaired body function. A PPD is not related to the ability of the injured person to do is normal work, e.g. it is classified as a PPD if he has lost a finger, toe, arm, limb, etc. but (upon recovery) is still able to do his normal work or any other work that permits for the partial disability.
Permanent Total Disability (PTD)	Any work-related injury or illness, which permanently incapacitates an employee from doing any work and results in termination of employment.
Primary Containment	A tank, vessel, pipe, transport vessel or equipment intended to serve as the primary container for, or used for the transfer of, a material. Primary containers may be designed with secondary containment systems to contain or control a release from the primary containment.
Preliminary Incident Report (PIR)	Template used to capture workplace accidents, injury occurrences, or similar events. When an incident occurs, it must be reported within 12 hours, regardless of the extent of the damage.
Primary Surface Cause	Most superficial level of cause of an incident (implicating or has potential to implicate) an injury or illness e.g. in case of a fall from a ladder primary surface causes may be defective ladder indicating *unsafe condition* and hurriedness of the person indicating *unsafe behavior.*
Process Safety	An undesirable event / condition, generally traceable through a trip or

Incident	alarm via the instrumentation circuit e.g. an unplanned or uncontrolled Loss of Primary Containment (LOPC) from a process, or an undesired event or condition that, under slightly different circumstances, could have resulted in a LOPC.
Restricted Workday Case (RWC)	A RWC is a work related injury or illness which results in the OGDCL's or contractor's workforce member being unable; (1) to perform one or more routine duties, or (2) to work the full day on, or the next calendar day after the day of injury/illness. A RWC occurs when the injured person is temporarily assigned to do other, less strenuous work (than the normal job) e.g. an injured maintenance technician doing light office work. This also includes situations where the worker does perform his routine duties but for less period of time than normal shift timings because of restriction of work.
Root Cause Analysis (RCA)	A structured process that uncovers the physical, human, and latent causes of any undesirable event in the workplace.
Safety Integrity Level (SIL)	A measure of how "good" a Safety Instrumented System (SIS) will be at ensuring safety for a specific scenario and is based on hardware safety integrity and quantification of random hardware failures.
STOP Card	Influenced by STOP (Safety, Training, Observation and Program) Card, an HSE management tool proposed by DuPont and adopted by OGDCL. By encouraging all the employees to observe, identify and intervene the unsafe acts or accident symptom at workplace, it aims at "instantly" eliminating the hidden dangers and reducing occurrence of accident through small behavior based "on-spot talks" so that job/ work can resume safely.
Swim Lane Diagram or STEP (Sequential Timed Event Plot) Diagram	Tool used to analyze an accident by connecting events to indicate how they prompted a final result. It enables the investigator to build a graphical timeline and utilize it for further accident assessments techniques. 
Swiss Cheese Model	A simplified model used to illustrate analyses of major accidents and catastrophic systems failures by exhibiting multiple, smaller failures leading up to the actual hazard. Each slice of cheese represents a safety barrier or precaution relevant to a particular hazard. 
UBUC	Unsafe Behavior Unsafe Condition.
Uncontrolled Activity	If an activity is not controlled or monitored, it is an uncontrolled activity. This is an activity where OGDCL does not set or influence HSE policies, standards and procedures (PSP) and does not supervise HSE performance. Incidents arising from uncontrolled activities are neither reported, investigated or tracked; however, these incidents should be assessed for potential learning that could be applied within OGDCL.

9.3.2 Incident Reporting

- First-hand information of an incident shall be transmitted by Location IC to all concerned at Head Office within 01 hour of the incident through available communication channels like telephonically, cellular messaging, email, etc.
- Location IC shall submit Preliminary Incident Report (PIR) on the prescribed format to HSEQ Department and concerned HOD at Head Office on immediate basis but not later than 12 hours.
- Location IC shall give severity to the incident in the Preliminary Incident Report (PIR) from the table provided in the overleaf of PIR template.

9.3.3 Activity-based Event Classification

Controlled Activities: An activity in a work environment (as a condition of employment i.e. physical location, equipment, material or vehicle) where OGDCL can set HSE policies, standards and procedures (PSP) and directly supervise and enforce its application. Incidents arising from controlled activities are reported, investigated and tracked.

Scenario/ Example		Included in HSE Performance Measures	
		OGDCL	Contractor
An incident or illness involves signs or symptoms that result solely from a work-related event or exposure (performing job or driving company-owned vehicle) or caused by inhalation, absorption, ingestion or direct contact with workplace hazard(s) or by ingesting food contaminated by workplace contaminants, or gets food poisoning from food supplied by the company.	At a site operated & administered by OGDCL	Yes	Yes
	At an outsourced project site (e.g. seismic, drilling, pipeline laying, civil, etc.)	Yes, where OGDCL employee/ asset is affected	Yes
An incident arising from the crew performing job or driving vehicles under contractual obligation.	Hired bowsers/ carriage services/ service-company/ contractor/ sub-contractor INSIDE OGDCL site boundaries	Yes, where OGDCL employee/ asset is affected	Yes
	Contractor/ sub-contractor at seismic survey site or pipeline laying area INSIDE OGDCL block/ lease		
An incident arising while traveling (in either company's-owned, company-hired or personal vehicle) INSIDE OGDCL site boundaries: i. to or from fixed or temporary residence to or ii. from fixed or temporary workplace or iii. for providing pick & drop/ medical coverage under CSR obligation.		Yes, where OGDCL employee/ asset is affected	Yes, where hired vehicle is involved

Monitored Activities: An activity where OGDCL can influence but cannot set HSE policies, standards and procedures (PSP) and cannot directly supervise and enforce its application. Incidents arising from monitored activities are reported and investigated where possible.

Scenario/ Example		Included in HSE Performance Measures	
		OGDCL	Contractor
An incident arising from the crew performing job or driving vehicles under contractual obligation.	Hired bowsers/ carriage services/ service-company/ contractor/ sub-contractor OUTSIDE OGDCL site boundaries	Yes, where OGDCL employee/ asset is affected	Yes *(Not to be included in the combined HSE KPIs)*
	Contractor/ sub-contractor at seismic field or pipeline laying area OUTSIDE OGDCL block/ lease	No	
An incident arising from the government related service company's or its Contractor's/ sub-contractor's crew performing job or driving vehicle involving Right of Way (ROW)/ government infrastructure (bridge, road, canal, river, transmission line, etc.) as well as OGDCL pipeline, OUTSIDE OGDCL site boundaries		Yes, where OGDCL employee/ asset is affected	N/A
An incident arising while traveling OUTSIDE OGDCL site boundaries: i. to or from fixed or temporary residence to or ii. from fixed or temporary workplace or iii. for providing pick & drop/ medical coverage under CSR obligation.	In either company's-owned or company-hired vehicle	Yes, where OGDCL employee/ asset is affected	Yes, where hired vehicle is involved
	In personal vehicle	No	No
An incident arising while travelling or visiting the premises of any stakeholder e.g. customer, vendor, OGDCL's non-operated Joint Venture Partner, or any other oil and gas E&P site for business purpose under contractual obligation.		Yes, where OGDCL employee/ asset is affected	Yes, where hired vehicle is involved

An injury or illness involves signs or symptoms that surface at work but result solely from a non-work-related event/ exposure outside the work environment like voluntary participation in a wellness program or in a medical, fitness, or recreational activity; eating, drinking, or preparing food or drink for personal consumption; or personal grooming, self-medication for a non-work related condition, or is intentionally self-inflicted.	No	No

Uncontrolled Activities: If an activity is not controlled or monitored, it is an uncontrolled activity. This is an activity where OGDCL does not set or influence HSE policies, standards and procedures (PSP) and does not supervise HSE performance. Incidents arising from uncontrolled activities are neither reported, investigated or tracked; however, these incidents should be assessed for potential learning that could be applied within OGDCL.

- OGDCL employee/ asset affected due to security-related incident (terrorist attack, bomb/ improvised explosive device (IED) blast, theft/ pilferage firing attack, local insurgency etc.)
- OGDCL employee while attending meetings, conferences, seminars, workshops OUTSIDE OGDCL premises.
- OGDCL employee travelling in public transport like bus, train, airplane, ship, etc.
- Activities in OGDCL's non-operated Joint Venture Partner's field by its own or contractor's workforce members.
- Service company, contractor or sub-contractor crew performing job or driving vehicles as per contractual obligation OUTSIDE OGDCL site boundaries/ block/ lease.

Note-1:
A work related injury incurred to visitors/ guests of following categories visiting OGDCL site and declared medically unfit to attend duty on the next calendar day shall not be considered as OGDCL's lost time:

- *Customer*
- *Regulator*
- *Third party auditor*
- *Supplier*

Incident caused to above categories shall be reported and investigated keeping in view the level and potential of incident and shall be considered in the HSE Performance only if the root cause is operational control or equipment failure but not due to individual's mistake.

Note-2:
For further clarification, HSEQ Department Head Office may be consulted.

9.3.4 Constitution and Eligibility Criteria of Investigation Committee

- The investigation should be led by a person independent of the activities being investigated.
- Incident Investigation Committee for the Significant Incidents (Severity Level 4/ 5) shall comprise of:
  - Investigation Committee Chairman
  - Investigation Committee Member-I (Operation)
  - Investigation Committee Member-II (HSE/ HR)
  - Investigation Committee Member-III (Optional; Workers' (Staff) Representative)
- The formation, constitution and eligibility criteria of the Investigation Committee is explained below:

Severity Level*	Committee Appointed By	Eligibility		
		Committee Chairman	Committee Member-I	Committee Member-II
Catastrophic (5)	MD/ CEO/ CFO	Executive Director	GM Operations	GM/ Manager HSEQ
Critical (4)	MD/ CEO/ CFO	Executive Director	GM/ Manager Operations	GM/ Manager HSEQ
Major (3)	Executive Director	GM/ Manager HSEQ	Manager/ Chief Operations	Manager/ Chief HR Directorate
Marginal (2)	GM HSEQ	Manager/ Chief Operations	Medical/ Security Rep.	HSEQ Rep.
Negligible (1)	Location IC	Section IC	Medical/ Security/ Operations Rep.	HSEQ Rep.

** Ref. Table-A: Consequence Severity (C), Enterprise Risk Management (ERM) Procedure*

- Committee Chairman shall be independent of the domain/ activity where incident occurred.
- Investigation Committee members must successfully complete formal training on Incident Investigation.
- Investigation Committee shall formulate the investigation report on a prescribed format attached with this procedure titled Incident Investigation Report (IIR).

9.3.5 Investigation Process

9.3.5.1 Planning

- The investigation Committee should conduct formal planning prior to collecting data and interviewing personnel. The following provide an overview of activities, but not limited to, that needs to be conducted:
  - The planning stage may normally commence with a presentation from the Location Management giving an overview of the incident sequence and operation of the site. This presentation is not to be used to draw preliminary conclusions but is used only to familiarize the investigation Committee with the operations and the event sequence.
  - A site visit by the investigation Committee should be conducted before the information collection begins.
  - Physical evidence should be collected, protected, preserved, evaluated and recorded to ultimately determine how and why failures occurred.
  - Evidence should be documented (sketched, mapped, photographed, video), preserved and secured by the investigating Committee.
  - Prior to the removal of any evidence, the exact location and orientation must be recorded or referenced to the incident location.
  - If the scene of incident is declared a crime scene, no evidence can be removed.
  - Facts and data gathering should be initiated as soon as possible after an incident to limit the information "decay" with time.

9.3.5.2 Interviewing

- Those personnel directly involved with the incident, including contractors and temporary staff, should be interviewed.
- The Investigation Committee shall develop a standard set of interview questions and determine the most appropriate means of documenting interviews.
- The Investigation Committee may adopt the 5W1H technique (i.e. Who; What; When; Where; Why and How type questions) during investigation process.

9.3.5.3 Establishing Events Timeline

- Identify the main incident event. This should be a single line statement usually describing the point in time when the incident occurred.
- Progress backward in time to identify the pre-incident sequence of sub-events from the information collected.
- Progress forward in time from the incident to identify the post-incident sub-event sequence.
- For each sub-event, detail of relevant conditions at the time of that event to be noted.
- Each sub-event and condition to be discretely numbered so that the Timeline can be reconstructed.
- Events that require further investigation should be clearly marked so that the relevant information be acquired.

9.3.5.4 Identify Failed / Missing Barrier(s)

- Swiss-Cheese/ Bowtie Diagram may be drawn for accident causation to illustrate layers of defense between hazards and accidents.
- For any incident to occur, multiple barriers may have weakened or failed. Investigation Committee should determine why the barriers weakened or failed by assessing following Comprehensive List of Causes (CLCs):

9.3.5.4.1 Active Failures (Primary Surface Causes)

- Active failure is a factor which directly caused the incident. It is also called Primary Surface Cause of the Incident.
- An active failure is an element of unsafe or unsatisfactory behavior or condition prior to an incident event which is significant in initiating the event.
- Investigation Committee should determine why the active failure occurred and linking the replies with the other evidence.

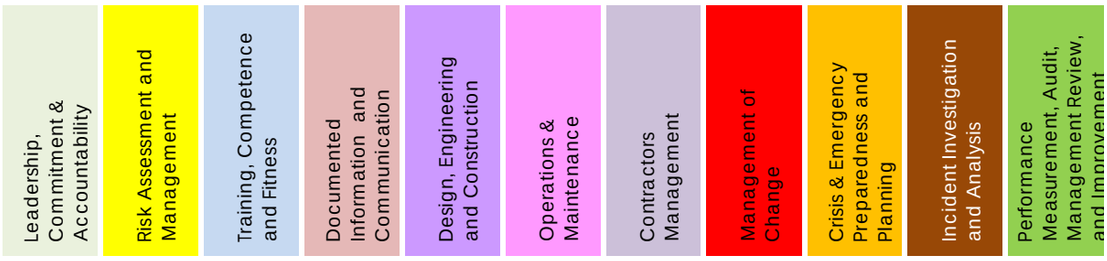
- Active failures (Actions and Conditions) can take a variety of forms and Investigation Committee shall identify the pertinent failures form the chart mentioned in the Incident Investigation Report (IIR) template.

9.3.5.4.2 Preconditions (Contributory Causes)

- Preconditions are those conditions under which work is undertaken and that directly influence human or equipment performance.
- These are also sometimes mentioned as Contributory Cause which directly contributes to Active Failure.
- For each Active Failure, there can be a multiple number of Preconditions (Contributory Causes) and Investigation Committee shall identify the pertinent failures form the chart mentioned in the Incident Investigation Report (IIR) template. *(Contributory Causes are assigned distinct color scheme to be linked with Design Root Causes)*

9.3.5.4.3 Latent Failures (Design Root Causes)

- Latent Failures are HSE Management System failures which led to the pre-conditions of the incident. They are also mentioned as Design Root Causes and often ascribed to Elements of Management Systems or Elements of Performance Standards.
- Latent Failures (Design Root Causes) are linked with Preconditions (Contributory Causes) using a distinct color scheme as visible from the list mentioned below:



- Investigation Committee shall identify and elaborate the pertinent failures, gaps or deviations as design root causes in the Incident Investigation Report (IIR).

9.3.5.5 Findings and Report Writing

- Assessment of all failed & missing barriers i.e. active failures (primary surface causes), preconditions (contributory causes) and latent failures (design root causes) shall be correlated and a comprehensive root cause analysis shall be summarized as findings.
- Immediate corrective measures as well as long-term corrective & preventive actions shall be determined along with timeframe.
- Standardized Incident Investigation Report (IIR) format shall be used for all investigations.

9.3.5.6 Close Out of Corrective & Preventive Actions

- Concerned HOD(s) shall be responsible to ensure that corrective and preventive actions are implemented as per prescribed timeframe.
- HSEQ Department shall develop a Checklist against the recommendations scribed in the IIR and review the compliance status on quarterly basis.
- Subsequently based upon satisfactory follow-ups on the effectiveness of actions taken, the Investigation Report shall be closed out by HOD, HSEQ Department.

9.3.5.7 Communication of Lessons Learned

- Investigation Report shall be retained as an evidence of type / nature of the incidents that have occurred and the results of corrective & preventive actions taken, including their effectiveness.
- The lessons learned from the incident and the description of associated dangers shall be communicated through Safety Alert across the

organization and with relevant stakeholders as well and it shall be encouraged that the Recipients of Safety Alert to share them further within their coworkers.

OGE - HSE - 046(07)

Oil & Gas Development Company Limited

PRELIMINARY INCIDENT REPORT

(Must be reported on the same day to HSEQ Department OGDCL Head Office Islamabad)
[Fax.: 051-2623041; Email: HSEQReports@ogdcl.com]

PART I: General

Date: _____
Time: _____
Activity: _____
Area: _____
Location/ Field: _____
Reported By: _____

Activity-based Event Classification

- ☐ Work-related
- ☐ Non-work related
- ☐ OGDCL crew
- ☐ Contractor crew
- ☐ Third party
- ☐ Within OGDCL site boundary
- ☐ Outside OGDCL site boundary

Severity ☐ 5 ☐ 4 ☐ 3 ☐ 2 ☐ 1

Note: Location IC shall assign Severity to the incident from the Severity Matrix mentioned overleaf.

PART II: Incident / Nonconformance / Deviation:

Summary:

☐ Fire	☐ Gas Leakage	☐ Oil/ Chemical Spill	☐ Roadside Accident	☐ Improper Lifting	☐ Falling Object	☐ Struck By	☐ Confined space	☐ Explosive Blast	☐ Equipment Safeguarding	☐ Fall from Height

Description:

PART III: Summary of Consequences:

Asset Damage (Quantify)	Environment Damage (Quantify)	Human Damage		Production Loss (Quantify)	Reputation Damage
		Injury(ies)	Fatality(ies)		

1.					
2.					
Name of Injured/ Fatality	Designation	Employment No	DOB	Section/Deptt.	Status*

* Regular/ Contractual/ Work Charge/ Trainee/ Contractor/ Other

PART IV: Contributing Surface Cause(s):

Unsafe Condition	Unsafe Act/Behavior
☐ Improper HSE Equipment	☐ Operating without Authority
☐ Improper HSE Documentation	☐ Horseplay
☐ Poor Illumination	☐ Over-speeding
☐ Improper / Incomplete Resources	☐ Overriding Safety Devices
☐ Non-provision of Necessary Protection Equipment	☐ Not Wearing Proper Protection Equipment
☐ Unsafe Design or Construction	☐ Ill Maintenance of Tools
☐ Poor / Inadequate Operating Conditions	☐ Disobeying Instructions / Not Following SOP
☐ Inadequate Warning System	☐ Wrong Orders of Supervisor
☐ Poor Housekeeping	☐ Too Much Occupied/Over-worked/Fatigue
☐ Defective Tool	☐ Lack of Skill / Knowledge of Worker(s)
☐ Slippery Surface	☐ Unsafe Act of Outsider(s)
☐ Bad Environmental Conditions	☐ Unsafe Act of Fellow-Worker(s)
☐ Any Other(s) _____	☐ Working in Bad Environmental Conditions
	☐ Any Other(s) _____

PART V: Immediate Cautions Taken On Affected Area/ Incident Site?

☐ Concerned informed/ evacuated	☐ Injured/ casualties removed	☐ Site barricaded & warning sign posted	☐ First aid provided	☐ Admin & Medical teams informed	☐ Hazards contained/ controlled	☐ Energy isolated

PART VI: Regulatory Department/ Concerned Intimated?

☐ Families of Victims	☐ CIM	☐ EPA	☐ PNRA	☐ Police	Notes:

Signature & Date:
Reported By

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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Oil & Gas Development Company Limited

PRELIMINARY INCIDENT REPORT

(Must be reported on the same day to HSEQ Department OGDCL Head Office Islamabad)
[Fax.: 051-2623041; Email: HSEQReports@ogdcl.com]

Table-A: Consequence Severity (C)

	Potential Impact						
	Regulatory & Legal	**Social/ Community**	**Environment**	**Safety**	**Security**	**Financial**	**Reputation**
Catastrophic (5) [Very Material]	*Breaches resulting in hefty penalties/ imprisonment/ revocation of registrations, licenses or permits*	*Widespread, visible complaints and involvement of NGOs, notables, national authorities and general public*	*Continuous excursions beyond allowable or regulatory limits Or widespread damage to multiple environmental attributes. Consequences of the event can either not be remediated or remediation requires significant resources and time (more than a year time frame).*	*Multiple Fatalities/ Disabilities*	*Extensive loss of life, widespread severe injuries, total loss of primary services, core processes or functions*	*Extreme impact of investment or risk-event* *Routine business >49.9 million US$* *Other/ Diversification >99.9 million US$*	*International concern affecting the company's ongoing business/ existence; Severe, long-lasting and irreversible deterioration of the reputation of the company, with reiterated long-term and strongly negative media impact*
Critical (4) [Material]	*Breaches resulting in significant penalties/ ceasing of operations*	*Major and repeated community & stakeholder concerns, involvement of notables, local entities*	*Intermittent excursions beyond allowable or regulatory limits Or extensive damage to the environment, consequences that can be rectified and remediated within a year's timeframe*	*Single Fatality/ Disability*	*Loss of life/ serious injuries, damage to the Company assets, impairment of core processes and functions for extended period*	*High impact of investment or risk-event* *Routine business 30 – 49.9 million US$* *Other/ Diversification 60 – 99.9 million US$*	*Considerable negative publicity or damage to the company's reputation at national level with wide media coverage*
Major (3) [Consequential]	*Breaches resulting in warnings without penalties*	*No serious community or stakeholder concerns or negative social or other media coverage that causes temporary disruption to business operation*	*Occasional excursions beyond allowable or regulatory limits Or environmental damage with consequences that can be rectified and remediated within a month's timeframe*	*Serious injury(ies) resulting in Lost Time*	*Minor injuries, minor impairment of core functions and processes*	*Significant but containable impact of investment or risk-event* *Routine business 10 – 29.9 million US$* *Other/ Diversification 30 – 59.9 million US$*	*Negative publicity or damage to the company's reputation at national/ provincial level covered by mainstream media*
Marginal (2) [Inconsequential]	*Breaches resulting in exposure to legal proceedings/ show cause notices*	*Low impact community issues, remedied after negotiations*	*Rare excursions beyond allowable or regulatory limits Or no significant environmental damage to the local environment, effects can be rectified and remediated immediately with some clean-up intervention within days*	*Injury (or injuries) requiring medical treatment*	*Small procession near location with slight damage/ threat to the assets/ personnel.*	*Minor impact of investment or risk-event* *Routine business 0.025 – 9.9 million US$* *Other/ Diversification 5 – 29.9 million US$*	*Minor one-off (rare) negative local publicity or visible dissatisfaction by local stakeholder groups, resolved through table of negotiations*
Negligible (1) [Trivial]	*Rectifiable breaches with no consequence to the company*	*Low impact community issues, quickly remedied*	*Slight environmental damage within the premises of the facility*	*Slight injuries requiring First Aid only*	*Small procession near location with no damage/ threat to the assets/ personnel.*	*Not much significant impact of investment or risk-event* *Routine business <0.025 million US$* *Other/ Diversification <5 million US$*	*Some attention from minor stakeholders, preemptively resolved by routine/ internal processes*

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

INCIDENT INVESTIGATION REPORT

TEMPLATE

< Mention Title of Incident Here >

OGF - HSE - 046A(01)

INCIDENT INVESTIGATION REPORT (IIR)

TABLE OF CONTENTS

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

1. CONSTITUTION OF INCIDENT INVESTIGATION COMMITTEE

Ref. Section 1.3 of Incident Investigation Procedure.

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

2. SUMMARY OF INCIDENT

- DATE, TIME, AND SPECIFIC LOCATION OF INCIDENT
- NAMES, JOB TITLES, AND EMPLOYEES / CONTRACTORS INVOLVED AND IMMEDIATE SUPERVISOR(S)
- NAMES AND STATEMENTS OF WITNESSES
- EVENTS LEADING UP TO INCIDENT
- EXACTLY WHAT EMPLOYEE / CONTRACTOR WAS DOING AT THE MOMENT OF THE ACCIDENT
- ENVIRONMENTAL CONDITIONS
- CIRCUMSTANCES (INCLUDING TASKS, EQUIPMENT, TOOLS, MATERIALS, PPE, ETC.)
- SPECIFIC INJURIES (INCLUDING PART(S) OF BODY INJURED AND NATURE AND EXTENT OF INJURIES)
- TYPE OF TREATMENT FOR INJURIES
- DAMAGE TO ENVIRONMENT, EQUIPMENT, MATERIALS, ETC.
- FLOWCHARTS / SKETCHES / PICTURES

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

3. FAILED / MISSING BARRIER(S)

· SWISS CHEESE DIAGRAM · BOWTIE DIAGRAM

For any incident to occur, multiple barriers may have weakened or failed. Investigation team should determine why the barriers weakened or failed by assessing following Comprehensive List of Causes (CLCs):

PROBABLE ACTIVE FAILURES (PRIMARY SURFACE CAUSES)

PROBABLE PRECONDITIONS (CONTRIBUTORY CAUSES)

LATENT FAILURES (DESIGN ROOT CAUSES)

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

SELECT MOST PROBABLE ACTIVE FAILURES (PRIMARY SURFACE CAUSES)

Actions

1.0 Following Procedures		2.0 Use of Tools or Equipment		3.0 Use of Protective Methods		4.0 Inattention / Lack of Awareness	
1.1.	Violation by individual	2.1.	Improper use of equipment	3.1.	Lack of knowledge of hazards present	4.1.	Improper decision making or lack of judgment
1.2.	Violation by group	2.2.	Improper use of tools	3.2.	Personal protective equipment not used	4.2.	Distracted by other concerns
1.3.	Violation by supervisor	2.3.	Use of defective equipment (aware)	3.3.	Improper use of proper personal protective equipment	4.3.	Inattention to footing and surroundings
1.4.	Operation of equipment without authority	2.4.	Use of defective tools (aware)	3.4.	Servicing of energized equipment	4.4.	Horseplay
1.5.	Improper position or posture for the task	2.5.	Improper placement of tools, equipment or materials	3.5.	Equipment of materials not secured	4.5.	Acts of violence
1.6.	Overexertion of physical capability	2.6.	Operation of equipment at improper speed	3.6.	Disabled guards, warning systems or safety devices	4.6.	Failure to warn
1.7.	Work or motion at improper speed	2.7.	Servicing of equipment in operation	3.7.	Removal of guards, warning systems or safety devices	4.7.	Use of drugs or alcohol
1.8.	Improper lifting	2.8.	Other	3.8.	Personal protective equipment not available	4.8.	Routine activity without thought
1.9.	Improper loading			3.9.	Other	4.9.	Other
1.10.	Shortcuts						
1.11.	Other						

Conditions

5.0 Protective System		6.0 Tools, Equipment and Vehicles		7.0 Work Exposure To		8.0 Workplace Environment / Layout	
5.1.	Inadequate guards or protective devices	6.1.	Defective equipment	7.1.	Fire or explosion	8.1.	Congestion or restricted motion
5.2.	Defective guards or proactive devices	6.2.	Inadequate equipment	7.2.	Noise	8.2.	Inadequate or excessive illumination
5.3.	Inadequate personal protective equipment	6.3.	Improperly prepared equipment	7.3.	Energized electrical systems	8.3.	Inadequate ventilation
5.4.	Defective personal protective equipment	6.4.	Defective tools	7.4.	Energized systems, other than electrical	8.4.	Unprotected height
5.5.	Inadequate warning	6.5.	Inadequate tools	7.5.	Radiation	8.5.	Workplace layout

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

	systems						controls
5.6.	Defective warning systems	6.6.	Improperly prepared tools	7.6.	Temperature extremes	-	*displays less than adequate*
5.7.	Inadequate isolation of process or equipment	6.7.	Defective vehicle	7.7.	Hazardous chemicals	-	*labels less than adequate*
5.8.	Inadequate safety devices	6.8.	Inadequate vehicle for the purpose	7.8.	Mechanical hazards	-	*locations out of reach or sight*
5.9.	Defective safely devices	6.9.	Improperly prepared vehicle	7.9.	Clutter or debris	-	*conflicting information presented*
5.10.	Other	6.10	Other	7.10	Storms or acts of nature	8.6.	Other
				7.11	Slippery floors or walkways		
				7.12	Other		

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

SELECT MOST PROBABLE PRECONDITIONS (CONTRIBUTORY CAUSES)

Personal Factors

9.0 Physical Capability		10.0 Physical Condition		11.0 Mental State		12.0 Mental Stress		13.0 Behavior		14.0 Skills	
9.1.	Vision deficiency	10.1.	Previous injury or illness	11.1	Poor judgment	12.1.	Preoccupied with problems	13.1	Improper performance is rewarded	14.1	Inadequate assessment of required skills
9.2.	Hearing deficiency	10.2.	Fatigue	11.2.	Memory failure	12.2.	Frustration	-	*saves time or effort*	14.2	Inadequate practice of skill
9.3.	Other sensory deficiency	-	*due to workload*	11.3.	Poor coordination or reaction time	12.3.	Confusing directions/demands	-	*avoids discomfort*	14.3	Infrequent performance of skill
9.4.	Reduced respiratory capacity	-	*due to lack of rest*	11.4.	Emotional disturbance	12.4.	Conflicting Directions demands	-	*gains attention*	14.4	Lack of coaching on skill
9.5.	Other permanent physical disabilities	-	*due to sensory overload*	11.5.	Fears or phobias	12.5.	Meaningless or degrading activities	13.2	Improper supervision	14.5	Insufficient review of instruction to establish skill
9.6.	Temporary disabilities	10.3.	Diminished performance	11.6.	Low mechanical aptitude	12.6.	Emotional overload	13.3	Inadequate identification of critical safe behaviors	14.6	Other
9.7.	Inability to sustain body positions	-	*due to temperature extremes*	11.7.	Low learning aptitude	12.7	Extreme judgment decisions/demands	13.4	Inadequate reinforcement of critical safe behaviors		
9.8.	Restricted range of body movement	-	*due to oxygen deficiency*	11.8.	Influenced by medication	12.8.	Extreme concentration/ perception demands	-	*proper performance is criticized*		
9.9.	Inadequate size or strength	-	*due to atmospheric pressure variation*	11.9.	Other	12.9.	Extreme boredom	-	*Inappropriate peer pressure*		
9.10.	Substance sensitivities or allergies	10.4.	Blood sugar insufficiency			12.1(	Other	-	*inadequate performance feedback*		
9.11.	Diminished capacity due to medication	10.5.	Impairment due to use of drug					-	*inadequate disciplinary process*		

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

			or alcohol
9.12.	Other	10.6.	Other

13.5	*Inappropriate aggression*
13.6	Improper use of production incentives
13.7	Supervisor implied haste
13.8	Employee perceived haste
13.9	Other

Job Factors

15.0 Training / Knowledge Transfer		16.0 Management / Supervision Employee Leadership		17.0 Contractor Selection and Oversight		18.0 Engineering / Design		19.0 Work Planning	
15.1.	Inadequate knowledge transfer	16.1	Conflicting roles/ responsibilities	17.1.	Lack of contractor pre-qualifications	18.1	Inadequate technical design	19.1.	Inadequate work planning
-	*inability to comprehend*	-	*unclear reporting relationships*	17.2.	Inadequate contractor pre-qualifications	-	*design input obsolete*	19.2.	Inadequate preventive maintenance
-	*inadequate instruction Qualifications*	-	*conflicting reporting relationships*	17.3.	Inadequate contractor selection	-	*design input not correct*	-	assessment of needs
-	*inadequate training equipment*	-	*unclear assignment of responsibility*	17.4.	Use of non-approved contractor	-	*design input not available*	-	lubrication/ servicing
-	*misunderstood instructions*	-	*conflicting assignment of responsibility*	17.5.	Lack of job oversight	-	*design output inadequate*	-	adjustment/ assembly
15.2.	Inadequate recall of training material	-	*improper or insufficient delegation of authority*	17.6.	Inadequate oversight	-	*design input feasible*	-	clearing/ resurfacing
-	*training not reinforced on the job*	16.2	Inadequate leadership	17.7.	Other	-	*design output unclear*	19.3.	Inadequate repair
-	*inadequate refresher*	-	*standards of*			-	*design output*	-	*communication*

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

	training frequency		*performance missing or not enforced*
16.3.	Inadequate training effort	-	*inadequate accountability*
-	*inadequate training program design*	-	*inadequate or incorrect performance feedback*
-	*inadequate training goals/ objectives*	-	*inadequate work site walk-through*
-	*inadequate new employee orientation*	-	*inadequate safety Promotion*
-	*inadequate initial training*	16.3.	Inadequate correction of prior hazard / incident
-	*inadequate means to determine if qualified for job*	16.4	Inadequate identification of worksite/ job hazards
16.4.	No training provided	16.5	Inadequate management of change system
-	*need for training not Identified*	16.6	Inadequate incident reporting/ investigation system
-	*training records incorrect or out of date*	16.7.	Inadequate or lack of safety meetings
-	*new work methods introduced without training*	16.8	Inadequate performance measurement and assessment

	not correct		*of needed repair*
-	*design output inconsistent*	-	*scheduling of work*
-	*no independent design Review*	-	*examination of parts*
18.2	Inadequate standards, specifications, and/or design criteria	-	*parts substitution*
18.3	Inadequate assessment of potential failure	19.4.	Excessive wear and tear
18.4	Inadequate ergonomic design	-	*inadequate planning for use*
18.5	Inadequate monitoring of construction	-	*extension of service life*
18.6	Inadequate assessment of operational readiness	-	*improper loading*
18.7	Inadequate monitoring of initial operation	-	*use by untrained people*
18.8	Inadequate evaluation and/or documentation of change	-	*use for wrong purpose*
18.9	Other	19.5.	Inadequate reference materials or publications

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

-	*decision made not to Train*

15.5. Other

16.9. Other

19.6.	Inadequate audit/ inspection/ monitoring
-	*no documentation*
-	*no correction responsibility assigned*
-	*no accountability for corrective action*
19.7.	Inadequate job placement
-	*appropriate personnel not identified*
-	*appropriate personnel not available*
-	*appropriate personnel not provided*

19.8. Other

Job Factors

20.0 Purchasing, Material Handling and Material Control		21.0 Tools and Equipment		22.0 Work Rules (Policies, Standards & Procedures – PSP)		23.0 Communication	
20.1.	Incorrect Items Received	21.1.	Inadequate assessment of needs and risks	22.1.	Lack of PSP for the task	23.1.	Inadequate horizontal communication between peers
-	*inadequate specifications to vendor*	21.2.	Inadequate human factors / ergonomics considerations	-	*lack of defined responsibility for PSP*	23.2.	Inadequate vertical communication between supervisor and person
-	*inadequate specifications on requisition*	21.3.	Inadequate standards or specifications	-	*lack of job safety Analysis*	23.3.	Inadequate communication between different organizations
-	*inadequate control on changes to orders*	21.4.	Inadequate availability	-	*inadequate job safety analysis*	23.4.	Inadequate communication between work groups
-	*unauthorized Substitution*	21.5.	Inadequate adjustment / repair / maintenance	22.2.	Inadequate development of PSP	23.5.	Inadequate communication between shifts
-	*inadequate product Acceptance requirements*	21.6.	Inadequate salvage and reclamation	-	*inadequate coordination with process / equipment design*	23.6.	Inadequate communication methods

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

-	*no acceptance verification performed*	21.7.	Inadequate removal / replacement of unsuitable items	-	*inadequate employee involvement in the development*	23.7.	No communication method available
20.2.	Inadequate research on materials / equipment	21.8.	No equipment record history	-	*inadequate definition of correction actions*	23.8.	Incorrect instructions
20.3.	Inadequate mode or route of shipment	21.9.	Inadequate equipment record history	-	*inadequate format for easy use*	23.9.	Inadequate communication due to job turnover
20.4.	Improper handling of materials	21.1(	Other	22.3	Inadequate implementation of PSP, due to deficiencies	23.10.	Inadequate communication of safety and health data, regulations or guidelines
20.5.	Improper storage of materials or spare parts			-	*contradictory requirements*	23.11.	Standard terminology not used
20.6.	Inadequate material packaging			-	*confusing format*	23.12.	Verification / repeat back techniques not used
20.7.	Material shelf life exceeded			-	*more than one action per step*	23.13.	Messages too long
20.8.	Improper identification of hazardous materials			-	*no check-off spaces provided*	23.14.	Speech interference
20.9.	Improper salvage and/or waste disposal			-	*inaccurate sequence of steps*	23.15.	Other
20.1(	Inadequate use of safety and health data			-	*confusing instructions*		
20.11	Other			-	*technical error / missing steps*		
				-	*excessive references*		
				-	*potential situations not covered*		
				22.4.	Inadequate enforcement of PSP		
				-	*inadequate monitoring of work*		
				-	*inadequate supervisory knowledge*		
				-	*inadequate reinforcement*		
				-	*non-compliant not corrected*		
				22.5	Inadequate communication of PSP		
				-	*incomplete distribution*		

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

	to work groups
-	inadequate translation to appropriate languages
-	incomplete integration with training
-	out of date revisions still in use

22.6 Other

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

ANALYSIS OF LATENT FAILURES (DESIGN ROOT CAUSES)

- Latent Failures are HSE Management System failures which led to the pre-conditions of the incident. They are also mentioned as Design Root Causes and often ascribed to Elements of Management Systems or Elements of Performance Standards.
- Latent Failures (Design Root Causes) are linked with Preconditions (Contributory Causes) using a distinct color scheme.
- Investigation Committee shall identify and elaborate the pertinent gaps or deviations as design root causes.

#	HSE System Element	Detail of Gap / Deviation
a.	Leadership, Commitment & Accountability	
b.	Risk Assessment and Management	
c.	Training, Competence and Fitness	
d.	Documented Information and Communication	
e.	Design, Engineering and Construction	
f.	Operations & Maintenance	
g.	Contractors Management	
h.	Management of Change	
i.	Crisis & Emergency Preparedness and Planning	
j.	Incident Investigation and Analysis	
k.	Performance Measurement, Audit, Management Reviews and Improvement	

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

4. FINDINGS

Assessment of all failed & missing barriers i.e. active failures (primary surface causes), preconditions (contributory causes) and latent failures (design root causes) shall be correlated and a comprehensive root cause analysis shall be summarized as findings.

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

5. RECOMMENDATIONS

Immediate corrective measures as well as long-term corrective & preventive actions shall be jot down along with timeframe.

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual

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INCIDENT INVESTIGATION REPORT (IIR)

6. ANNEXURES

Ref. Section 09 (Improvement) of OGDCL's Integrated HSE System Manual