



SAFETY CASE APPRAISAL GUIDELINE

EGPC-PSM-GL-013

PSM GUIDELINES

The Egyptian Process Safety Management Steering Committee (PSMSC Egypt)
PSM TECHNICAL SUBCOMMITTEE (PSMTC)

Acknowledgments

This publication has been produced as a result of the comprehensive efforts carried out by the PSM Technical Subcommittee on behalf of the Egypt PSM Steering Committee, formed per the Memorandum of Understanding signed between the Ministry of Petroleum and Mineral Resources and Methanex Egypt in February 2020 overseeing the design and implementation of a detailed PSM program to promote and enhance PSM culture for Ministry of Petroleum and Mineral Resources (MOP) and its affiliated COMPANIES following industry best practice, international codes and standards. The Egyptian Process Safety Management Steering Committee comprises MOP, EGPC, ECHEM, EGAS, GANOPE, and Methanex Egypt representatives.

PSM Technical Subcommittee team members during the project comprised:

Amr Moawad Hassan	PSM Senior Consultant – Methanex Egypt	Team leader
Mohamed Mesbah	Operations Department Head - KPC	Member
Ahmed Mostafa	Operations Section Head - ELAB	Member
Ahmed Roustom	Risk Management and Loss Prevention Studies Assistant General Manager – GASCO	Member
Hany Tawfik	OHS & PS General Manager – ETHYDCO	Member
Mohamed Ashraf Aboul-Dahb	Safety Section Head for Upstream – EGPC	Member
Mohamed Hamouda	HSE Department Head – Pharaonic Pet. Co.	Member
Mohammed Sabry	Risk Management and Loss Prevention Studies Executive General Manager – GASCO	Member
Sayed Eid	HSE A. General Manager – Agiba Pet. Co.	Member
Tamer Abdel Fatah	QHSE Senior – UGDC	Member

All PSM technical subcommittee documents are subjected to a thorough technical peer-review process during development and prior approval. The PSM technical subcommittee gratefully appreciates the thoughtful comments and suggestions of the peer reviewers. Their contributions enhanced the accuracy and clarity of the documents. The PSM Technical Subcommittee acknowledges the following reviewers from major Process Safety consultants as well as major operators & EPC contractors who provided valuable comments during the technical peer reviews that resulted in an outstanding product structure and quality:

Process Safety Consultants (in alphabetical order):

- Baker Engineering and Risk Consultants, Inc. (BakerRisk).
- Bell Energy Services - By: Amey Kulkarni, Technical Director.
- DNV- By: Cees de Regt, Senior Principal Consultant.
- Risktec Solutions - TÜV Rheinland.



Major IOCs & EPCs (in alphabetical order):

- ENPPI - By: Ahmed Mousa, Process Technology | GM Assistant, Safety & Loss Prevention Engineering.

It should be noted that the above have not all been directly involved in developing this document, nor do they necessarily fully endorse its content.


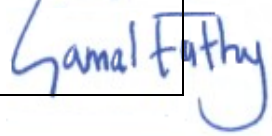
Egypt PSM Steering Committee team members during the project comprised:

Gamal Fathy	EGPC CEO Consultant for HSE – EGPC	Member
Mohamed Mahmoud Zaki	Executive Vice President – ECHEM	Member
Salah El Din Riad	Q&HSE Chairman Assistance – ECHEM	Member
Dr. Ashraf Ramadan	Assistant Chairman for HSE – EGAS	Member
Emad Kilany	OHS & Fire Fighting Technical Studies GM - EGAS	Member
Mohamed Sayed Suliman	HSE General Manager – GANOPE	Member
Mohamed Mostafa	Inspection & External Audit GM – ECHEM	Member
Mohamed Shindy	Managing Director – Methanex Egypt	Member
Manal El Jesri	Public Affairs Manager – Methanex Egypt	Member
Mohamed Hanno	RC Manager – Methanex Egypt	Member
Amr Moawad Hassan	PSM Senior Consultant – Methanex Egypt	Member
Mourad Hassan	PSM Consultant – Methanex Egypt	Member


 EGPC	SAFETY CASE APPRAISAL GUIDELINE	
	DOCUMENT NO: EGPC-PSM-GL-013	

DOCUMENT NO. EGPC-PSM-GL-013	TITLE SAFETY CASE APPRAISAL GUIDELINE	ISSUE DATE Nov. 2022
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Approval

NAME	TITLE	DATE	SIGNATURE
Amr Moawad Hassan	PSM Senior Consultant - Methanex Egypt PSM Technical Subcommittee TL	Nov. 2022	
Gamal Fathy	EGPC CEO Consultant for HSE	Nov. 2022	

Endorsement

NAME	TITLE	DATE	SIGNATURE
Alaa El Batal	CEO - Egyptian General Petroleum Corporation (EGPC)	Nov. 2022	

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Table of Contents

1.	Introduction	6
2.	Purpose	6
3.	Scope.....	6
4.	Definitions.....	7
5.	Abbreviations.....	8
6.	The Competent Authority Expectations	9
7.	Safety Case Appraisal Process.....	9
7.1	Safety Case Notification.....	10
7.2	Safety Case Preparation and Pre-receipt Meeting.....	10
7.3	Safety Case Submission and Decision.....	10
7.3.1	Safety Case Appraisal Period	10
7.3.2	Safety Case Completeness Check	11
7.3.3	Safety Case Full Assessment	11
7.3.4	Safety Case Appraisal Decision	12
7.4	Safety Case Intervention Plan.....	13
8.	Safety Case Appraisal Criteria.....	13
8.1	Detailed Data Sufficiency.....	14
8.2	ALARP Demonstration.....	14
9.	Failure to Submit the Safety Case.....	14
10.	Roles and Responsibilities.....	14
10.1	MHF Operator.....	14
10.2	Holding Companies.....	15
10.3	Safety Case Approving Authority (EGPC Chairman Assistant for HSE).....	15
10.4	Safety Case Endorsement Authority (EGPC Chairman)	15
10.5	Safety Case Appraisal Team (The CA)	16
10.6	Safety Case Appraisal RACI Chart.....	17
11.	Safety Case Appraisal Team Competency.....	17
12.	References	19
13.	List of Annexes	19
	Annex A - Safety Case Appraisal Checklist.....	20
A.1.	General.....	20
A.2.	MHF Description Section.....	21

A.3. Formal Safety Assessment Section.....	24
A.4. PSM System Section	25
A.5. Emergency Response Plan (ERP) Section	26
A.6. ALARP Demonstration Section	27
A.7. Improvement Action Plan Section.....	27
A.8. Appendices Section	28
A.9. Special Considerations for The Drilling IADC HSE Case	29
Annex - B Safety Case Interview Checklist	32
B.1. Sample of Interview Questions with the MHF CEO / Managing Director	32
B.2. Sample of Interview Questions with the Operations Manager	33
B.3. Sample of Interview Questions with the Plant Manager	35
B.4. Sample of Interview Questions with the Engineering/Technical Manager	37
B.5. Sample of Interview Questions with the HSE Manager	38
B.6. Sample of Interview Questions with the Process Safety Lead	39
B.7. Sample of Interview Questions for the Asset Integrity /Maintenance Managers	41
Annex C - Conclusion Letter Templates	42

1. Introduction

Because of its potential for major accidents, the way the hazardous materials are processed and handled is a big part of the high-risk nature of the oil, gas, and petrochemicals industries. The Safety Case report provides written documentation regarding the technical and operational information about those major hazards and their risks that may lead to a major accident at the Major Hazard Facility (MHF), as well as methods to prevent or mitigate those hazards and risks. In the Safety Case report, the MHF operator justifies the measures the operator has taken to ensure the facility's safe operation. The principal should be based on managing and reducing the risk associated with the MHF down to broadly acceptable levels or tolerable levels subject to risks being demonstrated to be As Low As Reasonably Practicable (ALARP) as per risk tolerance criteria included in the Risk Management Standard (EGPC-PSM-ST-001).

The Safety Case is an efficient method for helping the major hazard facility (MHF) operators to focus on the simple but important question, "How do you know that your system is safe enough?" A Safety Case is not to provide mathematical or statistical proof but to argue as one would in a court of law—thus, the name Safety Case. This guideline explains the appraisal process and criteria for accepting the Safety Case submitted by the operator to EGPC.



2. Purpose

This document illustrates how the Competent Authority (CA) assesses submitted Safety Cases and provides the basis for accepting, conditionally accepting, or rejecting Safety Cases. MHF operators should use it to understand better the CA expectations and minimum requirements in conjunction with the Safety Case Standard (EGPC-PSM-ST-002) and ALARP demonstration Guideline (EGPC-PSM-GL-010).

3. Scope

This document stipulates the Safety Case Appraisal requirements applicable to the Egyptian General Petroleum Corporation (EGPC) and Oil and Gas Holding Companies, including the Egyptian Natural Gas Holding Company (EGAS), the Egyptian Petrochemicals Holding Company (ECHEM), and the South Valley Petroleum Holding Company (GANOPE) covering all their operational subsidiaries, state-owned companies, affiliates, and joint ventures.

ENTITIES and COMPANIES should ensure that all requirements listed herein are fully understood, implemented, complied with, and always monitored, including current operations and future projects during the whole project's life cycle from feasibility to decommissioning.

	SAFETY CASE APPRAISAL GUIDELINE	
	DOCUMENT NO: EGPC-PSM-GL-013	

4. Definitions

COMPANY: Refers to any operating company, subsidiary, affiliated, or joint venture company that belongs to an ENTITY.

COMPETENT: Describes an individual with knowledge and skills deemed acceptable to perform a task. Appropriate knowledge and skill may be acquired through training, experience, qualifications, or some combination of these.

COMPETENT AUTHORITY (CA): The entity with authority to receive, assess and accept or reject Major Hazard Facilities Safety Cases. The **Safety Case Appraisal Team** is the EGPC Competent Authority for all ENTITIES. Therefore, using the Safety Case Appraisal Team and CA gives the same meaning in this guideline.

ENTITIES: Refers to the Egyptian General Petroleum Corporation (EGPC) and Oil and Gas Holding Companies, including the Egyptian Natural Gas Holding Company (EGAS), the Egyptian Petrochemicals Holding Company (ECHEM), and the South Valley Petroleum Holding Company (GANOPE).

MAJOR HAZARD FACILITY (MHF): Any processing plant, storage facility, terminal, pipeline, drilling rig, or other facility handling or storing dangerous substances or any offshore installation with major accident potential during routine and non-routine operations. A single facility is under the control of a single person (e.g., site manager, plant manager) who takes responsibility for the facility.

OPERATOR: Operator means the person who: (a) manages or controls a facility or a proposed facility and (b) has the power to direct that the whole facility be shut down. Concerning the pipeline, the person who is to have or (once the fluid is conveyed) has control over the conveyance of fluid in the pipeline.

SAFETY CASE ACKNOWLEDGEMENT: Quick completeness and data sufficiency check by the EGPC's Safety Case Appraisal Team to ensure that all main points are considered in the Design Safety Case / IADC HSE Case, and there is no major concern to be reported to the operator. The review level is not detailed as the operations Safety Case.



SAFETY CASE APPRAISAL: A detailed review process for the Safety Case by the EGPC's Safety Case Appraisal Team (the Competent Authority). The review process checks the content of the Safety Case against the requirements in the Safety Case Standard and Safety Case Appraisal Guideline. Suppose the Safety Case meets the appraisal criteria. In that case, the Safety Case shall be approved by the EGPC Safety Case appraisal authority, either by accepting the Safety Case or accepting the Safety Case with conditions.

SAFETY CASE ENDORSEMENT AUTHORITY: The highest position in EGPC. In this document, the Safety Case Endorsement Authority is EGPC's Chairman.

5. Abbreviations

ALARP	As Low As Reasonably Practicable
CA	Competent Authority
CBA	Cost Benefit Analysis
ECHEM	Egyptian Petrochemicals Holding Company
EGAS	Egyptian Natural Gas Holding Company
EGPC	Egyptian General Petroleum Corporation
FEED	Front-End Engineering Design
GAHOPE	The South Valley Petroleum Holding Company
HAZID	Hazard Identification Study
HAZOP	Hazard and Operability Study
LOPA	Layers of Protection Analysis
MAH	Major Accident Hazard
MAPP	Major Accident Prevention Policy
MHF	Major Hazard Facility
MOC	Management of Change
MOP	Ministry of Petroleum and Mineral Resources
MOPO	Matrix of Permitted Operations
PFD	Process Flow Diagram
PSM	Process Safety Management
SCE	Safety Critical Element
UTMHF	Upper Tier Major Hazard Facility

For other definitions and abbreviations, refer to the PSM Glossary of Definitions and Abbreviations Guideline (EGPC-PSM-GL-011).

	SAFETY CASE APPRAISAL GUIDELINE	
	DOCUMENT NO: EGPC-PSM-GL-013	

6. The Competent Authority Expectations

1. COMPANIES that operate an MHF shall notify the CA of the nature of their business and the quantities of dangerous substances present or likely to be present in each facility under their authority.
2. MHF Operators are expected to comply with the Safety Case Standard (EGPC-PSM-ST-002) requirements and formally communicate with the CA in Case of inquiries or any unclear instructions.
3. All submitted information and documents in the Safety Case are subject to CA review and verification by all possible means, such as interviews with the operator focal persons, employees, or on-site verifications if required.
4. Any submitted misleading or false information could lead to Safety Case rejection and expose the MHF operator to a formal investigation.
5. The MHF operators are expected to highlight any significant changes in their facilities and incorporate and highlight those changes in the Safety Case (major changes such as adding new units and new projects inside a brownfield facility shall require the CA authority notification early).
6. Where changes are planned at a facility that necessitates the operator to prepare or update a Safety Case, the operator should inform the CA at the earliest opportunity and send the revised Safety Case to the CA in advance of the modification coming into effect.
7. The MHF operator is expected to provide all assistance by conducting pre-receipt activities with the CA to agree on the requirements for the Safety Case submission.

7. Safety Case Appraisal Process

The Safety Case Appraisal process is conducted by mutual coordination between the MHF operator and the CA. The Safety Case Appraisal Team is the CA focal contact with the MHF operator. Once the MHF operator formally communicates with the CA to check whether the facility is qualified as a UTMHF, the CA shall respond through EGPC Chairman Assistant for HSE. The Safety Case Appraisal Process consists of four stages:

1. Notification.
2. Safety Case Preparation and Pre-receipt Meeting.
3. Safety Case Submission and Decision.
4. Safety Case Intervention Plan.

7.1 Safety Case Notification

The timescale for submitting Safety Case notifications to EGPC is described in full detail in the Safety Case Standard (EGPC-PSM-ST-002). The Safety Case Appraisal Team shall record all submitted notifications and provide a unique number for any submitted Upper and Lower Tier Major Hazard Facilities on the database (this number shall be used to track the facility status and the Safety Case appraisal progress). The facility tagging shall be in the form: **[ENTITY-COMPANY-SC-Unique Number]**.

7.2 Safety Case Preparation and Pre-receipt Meeting

The Safety Case preparation and pre-receipt meeting are key stages in developing the Safety Case appraisal. The objective is to ensure that the shared information meets the minimum requirements of the EGPC Safety Case Standard and that there are no significant gaps in the information presented. In this case, the Safety Case could proceed to the appraisal stage without issue. All Safety Case submissions should have a pre-receipt meeting. The Safety Case Appraisal Team and the operator should finalize the pre-receipt agreement within four weeks of the pre-receipt meeting.

7.3 Safety Case Submission and Decision

7.3.1 Safety Case Appraisal Period

Although Safety Cases could vary in their details and the depth of appraisal, the CA shall exert all possible efforts to minimize the appraisal process period assuming full cooperation from the MHF operator. In exceptional circumstances, the appraisal period could be reduced with a formal request from the MHF operator and an acceptable justification. The expected Safety Case appraisal period for each facility type is illustrated in Table 1. If many Safety Cases are submitted simultaneously, EGPC should schedule the appraisal process for these Safety Cases and notify the MHF operators of the estimated appraisal schedule.

Table 1. Safety Case Appraisal period table.

Facility	Straightforward Review Period
Existing MHF <ul style="list-style-type: none"> • First Operations Safety Case Submission. • 5-Yearly Highlighted Revisions / Updated. 	<ul style="list-style-type: none"> • Six months. • Six months.
New Facility <ul style="list-style-type: none"> • Design Safety. • Operations Safety Case. 	<ul style="list-style-type: none"> • Two Months (For acknowledgment only). • Six Months.
Drilling IADC HSE Case	<ul style="list-style-type: none"> • Two months (For acknowledgment only).

7.3.2 Safety Case Completeness Check

After the Safety Case Appraisal Team conducts the quick completeness check to ensure there is no omission of information or a requirement in the pre-receipt agreement after Safety Case completion and submission to the CA, the Safety Case Appraisal Team should determine if the Safety Case can proceed to the full appraisal process or not.

The completeness check is not an assessment, but it should typically cover the following aspects of the submitted Safety Case:

1. Relevant sections cover the key requirements of the EGPC Safety Case Standard.
2. New inclusions or revised material have been suitably identified to allow assessment.
3. Where applicable, requirements of the previous 'revision plan' or relevant actions from CA interventions have been included.
4. The extent to which the remaining requirements of the pre-receipt agreement have been incorporated.

After finishing the completeness check, the Safety Case Appraisal Team may consider the Safety Case does not contain the basic elements of a Safety Case. If this is the case, the below steps should be followed:

1. The Safety Case Appraisal Team should arrange an immediate meeting with the MHF operator, including a representative at the director level or senior site manager, to explain the shortcomings and missing information and require revision and re-submission of the Safety Case.
2. The Safety Case Appraisal Team should write to the operator a Re-Submission Notice Letter, giving the deadline for the revision and re-submission of the Safety Case within an agreed timescale, e.g., six months, detailing and highlighting revisions to be made to correct missing key information or shortcomings in the risk analysis.
3. Through Re-Submission Notice Letter, the Safety Case Appraisal Team should inform the MHF operator that revision and re-submission have been required resulting in the appraisal process being postponed.

7.3.3 Safety Case Full Assessment

Once the submitted Safety Case passes the completeness check, the Safety Case Appraisal Team shall develop the appraisal plan through an appraisal planning meeting. The objectives of the meeting should be:

- Determining the extent of the Safety Case appraisal depth.
- Determining the deadline of the assessment and conclusion timings.

- Determining the schedule of the proposed site visits and interviews with the operator's representatives.
- Signing off the target schedule and ensuring a coordinated approach by the assessors with clarity on timings and resources to be used.
- Highlighting the approach to dealing with further information requests, potential serious deficiencies, and actual significant omissions in Safety Case content.

The following factors are important to determine the depth of the Safety Case appraisal:

- The scale (inventory, vessel sizes, etc.) and nature of the hazards (hazardous properties, toxicity, flammability, hazards to the environment, etc.).
- The location of the MHF regarding external populations, environmentally sensitive receptors, and other risk-influencing factors such as flood zones.
- The density and types (vulnerability) of external populations (residences, hospitals, schools, etc.) and types of environmentally sensitive receptors.
- The number of people in the facility.
- Escalation potential (e.g., domino effects concerning neighboring establishments).
- The criticality of applied measures to achieving the claimed level of residual risk.

7.3.4 Safety Case Appraisal Decision

The objective of the Safety Case appraisal is to decide that the relevant requirements of the EGPC have been appropriately addressed and that the operator has taken the necessary measures to prevent major accidents and limit the severity of the consequences. The Safety Case appraisal's final decision could be (a) Acceptance, (b) Conditional Acceptance, or (c) Rejection, as illustrated in Table 2.

Table 2. Safety Case Appraisal decision table.

Decision	Description
Acceptance	It means that the operator's Safety Case meets the completeness, detailed data sufficiency, and ALARP demonstration acceptance criteria.
Conditional Acceptance	It means that the operator's Safety Case meets the completeness and detailed data sufficiency acceptance criteria but failed to demonstrate ALARP. However, the operator has an action plan with a specific and reasonable time frame to resolve the issues arising from the ALARP demonstration.
Rejection	It means that the operator fails to meet the completeness and detailed data sufficiency acceptance criteria or cannot provide a defined action plan to demonstrate ALARP.

There must be a conclusion meeting to conclude any Safety Case appraisal results. Before the conclusion meeting, the Safety Case Appraisal Team should:

1. Prepare a version of the appraisal record tables concerning any request for further information, proposed interventions, and proposed revision plan items.
2. Present conclusions for discussion and agree on the common elements of the conclusions letter to the operator.
3. Prepare the conclusions letter using conclusion letter templates included in Annex C. EGPC Chairman Assistant for HSE shall approve the letter in case of acceptance or conditional acceptance. However, it shall be approved by the EGPC Chairman in case of rejection.

The following items should be sent with the conclusion letter, as appropriate:

- The conclusions meeting records.
- Safety Case revision plan (where necessary).
- Intervention Plan.

7.4 Safety Case Intervention Plan

Based on the outcomes of the assessment conclusion, the CA, with the MHF operator, should prepare an intervention plan to:



- Check and verify the site conditions described in the Safety Case through site inspections.
- Review the action plan status.
- Verify the validity of the letter of acceptance.

8. Safety Case Appraisal Criteria

The appraisal criteria provide a framework that helps the MHF operator and the CA achieve a consistent and proportionate consideration of matters that may be examined during appraisal. In general, the Safety Case appraisal criteria rely mainly on two factors:

1. Detailed Data Sufficiency.
2. ALARP Demonstration.

The criteria are applied by the appraisal team against the relevant content of the Safety Case. Annex A comprises checklists to evaluate the Safety Case. In this context, criteria will be "met" when all relevant items are included and the necessary supporting information has been provided. On the other hand, criteria will be "not met" when some critical relevant items are

	SAFETY CASE APPRAISAL GUIDELINE	
	DOCUMENT NO: EGPC-PSM-GL-013	

not included, the necessary supporting information has not been provided, or the ALARP has not been demonstrated.

Regarding the Design Safety Cases, the CA should conduct completeness and data sufficiency checks based on the available data. The CA could either acknowledge the project safety status or formally raise any potential concerns, without issuing acceptance or rejection letters, to be resolved before issuing the Operations Safety Case.

8.1 Detailed Data Sufficiency

The CA may find that the submitted Safety Case lacks some important details in some sections, such as sufficient descriptions of potential MAH scenarios or the details of the available measures. The CA should highlight any part with seriously deficient data that could increase the uncertainty of the MAF operator's capability to identify or control his major accident hazards. The CA may visit the site to check whether the Safety Case's missed scenarios or measures signposted are seriously deficient before acting as appropriate.

8.2 ALARP Demonstration

The fundamental principle of risk management is that while risks cannot always be eliminated, it is possible to reduce them to a level that is ALARP so that they are tolerable because all reasonably practicable risk reduction measures have been implemented. The CA will assess the operator's ALARP demonstration against the ALARP criteria and methodology described in the ALARP Demonstration Guideline (EGPC-PSM-GL-010).

9. Failure to Submit the Safety Case



In Case an MHF operator delays in notifying the CA about facilities under his authority to submit a Safety Case, the Safety Case Appraisal Team shall formally communicate with the operator to get a written justification for that delay. The Safety Case Appraisal Team has the authority to escalate the subject to EGPC Chairman if the MHF operator is reluctant or if there were no clear and justified reasons for not submitting the Safety Case. EGPC Chairman shall formally communicate with the MHF operator to resolve the issue promptly, or they should take the necessary action.

10. Roles and Responsibilities

The success of the Safety Case development and appraisal process relies on properly identifying each party's role and responsibilities, as described in the following.

10.1 MHF Operator

- Submit the notification to EGPC and notify the relevant holding company.
- Assign a focal person to communicate with the CA.

	SAFETY CASE APPRAISAL GUIDELINE	
	DOCUMENT NO: EGPC-PSM-GL-013	

- Start preparing the Safety Case as per the Safety Case Standard (EGPC-PSM-ST-002).
- Prepare and submit a Safety Case pre-receipt document.
- Complete and submit the signed-off Safety Case report.
- Cooperate with the CA to prepare/review the intervention plan based on the type of Safety Case approval.
- Assure the accuracy and precision of all provided information in the Safety Case.
- Track and close out the improvement action plan recommendations as scheduled in the Safety Case.
- Facilitate any required logistics, such as transportation and accommodations for the Safety Case Appraisal Team, to conduct any needed site verifications.
- Arrange the pre-receipt meeting with the Safety Case Appraisal Team to validate the development roadmap.
- Secure and facilitate access to the facility documentation and interviews with the focal facility personnel, employees, and contractors.
- Communicate internally with the relevant holding company to discuss the Safety Case progress and seek its advice.

10.2 Holding Companies

- Enforce the development of the Safety Case across their COMPANIES.
- Provide any required technical and administrative support for MHF operators to develop the Safety Case.

10.3 Safety Case Approving Authority (EGPC Chairman Assistant for HSE)

- Provide Safety Case final decision (Acceptance, Conditional Acceptance, or Rejection) and approve the Safety Case acceptance and conditional acceptance letters.
- Escalate rejected Safety Cases to the Safety Case Endorsement Authority.
- Raise MHF non-conformities to Safety Case Endorsement Authority.

10.4 Safety Case Endorsement Authority (EGPC Chairman)

- Endorse Safety Case rejection letters to MHF operators.
- Enforce compliance with the Safety Case Standard requirements.
- Investigate any MHF non-conformities.

10.5 Safety Case Appraisal Team (The CA)

The Safety Case Appraisal Team (the CA) are multi-disciplinary team members that cover all aspects of the Safety Case. They represent EGPC in communications with the MHF operator. The Safety Case Appraisal Team should:

- Receive MHF notifications, identify whether the facility is either an Upper Tier or Lower Tier MHF, and notify the MHF operator accordingly.
- Participate in the pre-receipt meeting with the operator to validate the Safety Case development roadmap.
- Validate the initial completeness of submitted Safety Cases and whether they are qualified for the appraisal process or lack basic information.
- Interview the MHF operator to ensure his awareness of the Safety Case's contents.
- Manage the Safety Case conclusion meetings to announce the appraisal results and agree on the intervention plans for accepted or conditionally accepted Safety Cases.
- Sign off the initial decision (Acceptance, Conditional Acceptance, or Rejection).
- Notify the holding companies with UTMHFs under their supervision.
- Inform the holding companies about the appraisal results of the UTMHFs under their supervision.

The Safety Case Appraisal Team's typical duties:

- Assess the process description and operational conditions.
- Assess the list of hazardous material and their inventories.
- Assess the relevant drawings.
- Assess the emergency response plan (ERP).
- Assess the process safety management system.
- Assess the formal safety studies.
- Validate the identified safety critical elements (SCEs).
- Assess the SCEs' performance standards and verification schemes.
- Assess the major accident prevention policy (MAPP).
- Assess the MAH Register.
- Assess the ALARP demonstration and the improvement plan.
- Conduct site verifications when deemed required.

10.6 Safety Case Appraisal RACI Chart

The RACI chart for the Safety Case Appraisal is illustrated in Table 3, where:

- **Responsible (R):** doing the work to achieve a specified task or to complete a deliverable.
- **Accountable (A):** supervising and approving the deliverable, as well as controlling the performance of the responsible role. This role is accountable if the task fails or succeeds. It is recommended to strengthen accountability so that only one individual receives the authority to approve the task. Several employees can share some responsibilities, but accountabilities should be assigned to a single employee.
- **Consulted (C):** providing inputs and expert opinions to complete the task. This person is involved before the task is approved.
- **Informed (I):** impacted by the deliverable, which needs to be kept up to date on the task progress. This person is involved after the task is approved.

Table 3. Safety Case appraisal RACI chart.

Role	MHF Operator	Holding Company	CA	Approving Authority	Endorsing Authority
Safety Case notification.	A	C	C	C	
Define the facility type.	I	I	A	I	
Safety Case submission.	A	I	C	I	
Safety Case completeness check.	C	I	A	I	
Safety Case Appraisal.	C	I	A	I	
Safety Case Appraisal Decision.	I	I	R	A	I/C

11. Safety Case Appraisal Team Competency

The required Safety Case Appraisal Team resources shall be based upon the scope of new and revised content for the Safety Case as described within the pre-receipt agreement and reflected in the CA intervention plan for the MHF. The main characteristics of the Safety Case Appraisal Team individuals are:

- **Competence:** All team members shall be competent to conduct the Safety Case appraisal in a clear and structured approach.
- **Independence:** All team members shall be fully independent of the facility under evaluation.
- **Empowerment:** All team members shall be well-resourced.

Knowledge and experience of the techniques and methods used to determine and analyze the Safety Case issues and to judge the Safety Case adequacy (sufficiency and relevancy) are essential for appraisal team success. The competency includes the following elements.

1. Knowledge

- Knowledge and experience of the legal and safety regulatory framework.
- Knowledge and experience of specific standards, guidelines, or codes of practice.
- Experience in different engineering disciplines such as engineering design, operations, maintenance, and inspection.
- Experience in risk assessments.
- Experience in the industry related to the Safety Case under review.

2. Technical Competence

- Familiarity with the Safety Case essential components.
- Familiarity with major hazard management systems.
- Familiarity with risk assessments such as HAZID, HAZOP, LOPA, QRA, CBA, and human factor analysis.
- Familiarity with prevention and mitigation methods to prevent and mitigate the consequences of major accidents.
- Understanding of the ALARP demonstration concept.
- Familiarity with emergency response plans for major hazard scenarios.

3. Behavioral Competence

- Making appropriate judgments.
- Not being inappropriately influenced.
- Recognizing when independence is being compromised and taking proper actions.
- Integrity and trustworthiness.

4. General Skills

- Presenting and documenting findings and recommendations.
- Running meetings.
- Interpersonal skills.
- Interviewing skills.
- Physical capabilities to conduct site verifications.

12. References

- [1] Egyptian General Petroleum Corporation (EGPC), "ALARP Demonstration Guideline (EGPC-PSM-GL-010)," 2022.
- [2] Egyptian General Petroleum Corporation (EGPC), "Major Accident Hazard Management Guideline (EGPC-PSM-GL-006)," 2021.
- [3] Egyptian General Petroleum Corporation (EGPC), "Safety Case Standard (EGPC-PSM-ST-002)," 2022.
- [4] Offshore Safety Directive Regulator (OSDR), "Assessment Principles for Offshore Safety Cases," 2016.
- [5] Control of Major Accident Hazards (COMAH), "Safety Report Assessment Manual (SRAM)," 2015.
- [6] International Association of Drilling Contractors (IADC), "IADC HSE Case Guidelines for Land Drilling Units," 2019.
- [7] International Association of Drilling Contractors (IADC), "IADC HSE Case Guidelines for Mobile Offshore Drilling Units," 2019.

13. List of Annexes

- **Annex A** - Safety Case Appraisal Checklist.
- **Annex B** - Safety Case Interview Checklist.
- **Annex C** - Conclusion Letter Templates.

Annex A - Safety Case Appraisal Checklist

Note: All checklist items' specifications and requirements shall be assessed against the Safety Case Standard (EGPC-PSM-ST-002) and ALARP Demonstration Guideline (EGPC-PSM-GL-010) requirements.

A.1. General

Question	Met	Not Met	NA	Assessor Remarks
The Safety Case is signed off by the CEO/ Manager Director of the Major Hazard Facility/rig.				
The Safety Case comprises the Facility's ALARP demonstration and the company's statement of fitness.				
The Safety Case comprises any actions for further studies and why these do not prejudice the justification for continued safe operation.				
The Safety Case gives details to allow communication with the CA and identify the organizations involved in preparing it.				
The objective of the Safety Case and how the parts of the document logically lead to the endpoint are clearly outlined.				
The Safety Case summarizes the scope and facility/specific operations covered.				
The Safety Case illustrates the reason for the submission.				



A.2. MHF Description Section

Question	Met	Not Met	NA	Assessor Remarks
The Safety Case comprises a detailed process description and illustrates how the process happens in each piece of equipment inside the plant.				
The Safety Case includes the plant plot plan that shows the equipment, pipelines connected to the facility, and supporting facilities (pipe racks, structures, buildings, and roads) required for the processing facility within a battery-limit area.				
The Safety Case includes the plant process flow diagram (PFD), which indicates the general flow of plant processes and equipment and displays the relationship between major equipment of a plant facility.				
The Safety Case states the operating conditions, e.g., pressure, temperature, flow rate, composition, normal/abnormal operating ranges, design pressures, and temperatures.				
The Safety Case comprises a list of hazardous chemicals and inventory (gas, oil, LPG, condensate, etc...).				
The Safety Case includes outline or block diagrams of the facility indicating the distribution of people around the facility and accommodation, offices, process modules, control room, workshops, etc.				
The Safety Case includes a summary of all relevant national and international standards that have been applied or will be applied for the facility or the plant used in connection with the facility.				



SAFETY CASE APPRAISAL GUIDELINE



DOCUMENT NO: EGPC-PSM-GL-013

Question	Met	Not Met	NA	Assessor Remarks
The Safety Case includes the environmental conditions, e.g., prevailing winds.				
The Safety Case includes the manning philosophy and personnel location.				
The Safety Case includes plot plans of the facility and its surrounding area.				
The Safety Case describes the nature of any hazards that could be presented in the surrounding facilities and any potential domino effects between neighboring sites.				
The Safety Case includes a summary of the facility's safety systems, e.g., escape routes, lifesaving equipment, fire protection system, well controls, etc.				
The Safety Case discusses in detail the philosophy, design, and performance of each of the safety systems in the facility.				
The Safety Case describes the procedure for deciding the layout of the facility and how the areas of risk were separated and/or segregated, whether in terms of fire, explosion, or both.				
The Safety Case discusses the philosophy of isolating discrete and suitably sized sections of the process to enable the inventories of these sections to be vented to the flare or vent system in a safe and controlled manner using remotely operated valves.				
The Safety Case describes the philosophy of passive fire protection with reference where appropriate to the subdivision of the facility into areas so that a fire in one will be prevented from spreading to another.				



SAFETY CASE APPRAISAL GUIDELINE

DOCUMENT NO: EGPC-PSM-GL-013



Question	Met	Not Met	NA	Assessor Remarks
The Safety Case refers to the fire and gas detection philosophy, including layouts showing the location of the fire, heat, smoke, and gas detection and alarm systems.				
The Safety Case describes how the asset integrity and maintenance programs for Safety Critical Elements are being implemented and monitored, and the attainment of performance standards is verified and recorded.				
The Safety Case comprises the emergency shutdown and control philosophy.				
The Safety Case comprises the firefighting philosophy.				



A.3. Formal Safety Assessment Section

Question	Met	Not Met	NA	Assessor Remarks
The Safety Case comprises the facility's risk acceptance criteria.				
All included technical safety studies were conducted based on relevant references.				
The Safety Case comprises a brief description of the safety studies utilized to identify the facility's MAHs and develop the Safety Case, such as HAZID, HAZOP, QRA, and MOPO studies.				
The Safety Case comprises a list of all the facility's major accident hazards.				
The Safety Case comprises the Facility's Hazard and Effect Register (H&E).				
The Safety Case comprises a summary of the MAH Bowtie diagrams demonstrating the barriers' adequacy and detailing the health status of the barriers.				
The Safety Case comprises a summary of the SCE performance standard and details how the performance standard is implemented.				
The Safety Case comprises a summary of the safety-critical tasks and the HSE Critical Positions.				
The Safety Case comprises details of how the facility, in the operations phase, manages SCE impairment.				

A.4. PSM System Section

Question	Met	Not Met	NA	Assessor Remarks
The Safety Case comprises the company's major accident prevention policy (MAPP), signed off by the CEO/ Managing Director and the facility manager, showing top management's commitment to preventing major accidents.				
The Safety Case comprises a brief description of the company's process safety management systems.				
The Safety Case comprises the organization's risk assessment and management system, including the risk matrix and acceptance criteria.				



A.5. Emergency Response Plan (ERP) Section

Question	Met	Not Met	NA	Assessor Remarks
The Safety Case comprises the facility's emergency response plan (ERP) for each potential major accident scenario.				
The ERP section includes the following: a) List of major accident scenarios. b) Consequences of major accidents, both on-site and off-site. c) Equipment and systems installed in the plant to limit the consequences of major accidents. d) Organization, arrangements, and provisions for alerting and intervening in the event of a major accident. e) On-site and off-site resources can be mobilized. f) Maintenance and inspection of the emergency response equipment. g) Training for emergency response. h) Testing of emergency response.				
The means of escape and evacuation from the facility for each identified MAH scenario are identified in detail. For offshore facilities, this should include the location and protection of muster stations, embarkation points, escape routes, stairways, knotted ropes, ladders on legs, etc. For onshore facilities, this should include the location and protection of muster points, escape routes, stairways, and shelter arrangements.				
The Safety Case describes the emergency power system, e.g., generators, Uninterruptible Power Supplies (UPS), and				



SAFETY CASE APPRAISAL GUIDELINE



DOCUMENT NO: EGPC-PSM-GL-013

Question	Met	Not Met	NA	Assessor Remarks
lighting, and states their performance standards.				
The Safety Case describes the provision and location of the Temporary Refuge (TR) or Control Room (CR) to protect persons from the explosion, fire, heat, smoke, and toxic fumes following a major accident and the design intent concerning the integrity of the TR/CR and its means of support.				

A.6. ALARP Demonstration Section

Question	Met	Not Met	NA	Assessor Remarks
The organization has reduced its risks of accepting or demonstrating the ALARP through the formal safety studies closeout reports.				
All risks related to potential MAH scenarios have been properly assessed and reduced to the ALARP level as per the ALARP Demonstration Guideline (EGPC-PSM-GL-010).				
The output from the risk reduction workshop and cost-benefit analysis (CBA) calculations have been documented.				

A.7. Improvement Action Plan Section

Question	Met	Not Met	NA	Assessor Remarks
A Safety Case provides a plan to resolve any outstanding actions, improvements, or shortfalls identified when the Safety Case was prepared.				
There is a clear and timed action plan for all identified recommendations to maintain the risk within acceptable or ALARP regions.				

A.8. Appendices Section

Question	Met	Not Met	NA	Assessor Remarks
The Safety Case comprises Hazard and Effect Register (H&ER).				
The Safety Case comprises MAH Bowties.				
The Safety Case comprises a list of SCEs with their owner.				
The Safety Case comprises SCE's operations Performance Standard.				
The Safety Case comprises Safety Critical Tasks and HSE Critical Positions.				
The Safety Case comprises the MOPO matrix.				



A.9. Special Considerations for The Drilling IADC HSE Case

Section	Topics to be Covered	Assessor Remarks
IADC HSE Case Introduction (a general overview of the Safety Case process).	The drilling company developed the drilling IADC HSE Case per IADC requirements, and the operating company has reviewed and approved the document.	
	Drilling and exploration general managers should sign off the drilling IADC HSE Case.	
	The IADC HSE Case demonstrates that there has been effective consultation with and participation of workforce members to develop the Safety Case.	
Drilling Contractor's Safety Management System – (HSE Management).	The management system is based on the ISO management system element's structure and, in compliance with IADC requirements, contains a detailed description of the safety management system that: <ul style="list-style-type: none"> • It is comprehensive and integrated. • It provides for all activities likely to occur at or in connection with the rig. • It provides for the continual and systematic identification of hazards to the health and safety of persons at or near the facility. 	
Rig Description and Supporting Information.	The layout of the rig, including positions of primary equipment and HSE equipment and systems.	



SAFETY CASE APPRAISAL GUIDELINE

DOCUMENT NO: EGPC-PSM-GL-013



Section	Topics to be Covered	Assessor Remarks
	<p>A detailed description of the rig equipment, structures, and systems. This includes:</p> <ul style="list-style-type: none"> • Primary structure. • Drilling, completion, and well control systems. • Plant and utilities. • Fire and explosion protection. • Emergency systems. • Well testing. • Other third-party equipment. 	
	<p>Details of the examination process for the rig equipment and systems, including the certification of the equipment and systems.</p>	
	<p>Process for managing safety critical equipment and systems, including selecting and ensuring the critical equipment's health status.</p>	
<p>Risk Management.</p>	<p>A description of the process used to systematically identify, evaluate, and select the barriers that will be applied to reduce the risk for each identified hazard and source.</p>	
	<p>Hazard register listing all the hazards and sources, the estimates of the associated risks, the significance of these, and references to the barriers selected to reduce the associated risks to a tolerable level.</p>	
	<p>Bowtie diagrams for each major hazard scenario, including various causes and consequences, the prevention and mitigation barriers, and the critical task/activities required to ensure</p>	



SAFETY CASE APPRAISAL GUIDELINE



DOCUMENT NO: EGPC-PSM-GL-013

Section	Topics to be Covered	Assessor Remarks
	barriers are in place, working effectively, and their integrity is maintained.	
	A summary of operation boundaries (SOOB) – combined operations.	
Emergency Response.	Emergency response plan for each potential major accident scenario.	
	All personnel (including the person in charge) are competent to fulfill their emergency roles.	
	Drills and exercises plan to check the readiness of emergency response capabilities.	
	Details of emergency equipment and arrangements for evacuation, shelter in place, and escape.	
Performance Monitoring.	Supervisors and other line management must arrange periodic monitoring to ensure that plans and operations are monitored and measured against HSE performance.	
	Arrangements for reporting, analysis, and learning from incidents.	
	Arrangements to audit the HSE management system address major workplace hazards.	
	Arrangements for the verification of HSE critical activities/tasks and equipment/system.	

Annex - B Safety Case Interview Checklist

B.1. Sample of Interview Questions with the MHF CEO / Managing Director

Topic	Response
Familiarity with the difference between process safety and occupational health and safety.	
Critical success factors influencing process safety management.	
The CEO / Managing Director role on PSM at the site(s).	
How is process safety performance measured/ monitored in the company?	
The frequency of site visits and the impact of site tours.	
Familiarity with the regulatory requirements (at a high level), enforcement regime, and potential penalties.	
Familiarity with the core activities within the Safety Case (at a high level).	
The MAH review program determines the scope, status, implementation plans (timeframe), and resource requirements for the remedial actions.	
The elevated operating risks are associated with any outstanding remedial actions.	
Familiarity with MAPP.	
Familiarity with MAHs on site.	
Familiarity with key safety critical elements (at a high level).	
Familiarity with EGPC's guiding philosophy for the tolerance of safety risks.	
The workforce engagement programs (to build awareness of MAH risks and the influence of roles).	
Assurance programs for ensuring mechanical integrity and safety critical elements.	
Risk escalation communications.	
Appropriate resource allocation to support safe operation.	



B.2. Sample of Interview Questions with the Operations Manager

Topic	Response
The distinction between process safety and occupational health and safety.	
Measures approved/implemented by the operations manager to manage process safety risks.	
The facility provided the workers (including those from contracting companies) with the appropriate information, instruction, and training about: a) All major accident events that could occur at the facility. b) All threats that could cause, or contribute to causing, those major accidents. c) The barriers in place, their performance standards, and the means for the assurance and verification of the ongoing suitability of the barriers. d) The content and operation of the local process safety management system. e) The content of the Safety Case, including any revision to the Safety Case.	
The current versions of the safety management system, the Safety Case, and the emergency plan are readily accessible to all workers at the facility (including contracting companies).	
The operations manager's role influences PSM at the site(s).	
The role of the process safety committee/department.	
Familiarity with the regulatory requirements (at a high level), enforcement regime, and potential penalties.	
Findings and action plans associated with historical regulatory enforcement activities.	
The strategic role, status, and execution plan for the Safety Case program.	
The core activities within the MAH review program.	



SAFETY CASE APPRAISAL GUIDELINE



DOCUMENT NO: EGPC-PSM-GL-013

Topic	Response
The MAH review program determines the scope, status, implementation plans (timeframe), and resource requirements for the remedial actions.	
The elevated operating risks are associated with any outstanding remedial actions.	
Familiarity with MAHs on site.	
Knowledge of MOPO.	
Familiarity with safety critical elements.	
Access to and familiarity with MAH Bowtie diagrams.	
Familiarity with EGPC's guiding philosophy for the tolerance of safety risks.	
Significant incidents and the embedding of lessons learned.	
Assurance programs for appraising critical operations.	
Risk escalation communications.	



B.3. Sample of Interview Questions with the Plant Manager

Topic	Response
The distinction between process safety and occupational health and safety.	
How is process safety performance measured/ monitored in the facility?	
The facility provided the workers (including those from contracting companies) with the appropriate information, instruction, and training concerning: a) All major accident events that could occur at the facility. b) All threats that could cause, or contribute to causing, those major accidents. c) The barriers in place, their performance standards, and the means for the assurance and verification of the ongoing suitability of the barriers. d) The content and operation of the local process safety management system. e) The content of the Safety Case, including any revision to the Safety Case.	
The current versions of the safety management system, the Safety Case, and the emergency plan are readily accessible to all workers at the facility (including contracting companies).	
The influence of the plant manager's role on PSM at the site(s).	
The role of the process safety committee/department.	
Familiarity with the regulatory requirements (at a high level), enforcement regime, and potential penalties.	
Findings and action plans associated with historical regulatory enforcement activities.	
The MAH revision program's strategic role, status, and execution plan.	
The core activities within the Safety Case program.	



SAFETY CASE APPRAISAL GUIDELINE



DOCUMENT NO: EGPC-PSM-GL-013

Topic	Response
The MAH review program determines the scope, status, implementation plans (timeframe), and resource requirements for the remedial actions.	
The elevated operating risks are associated with any outstanding remedial actions.	
Familiarity with the MAHs on site.	
Familiarity with safety critical elements.	
Access to and familiarity with MAH Bowtie diagrams.	
Familiarity with EGPC's guiding philosophy for the tolerance of safety risks.	
Workforce engagement programs (to build awareness of MAH risks and the influence of roles).	
Process safety performance history for the location.	
Assurance programs for ensuring mechanical integrity and safety-critical hardware.	
The role of Safety Case in MOC.	
The need for integrity in process knowledge management.	
Risk escalation communications.	
Appropriate resource allocation to support Safety operations.	



B.4. Sample of Interview Questions with the Engineering/Technical Manager

Topic	Response
The distinction between process safety and occupational health and safety.	
The influence of the engineering/technical manager's role on PSM at the site(s).	
Familiarity with regulatory requirements, enforcement regimes, and potential penalties.	
The status and execution plan for the Safety Case program.	
How are process safety risks addressed in greenfield developments?	
How are process safety risks managed when any plant change is made?	
The core activities within the Safety Case program.	
Familiarity with MAHs on site.	
Familiarity with safety critical elements.	
Access to and familiarity with MAH Bowtie diagrams.	
Familiarity with EGPC's guiding philosophy for the tolerance of safety risks.	
Critical studies to evaluate risk acceptability.	
Significant incidents and the embedding of lessons learned.	
The need for integrity in process knowledge management.	
The detailed aspects of the MOC processes.	
The detailed aspects of the processes for managing Process knowledge.	
Risk escalation communications.	



B.5. Sample of Interview Questions with the HSE Manager

Topic	Response
The influence of the HSE manager's role on PSM at the site(s).	
The role of the process safety committee/department.	
Regulatory requirements, enforcement regime, and potential penalties.	
Findings and action plans associated with historical regulatory enforcement activities.	
HSE Reporting obligations.	
The strategic role, status, and execution plan for the Safety Case program.	
The core activities within the Safety Case program (at a high level).	
The MAH review program determines the scope, status, implementation plans (timeframe), and resource requirements for the remedial actions.	
The elevated operating risks are associated with any outstanding remedial actions.	
The component elements of the Safety Case program.	
MAPP details and its effectiveness.	
MAHs on site.	
Safety critical elements.	
Access to and familiarity with MAH Bowtie diagrams.	
EGPC's guiding philosophy for the tolerance of safety risks.	
Local workforce engagement programs (to build awareness of MAH risks and the influence of roles).	
Process safety performance history for the location.	
Significant incidents and the embedding of lessons learned.	
The detailed aspects of the SCE management program.	
The role of Safety Case in MOC.	
Engagement with the workforce on process safety.	
Risk escalation communications.	



B.6. Sample of Interview Questions with the Process Safety Lead

Topic	Response
The influence of the process safety lead engineer's role on PSM at the site(s).	
The role of the process safety committee/department.	
Familiarity and comprehension of good PSM practice reference sources.	
Regulatory requirements enforcement regime and potential penalties.	
Findings and action plans associated with historical regulatory enforcement activities.	
PSM reporting obligations.	
The strategic role, status, and execution plan for the Safety Case program.	
The core activities within the Safety Case program.	
The MAH review program determines the scope, status, implementation plans (timeframe), and resource requirements for the remedial actions.	
The elevated operating risks are associated with any outstanding remedial actions.	
The Safety Case program component elements and each element's role.	
The detailed methodologies of each activity of the Safety Case and underlying theory.	
MAPP details and its effectiveness.	
MAHs on site.	
Safety critical elements.	
Process safety management processes.	
Access to and familiarity with MAH Bowtie diagrams.	
Detailed methodologies employed to identify MAH, SCE, and critical management processes	
EGPC's guiding philosophy for the tolerance of safety risks.	
Local workforce engagement programs (to build awareness of MAH risks and the influence of roles).	
Critical studies to evaluate risk acceptability.	
Process safety performance history for the location.	
Significant incidents and the embedding of lessons learned.	



SAFETY CASE APPRAISAL GUIDELINE



DOCUMENT NO: EGPC-PSM-GL-013

Topic	Response
Assurance programs for ensuring mechanical integrity and safety-critical hardware.	
Escalation and monitoring of critical deficiencies and safeguarding measures.	
The detailed aspects of the SCE management program	
The detailed aspects of the mechanical integrity (MI) program.	
The detailed aspects of the internal audit program.	



B.7. Sample of Interview Questions for the Asset Integrity /Maintenance Managers

Topic	Response
The distinction between process safety and occupational health and safety.	
The influence of the asset integrity/maintenance manager's role on PSM at the site(s).	
The presence of an asset integrity system and program in place includes all SCEs and a system for managing the integrity of SCE (or: are SCEs in the asset register)?	
The presence of an asset register.	
Familiarity with regulatory requirements (at a high level), enforcement regimes, and potential penalties.	
The strategic role, status, and execution plan for the Safety Case program.	
The core activities within the Safety Case program (at a high level).	
The MAH review program determines the scope, status, implementation plans (timeframe), and resource requirements for the remedial actions.	
MAHs on site.	
Safety critical elements.	
Familiarity with MOPO.	
Access to and familiarity with MAH Bowtie diagrams.	
Familiarity with EGPC's guiding philosophy for the tolerance of safety risks.	
Significant incidents and the embedding of lessons learned.	
Assurance programs for ensuring mechanical integrity and safety-critical hardware.	
The detailed aspects of the SCE management program.	
The detailed aspects of the MOC processes.	
Risk escalation communications.	

Annex C - Conclusion Letter Templates

EGPC Safety Case Letter of Acceptance

MHF Name; Safety Case No: xxxxxxxx

Attention To: **Company Focal Point of Communication**

Dear Sirs,

Following the appraisal of the Safety Case submitted on **xx/xx/xxxx**, I am pleased to inform you that the Egyptian Petroleum Corporation (EGPC) is satisfied with the Safety Case made out in the document, including those revisions to the document made during the appraisal.

Please note that EGPC requires operator's installations to ensure that the procedures and arrangements set out in an accepted Safety Case are followed. In addition, any revisions, which make a material change to the Safety Case, should be submitted to the EGPC per Safety Case Standards and guidelines requirements.

Where appropriate, you are recommended to amend the Safety Case to include any revisions made during the assessment to ensure the final document fully reflects the assessment process and that the procedures and arrangements prescribed in the Safety Case are up to date.



This acceptance indicates satisfactory documentary evidence you presented under EGPC requirements.

Following the Safety Case acceptance, the Competent Authority may verify compliance with relevant Safety Case Standard requirements and according to the agreed intervention plan.

You are reminded that the responsibility for managing process safety and HSE and continuing to control major accident hazards and risks on the installation remains a matter for you.

With Regards,

EGPC Chairman Assistant for HSE

 EGPC	SAFETY CASE APPRAISAL GUIDELINE	
	DOCUMENT NO: EGPC-PSM-GL-013	

EGPC Safety Case Letter of Conditional Acceptance

MHF Name; Safety Case No: xxxxxxxx

Attention To: **Company Focal Point of Communication**

Dear Sirs,

Following the appraisal of the Safety Case submitted on **xx/xx/xxxx**, I would like to inform you that the Egyptian Petroleum Corporation (EGPC) is satisfied with the Safety Case made out in the document in terms of complying with the minimum requirements of EGPC Safety Case Standard. However, it doesn't meet the ALARP demonstration requirements.

Based on your action plan raised to meet the ALARP demonstration requirements, this is a conditional acceptance that the documentary evidence you presented per EGPC requirements is satisfactory.

Please note that EGPC requires operators or owners of installations to ensure that the procedures and arrangements set out in an accepted Safety Case are followed. In addition, any revisions, which make a material change to the Safety Case, should be submitted to the EGPC per EGPC Safety Case Standard requirements.

Where appropriate, you are recommended to amend the Safety Case to include any revisions made during the assessment to ensure the final document fully reflects the assessment process and that the procedures and arrangements prescribed in the Safety Case are up to date.

Following the Safety Case acceptance, the Competent Authority may verify compliance with relevant statutory requirements and according to the agreed intervention plan.

You are reminded that the responsibility for managing process safety and HSE and continuing to control major accident hazards and risks on the installation remains a matter for you.

With Regards,

EGPC Chairman Assistant for HSE

EGPC Safety Case Letter of Rejection

MHF Name; Safety Case No: xxxxxxxx

Attention To: **Company Focal Point of Communication**

Dear Sirs,

Following the appraisal of the Safety Case submitted on **xx/xx/xxxx**, I regret to inform you that the Safety Case made out in the document doesn't meet the minimum requirements of the Egyptian Petroleum Corporation (EGPC) Safety Case Standard.

You are recommended to amend the Safety Case now to consider the following actions:

-

In case you fail to meet the minimum requirements of the EGPC Safety Case Standard requirements, EGPC will not be able to provide a license to operate (or EGPC will stop the license to operate) for your MHF.

With Regards,

EGPC Chairman
