----ENEMALTA DPS IPPC APPLICATION - FORM C----

APPENDIX F – Enemalta Safety Management System

0466 – Enemalta DPS IPPC Application

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APPENDICES REFERENCE

Reference	Document Title
Appendix A	Reference Drawings
Appendix B	Best-Available-Technology Conclusions
Appendix C	Material Safety Data Sheets
Appendix D	Maintenance of Tank Bunds
Appendix E	Enemalta Safety Report
Appendix F	Enemalta Safety Management System
Appendix G	Enemalta Emergency Response Plan
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SAFETY MANAGEMENT SYSTEM

ENEMALTA PLC

AS REQUIRED BY LN 179/2015 CONTROL OF MAJOR ACCIDENT HAZARDS REGULATIONS

Barcelona, July 27th, 2016

Report nº.: 02-901-200560-16210

Review 0.3

Prepared for:

Enemalta plc

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REVISION CONTROL

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0	First issue	September 2015
0.1	General draft review and completion	December 2015
0.2	Draft review	January 2016
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CONTENTS

SCOPE

This Report collects the procedures and documents from the ENEMALTA Delimara Power Station (hereafter DPS) Safety Management System and ensures the fulfilment of the requirements of the Seveso III Directive [1], which has been implemented into the Maltese law as the Control of Major Accident Hazard Regulations 2015 ("COMAH"). The enforcing body for this law is the Competent Authority ("CA") set up jointly by the Occupational Health and Safety Authority ("OHSA"), the Malta Environment and Planning Authority ("MEPA") and the Civil Protection Department of the Ministry for Justice and Home Affairs ("CPD"). The Seveso III Directive has been implemented into the Maltese law by the L.N. 179 of 2015.

As is mentioned in the Seveso Directive, for the purpose of implementing the operator's major-accident prevention policy and safety management system, the elements to be taken into account are the following ones:

a. the major accident prevention policy should be established in writing and should include the operator's overall aims and principles of action with respect to the control of major-accident hazards
b. the safety management system should include the part of the general management system which includes the organizational structure, responsibilities, practices, procedures, processes and resources for determining and implementing the major-accident prevention policy

The procedures included in the Annexure also comply with the OHSAS 18001:2007 standard, which is referred to the whole management of all the Occupational Health and Safety. For this reason, the procedures have been originally organized in a different structure and may include additional content.

This Report for DPS facilities has been prepared on behalf of ENEMALTA plc by SGS and has been reviewed and approved by ENEMALTA plc.

TERMS AND DEFINITIONS

For the purposes of the Company's OHS Policy, the standard terms used within Seveso III Directive and BS 8800:2004 shall apply. The integrated terms and definitions shall be interpreted as defined below in all documents.

Acceptable Risk	Risk that has been reduced to a level that can be tolerated by the organization having regard to its legal obligations and its own OH&S policy (3.16).
Audit	Systematic, independent and documented process for obtaining "audit evidence" and evaluating it objectively to determine the extent to which "audit criteria" are fulfilled. [ISO 9000:2005, Item 3.9.1] *Note 1:* *Independent does not necessarily mean external to the organization. In many cases, particularly in smaller organizations, independence can be demonstrated by the freedom from responsibility for the activity being audited* *Note 2:* *For further guidance on "audit evidence" and "audit criteria", see ISO 19011.*
Continual Improvement	Recurring process of enhancing the OH&S management system (3.13) in order to achieve improvements in overall OH&S performance (3.15) consistent with organization's (3.17) OH&S policy (3.16). *Note 1:* *The process need not take place in all areas of activity simultaneously.* *Note 2:* *Adapted from ISO 14001:2004, Item 3.2.*
Corrective Action	Action to eliminate the cause of a detected nonconformity (3.11) or other undesirable situation. [ISO 9000:2005, Item 3.6.5] *Note 1:* *There can be more that one cause for nonconformity.* *Note 2:* *Corrective action is taken to prevent recurrence whereas preventive action (3.18) is taken to prevent occurrence.*
Document	Information and its supporting medium. [ISO 14001:2004, Item 3.4] *Note:* *The medium can be paper, magnetic, electronic or optical computer disk, photograph or master sample, or a combination thereof.*
Establishment	the whole location under the control of an operator where dangerous substances are present in one or more installations, including common or related infrastructures or activities; establishments are either lower-tier establishments or upper-tier establishments
Hazard	Source, situation, or act with a potential for harm in terms of human injury or ill health (3.8), or a combination of these.

Hazard Identification	Process of recognizing that a hazard (3.6) exists and defining its characteristics
Health	Identifiable, adverse physical or mental condition arising from and / or made worse by a work activity and / or work-related situation.
Incident	Work-related event(s) in which an injury or ill health (3.8) (regardless of severity) or fatality occurred, or could have occurred. *Note 1:* *An accident is an incident which has given rise to injury, ill health or fatality.* *Note 2:* *An incident where no injury, ill health, or fatality occurs may also be referred to as a "near-miss", "near-hit", "close call" or "dangerous occurrence".* *Note 3:* *An emergency situation (see 4.4.7) is a particular type of incident.*
Installation	a technical unit within an establishment and whether at or below ground level, in which dangerous substances are produced, used, handled or stored; it includes all the equipment, structures, pipework, machinery, tools, private railway sidings, docks, unloading quays serving the installation, jetties, warehouses or similar structures, floating or otherwise, necessary for the operation of that installation
Interested Party	Person or group, inside or outside the workplace (3.23), concerned with or affected by the OH&S performance (3.15) of an organization (3.17).
Nonconformity	Non-fulfilment of a requirement. [ISO 9000:2005, Item 3.6.2; ISO 14001, Item 3.15] *Note:* *A nonconformity can be any deviation from:* *• Relevant work standards, practices, procedures, legal requirements, etc.* *• OH&S management system (3.13) requirements.*
Occupational Health and Safety (OH&S)	Conditions and factors that affect, or could affect the health and safety of employees or other workers (including temporary workers and contractor personnel), visitors, or any other person in the workplace (3.23). *Note:* *Organizations can be subject to legal requirements for the health and safety of persons beyond the immediate workplace, or who are exposed to the workplace activities.*
OH&S	Overall intentions and direction of an organization's (3.17) related to its OH&S performance (3.15) as formally expressed by top management. *Note 1:* *The OH&S policy provides a framework for action and for the setting of OH&S objectives. (3.14).* *Note 2:* *Adapted from ISO 14001:2004, Item 3.11.*

OH&S Management System	Part of an organization's (3.17) management system used to develop and implement its OH&S policy (3.16) and manage its OH&S risks (3.21). *Note 1:* *A management system is a set of interrelated elements used to establish policy and objectives and to achieve those objectives.* *Note 2:* *A management system includes organizational structure, planning activities (including, for example, risk assessment and the setting of objectives), responsibilities, practices, procedures (3.19), processes and resources.* *Note 3:* *Adapted from ISO 14001:2004, Item 3.8.*
OH&S Objective	OH&S goal, in term of OH&S performance (3.15), that an organization's (3.17) sets itself to achieve. *Note 1:* *Objectives should be qualified wherever practicable. Note 2:* *The item 4.3.3 requires that OH&S objectives are consistent with the OH&S policy (3.16).*
OH&S Performance	Measurable results of an organization's (3.17) management of its OH&S risks (3.21). *Note 1:* *OH&S performance measurement includes measuring the effectiveness of the organization's controls.* *Note 2:* *In the context of OH&S management systems (3.13) OH&S policy (3.16), OH&S objectives (3.14), and OH&S performance requirements.*
Operator	any natural or legal person who operates or controls an establishment or installation or, where provided for by national legislation, to whom the decisive economic or decision-making power over the technical functioning of the establishment or installation has been delegated
Organization	Company, firm, enterprise, authority or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration. [ISO 14001:2004, Item 3.16] *Note:* *For organizations with more than one operating unit, a single operating unit may be defined as an organization.*
Other establishment	a site of operation that falls within the scope of this Directive, or a lower-tier establishment that becomes an upper-tier establishment or vice versa, on or after 1 June 2015 for reasons other than those referred to in point 5

Preventive Action	Action to eliminate the cause of a potential nonconformity (3.11) or other undesirable potential situation. [ISO 9000:2005, Item 3.6.4] *Note 1:* *There can be more than one cause for a potential nonconformity.* *Note 2:* *Preventive action is taken to prevent occurrence whereas corrective action (3.4) is taken to prevent recurrence.*
Procedure	Specified way to carry out an activity or a process. [ISO 9000:2005, Item 3.4.5] *Note:* *Procedure can be documented or not.*
Risk	Combination of the likelihood of an occurrence of a hazardous event or exposure(s) and the severity of injury or ill health (3.18) that can be caused by the event or exposure(s).
Risk Assessment	Process of evaluating the risk(s) (3.21) arises from a hazard(s), taking into account the adequacy of any existing controls, and deciding whether or not the risk(s) is acceptable.
Workplace	Any physical location in which work related activities are performed under the control of the organization. *Note:* *When giving consideration to what constitutes a workplace, the organization (3.17) should take into account the OH&S effects on personnel who are, for example, travelling or in transit (e.g.: driving, flying, on boats or trains), working at the premises of a client or customer, or working at home.*

1. MAJOR ACCIDENT PREVENTION POLICY (MAPP)

Enemalta plc's overall Mission Statement states: "*We provide cleaner, safer and sustainable energy solutions, whilst striving to meet and exceed our customers' expectations by empowering our employees and providing them with development opportunities".*

Enemalta recognises the potential for major accidents to occur at its operations and is committed to the highest standards to provide a high level of protection to its employees, contractors, visitors, neighbours, other stakeholders and the environment.

Enemalta has committed itself to the preservation of the environment, health, and security of all who work in the organisation, the facilities, and the wellbeing of all nearby communities. Enemalta will provide all necessary human and material resources to achieve the objectives of this policy.

Enemalta aims not only to be compliant with all regulatory and legal requirements but to incorporate as well Best Practices adopted within relevant European or world-wide industries, in particular fossil-fuelled power generation. Furthermore, the Company commits itself to the principle of "continuous improvement" in the area of major hazards by engaging in, periodical reviews to assess the company's performance in terms of safety and the level of achievement of pre-defined targets. Any opportunities for improvement will be identify and implement. Enemalta shall pursue this commitment through a workable policy based upon the following operating principles:

- Developing and maintaining a culture that is committed to achieving a high standard of safety and environmental performance and involving staff at all levels in developing and monitoring the SMS.
- Ensuring that an effective organization exists for the management of major hazards so that responsibilities for the management of major hazards are clearly defined and that the individuals, who carry these responsibilities, including contractors, are properly selected and trained and are held accountable for their performance.
- Providing necessary training, information, instruction and supervision to employees at all levels, and, when applicable, to the Company's contractors.
- Defining procedures for systematically identifying the major hazards arising at all stages in the life cycle of the plant and assessing their likelihood and severity and ensuring that these procedures are fully implemented and that appropriate follow up action is taken.
- Adopting procedures and instructions for the safe operation and maintenance of plant, processes and equipment.
- Controlling modifications to plant equipment, processes, storage facilities, and designs of new installations with the aim of ensuring major hazard risks are as low as is reasonably practicable.

- Identifying foreseeable emergencies by systematic analysis and preparing, testing and periodically reviewing emergency plans.
- Continually monitoring safety and environmental performance in order to assess compliance with the objectives set out in the MAPP and the SMS and to identify and implement corrective actions where necessary.

Enemalta management and employees will visibly and rigorously support the implementation of this policy.

Marsaxlokk, Malta, date of signature
Ing. Ismail D'Amato, Manager Generation, signature

2. SAFETY MANAGEMENT SYSTEM (SMS)

According to the aim of the Seveso Directive, the following issues shall be addressed by the Safety Management System (SMS):

1. Organisation and personnel - Identifies the roles and responsibility of those involved in the management of major hazards, identifies and provides for their training needs and involves both staff and contractors.
2. Identification and evaluation of major hazards - Systematically identifies and evaluates major hazards which may arise at the site.
3. Operational control - Implements procedures and instructions for safe operation, taking into account maintenance of plant, processes, equipment and temporary stoppages.
4. Management of change - Implements procedures for planning modifications to the operations or processes, or the design of new installations.
5. Planning for emergencies - Identifies foreseeable emergencies and tests and reviews emergency plans.
6. Monitoring performance — Monitors the performance in meeting these objectives.
7. Audit and review - Provide for systematic audit, review and updating of the MAPP and SMS.

The SMS is structured around seven key points, with the final aim of controlling the risk through a closed and permanently optimized lifecycle.

2.1. Organisation and Personnel

In order to fulfil the Seveso III agreements, DPS shall ensure that:

- The organizational structure is appropriate to minimise the risk of a major accident and to minimise the consequences should one occur.
- All employees are made aware of the potential for major accidents and are trained, where relevant, in procedures needed to ensure that policy objectives are met.
- All employees are aware of their responsibilities in the management of major accidents and are selected and trained to ensure that they have the necessary skills and experience to perform their duties. The responsibilities of management and employees for major accident prevention are set out in written procedures

Responsibility for setting training schedules for employees and contractors lies with the Manager of the facilities or his nominee and is responsible for ensuring that training is carried out in accordance to the training schedule.

Evidence of the fulfilment of this obligation may be found in the procedures shown in the following table, for each single item within the requirement:

EXTENDED CONTENTS	CORRESPONDING PROCEDURES
i. Description of the roles and responsibilities of the organizational structure and detailed operating procedures that affect the facilities safety and production processes	MP 9 – SMS roles and responsibilities
ii. Definition of the training needs of personnel involved in the prevention and management of major hazards at all organizational levels as well as the organization of training activities and staff participation.	MP 6 – Competence, training and awareness MP 2 – Suppliers and contractors management procedure MP 16 – Access control procedure MP 17 – Stakeholders Co-ordination procedure
iii. Identification, by the establishment owner, of the necessary skills and capabilities of their staff, ensuring continuous training for workers and subcontractors on the procedures, instructions and working methods.	MP 9 – SMS roles and responsibilities MP 2 – Suppliers and contractors management procedure MP 17 – Stakeholders Co-ordination procedure

EXTENDED CONTENTS	CORRESPONDING PROCEDURES
iv. Description of the organisation chart, chain of command development and responsibility as well as their interrelations, especially in regard to communication lines between departments and staff of the establishment.	MP 9 – SMS roles and responsibilities MP 2 – Suppliers and contractors management procedure MP 17 – Stakeholders Co-ordination procedure
v. Definition of roles, responsibility, accountability, authority and interrelation of all staff members who perform work affecting safety, especially in terms of providing resources for the development and safety management system implementation, knowledge of risks and compliance with major accidents prevention policy, corrective actions or improvements, control of abnormal situations, training needs and management effectiveness, and coordination of the system implementation including reporting as required.	MP 9 – SMS roles and responsibilities MP 2 – Suppliers and contractors management procedure MP 17 – Stakeholders Co-ordination procedure MP 6 – Competence, training and awareness
vi. Establishment of procedures to ensure the employees, contractors or others participation who may be present in the facilities both in determining the safety policy and its implementation.	MP 6 – Competence, training and awareness MP 2 – Suppliers and contractors management procedure MP 17 – Stakeholders Co-ordination procedure

2.2. Identification & Evaluation of Major Hazards

The company's policy objectives are to ensure that:

- The levels of risk are reduced to 'as low as reasonably practicable' (ALARP).
- Major hazards arising from normal and abnormal operations are identified and their likelihood and severity assessed
- The identification and evaluation of hazards covers all phases of the operations including storage, product transfer and control of emissions to the environment.
- Hazard identification extends to evaluating the effects of events originating outside the site, including risks from abnormal meteorological conditions, flooding, power failure, seismic activity and from aircraft impact.
- Identification of major hazards, their possible consequences and prevention and control measures are detailed in the SMS.
- The results of such risk assessments are analysed and areas for improvement identified, prioritised and scheduled.

The responsibility for managing the process of hazard identification and risk assessment lies with the Manager of the facilities.

Evidence of the fulfilment of this obligation may be found in the procedures shown in the following table, for each single item within the requirement:

EXTENDED CONTENTS		CORRESPONDING PROCEDURES
vii.	Details of the methodology developed for risk identification and systematic evaluation arising from the establishment activity and of the substances and materials handled or produced, analyzing the possible consequences in the facilities and neighbouring areas, including procedures for defining measures both to prevent accidents and to control its effects.	MP 15 – Generic Hazard Management MP 13 – Major Hazard Identification MP 18 – Construction Hazards Management MP 14 – Major Accident Risk Assessment
viii.	Development of a procedure for determining the elements exposed to risks that may be a source of major accidents, and include the media for the constant identification of new potential hazard sources not initially contemplated or the modification of existing.	MP 13 – Major Hazard Identification MP 18 – Construction Hazards Management
ix.	Assessment of skills, knowledge and resources to develop and implement appropriate procedures under the safety management system.	MP 6 – Competence, training and awareness MP 13 – Major Hazard Identification MP 18 – Construction Hazards Management

EXTENDED CONTENTS	CORRESPONDING PROCEDURES
x. The risk identification and assessment is considered at all operation stages of the establishment, from project stage until decommissioning, including potential hazards which are produced or those identified in the processes operating conditions (routine or non-routine operations, especially set-up operation, maintenance and stoppages), incidents and possible emergencies, SMS failures, decommissioning risks and other external risks such as natural (adverse weather conditions, floods, earthquakes), transport operations, etc.	MP 15 – Generic Hazards Management MP 13 – Major Hazard Identification MP 18 – Construction Hazards Management MP 14 – Major Accident Risk Assessment
xi. It is necessary to establish a procedure to review the methodology of risk identification and assessment based on the findings of incidents and accidents that may occur, of operating experience (own and other similar installations), and on the findings of inspections and safety audits.	MP 11 - Reporting and investigation of work related injuries, ill-health and diseases MP 12 - Reporting and investigation of Major accidents, incidents and Near Misses MP 13 – Major Hazard Identification

2.3. Operational Control

The company's policy is to ensure that:

- The risk of incidents with the potential for accidental damage to people or the environment is minimised, by exercising control over all aspects of the company's operations.
- Operating Procedures including maintenance are adopted and implemented.
- Operating Procedures and Works Instructions are reviewed on a regular basis.
- Operating Procedures and Works Instructions are developed in co-operation with the people who are required to follow them.

The responsibility for managing the operational control and the authorisations of the permits-to-work lies with the Site Manager or his nominee – typically delegated to an engineer.

Evidence of the fulfilment of this obligation may be found in the procedures shown in the following table, for each single item within the requirement:

EXTENDED CONTENTS		CORRESPONDING PROCEDURES
xii.	Development of procedures and instructions in order to ensure facilities, processes, equipment and temporary stoppages safe design and operation. Determining of necessary work practices for main safety activities, at least in the operating steps described in the previous section	Several procedures covering the critical elements as shown in the table below.
xiii.	In the procedures, instructions and working methods determination, the cooperation between people who must carry out them it is contemplated, ensuring that content is easily understood and easily put in practice	Several procedures covering the critical elements as shown in the table below.
xiv.	Written procedures are available to all staff and personnel involved, the procedures are periodically evaluated to ensure its operability	Several procedures covering the critical elements as shown in the table below.

EQUIPMENT	CRITICAL ELEMENTS	OPERATION	MAINTENANCE	INSPECTION
QUAY / TANKERS / MOORING	MOORINGS SIMULTANEOUS OPERATIONS Shipments are planned in such a way so as not to have simultaneous unloading operations on the quay.	N/A	N/A	N/A
FO/DO UNLOADING	ARM HOSE	SOP DPS 33 - Fuel discharge DPS Phase 1 Common Fuel treatment SOP No. 02 - Work instruction for DPS diesel unloading DPS Phase 1 Common Fuel treatment SOP No. 03 - Work instruction for HFO unloading transfer	DPS WI 18 - Maintenance on Diesel Oil Unloading Line Procedure	SOP DPS 28 - Fuel Transfer Lines Management and Inspections
PIPELINES	RELIEF VALVE PIPE BRIDGES AND OTHER PIPELINES	N/A	DPS WI 18 - Maintenance on Diesel Oil Unloading Line Procedure	SOP DPS 28 - Fuel Transfer Lines Management and Inspections
TANK	HIGH LEVEL TRANSMITTER	N/A	DPS WI 22 - Remote Tank levels Procedure	SOP DPS 17 - Tank Area Bund Wall
PUMPS / TRANSFER OPERATIONS	PRESSURE TRANSMITTER PSV	DPS Phase 1 Common Fuel treatment SOP No. 01 - Work instruction for fuel oil plant network	SOP No. 01 - Work instruction for fuel oil plant network Note: Maintenance is carried out when a malfunction occurs on the operation of the pump.	SOP No. 01 - Work instruction for fuel oil plant network

EQUIPMENT	CRITICAL ELEMENTS	OPERATION	MAINTENANCE	INSPECTION
D3 CENTRIFUGES / D2 CENTRIFUGES / TREATMENT	PRESSURE TRANSMITTER OVERSPEED TRANSMITTER TEMPERATURE TRANSMITTER	OEM Manuals for Alfa Laval Heavy Fuel Oil Separators and Veronesi Gasoil separators.	DPS WI 19 - Maintenance on Fuel Oil Separators Procedure	N/A
COMBUSTION ENGINES	GAS DETECTION OVERSPEED TRANSMITTER VIBRATION TRANSMITTER	BWSC operators manuals	Wartsila manuals	DPS WI 23 - D3 Engine Safety Checks Procedure
EXHAUST GAS BOILERS	PSV PRESSURE TRANSMITTER TEMPERATURE TRANSMITTER	BWSC erection and operators manuals	Aalborg manuals DPS WI 20 - Confined Space Procedure	DPS WI 17 - D3 Exhaust Gas Boilers Safety Checks
INTERCEPTORS	INTERCEPTOR	SOP DPS 9 - Interceptor Cleaning	SOP DPS 30 - Interceptor Maintenance	SOP DPS 10 - Interceptor Inspection
OTHER CHEMICALS	NO RELEVANT CRITICAL ELEMENTS	SOP DPS 23 - Chemical Procurement Storage and Handling	SOP DPS 18 - Transformer Bund and Reservoir Inspection, Maintenance and Cleaning	SOP DPS 18 - Transformer Bund and Reservoir Inspection, Maintenance and Cleaning
FIRE DETECTION / FIRE FIGHTING	EXTINGUISHERS ALARM TRANSMITTER DELUGE/SPRINKLERS HYDRANTS FIRE HOSES PUMPS FIRE DOORS GAS FIXED SYSTEM BREATHING APPARATUS OTHER PORTABLE FIRE EQUIPMENT	WI 12 – Servicing of Fire Extinguishers	DPS WI 19 - Maintenance on Fire System Procedure	All equipment related to fire detection and fire fighting is carried out by third party through a contract DPS Fire Planner DPS Fire Templates

2.4. Management of Change - MOC

DPS policy objectives are to ensure that:

- Procedures are adopted to achieve the Management of Change objectives in respect of changes capable of affecting the control of major accidents.
- Appropriate post change review procedures are defined and implemented
- Management of change covers both permanent and temporary changes and also includes urgent operational changes.
- Any new installations or storage facilities shall be installed in accordance with specific procedures.

The responsibility for managing of changes lies with qualified engineers personnel under the authorisation of the Manager of the facilities

Evidence of the fulfilment of this obligation may be found in the procedures shown in the following table, for each single item within the requirement:

EXTENDED CONTENTS		CORRESPONDING PROCEDURES
xv.	Development of the necessary procedures for the planning and control of the changes affecting the establishment, both people and facilities, and considering the external circumstances that may affect the control of major hazards.	MP 19 – MOC
xvi.	Prior to develop a change will be considered their nature, assignment of responsibilities, identification and associated documentation, preliminary risk analysis might involve the definition and implementation of security measures and procedures subsequent evaluation and monitoring mechanisms.	MP 19 – MOC
xvii.	The management of change procedures will be considered during the design and construction of new installations and processes.	MP 19 – MOC MP 2.- Suppliers and contractors management procedures

2.5. Planning for Emergencies - ERP

The company's policy is that:

- Operations are carried out in a manner, which serves to protect the community and the company employees from injury or illness and which avoids damage to the environment. This policy extends to protection from major hazards.
- An Emergency Response Plan has been prepared and maintained, which details the required response of the company personnel in the event of a major accident.
- The emergency plan includes arrangements for contacting the emergency services and those people in the surrounding environment that might be affected.
- The relevant personnel are trained in their emergency response duties under the on-site plan, together with first aid fire fighting.
- The emergency plan is tested by means of regular exercises and other appropriate means.
- The company's co-operates fully with the local emergency services for emergency planning.
- The on-site emergency plan is reviewed periodically to ensure its continued effectiveness.

Evidence of the fulfilment of this obligation may be found in the procedures shown in the following table, for each single item within the requirement:

EXTENDED CONTENTS		CORRESPONDING PROCEDURES
xviii.	Includes procedures for development and implementation, evaluation and revision.	Emergency Response Planning
xix.	These procedures determine the necessary staff skills and aptitudes as well as the resources needed to carry them out, whereas on the process of identifying risks and necessary measures to communicate to everyone who might be affected by an emergency. In general those measures to ensure the integration of the emergency plan in the organizational structure of the establishment, which affects processes and safety management system contents	MP 9 – SMS roles and responsibilities MP 6 – Competence, training and awareness MP 17 – Stakeholders Co-ordination procedure

2.6. Monitoring Performance

The company's policy objectives are to ensure that:

- Procedures are developed, implemented and maintained which actively monitor adherence to all safety procedures adopted in order to minimise the risk from major accident hazards. Active monitoring includes inspections of safety critical plant, equipment and instrumentation as well as checking compliance with training, instructions and safe working practices.
- All accidents and incidents capable of leading to a major accident are systematically reported and investigated. Investigations examine both the immediate cause of an incident and any underlying causes such as failure of procedures to protect against the occurrence.
- Corrective/preventative action determined by such investigations are recorded and implemented to a set deadline.
- The management holds responsibility for the completion of equipment inspection and for the reporting of all incidents or "near misses". It is the responsibility of the safety manager to complete incident report forms, establish the causes of incidents and decide on possible actions.

Evidence of the fulfilment of this obligation may be found in the procedures shown in the following table, for each single item within the requirement:

EXTENDED CONTENTS		CORRESPONDING PROCEDURES
xx.	Development of procedures for monitoring safety performance and for testing the safety objectives. It determine whether the plans and measures to control risks are being developed, and the incident or accident identification, reporting and investigation will be ensure	MP 20 – Performance monitoring MP 7 – Competence, training and awareness
xxi.	This supervision includes necessary inspections of the facilities and also includes training, organization and procedures	MP 20 – Performance monitoring
xxii.	An active monitoring requires an effective communication system and a full incidents and accidents investigation system, in order to analyze common aspects, and enables the safety implemented measures verification such as the verification of the establishment of the process surveillance.	MP 4.- NC, CA and PA Management Procedure

EXTENDED CONTENTS	CORRESPONDING PROCEDURES
xxiii. Responsibilities definition for initiate the investigation and corrective actions to be taken, including, if necessary, the procedures or systems review to prevent failures. The information obtained by monitoring the operation should be an important process to audit and review contribution.	MP 20 – Performance monitoring

2.7. Audit & Review

The company's policy objectives are to ensure that:

- The MAPP and SMS are systematically reviewed for effectiveness and suitability.
- Regular internal audits are conducted.
- Procedures are developed, adopted and maintained to audit the achievement of MAPP objectives.
- In particular, all relevant procedures are reviewed following any major accident or incident with the potential to escalate into a major accident.

Evidence of the fulfilment of this obligation may be found in the procedures shown in the following table, for each single item within the requirement:

EXTENDED CONTENTS		ºCORRESPONDING PROCEDURES
xxiv.	The purpose of an audit is to ensure that the organization, processes and procedures are consistent with the safety management system. Must be carried out with sufficient independence and objectivity.	MP 1 – Internal Audit Planning Conducting and Reporting Management Procedure
xxv.	Besides routine monitoring , periodic audits will be conducted , for which the owner of the establishment will develop an audit plan that covers the previous six sections and contemplates the determination of the areas and audited activities , their frequency in each case , responsibilities, necessary resources and personnel in accordance with the appropriate level of knowledge and the necessary objectivity , protocols to be used , procedures for the information of its findings and affecting monitoring.	MP 1 – Internal Audit Planning Conducting and Reporting Management Procedure
xxvi.	The revision is the study to check if the safety management system is appropriate to fulfil the policy and specific objectives, and their results in the introduction of changes that may be necessary.	MP 1 – Internal Audit Planning Conducting and Reporting Management Procedure MP 8 – Document Control Procedure

EXTENDED CONTENTS		ºCORRESPONDING PROCEDURES
xxvii.	With periodical intervals, the Director will review the policy and global strategies for the control of major-accident hazards, as well as all the aspects of the safety management system, to ensure consistency. This review will cover the allocation of resources for development and consider changes in the organization, the scientific and technical development, standards and legislation.	MP 1 – Internal Audit Planning Conducting and Reporting Management Procedure

ANNEXURE: PROCEDURES

MP 1

Internal Audit Planning Conducting and Reporting Management Procedure

Revision list

Revision No.	Description	Written By/Revised By	Date
0	First issue	C. Abela	01.10.2010
1	Modified MP to current Auditing practices	R. Tabone	05.07.2013
2	Modified MP to current Auditing Practices	R. Tabone, E. Borg	21.05.2014
3	Included the SMS at DPS within the scope and the checklist for carrying out the SMS audits	P. Conti, S. Scicluna	07.04.2016

Revised by:	Verified by:	Approved by:
P. Conti Environmental and Safety Coordinator	F. Marsh Auditor M. Falzon Head of Health & Safety	S. Scicluna EMS Management Representative

Contents:

1 Aim and Scope

The objective of the procedure is to define responsibilities and detailed rules used by ENE to plan, conduct and report the internal Environmental Management System audit and the Safety Management System audit according to the Seveso III Directive.

EMS Scope

The procedure is applicable to all ENE activities within the EMS scope. All environmental critical elements will be covered in all Enemalta sites.

SMS Scope

The procedure is applicable to all ENE activities at Delimara site within the SMS scope and with specific reference to the safety critical elements listed below:

EQUIPMENT	CRITICAL ELEMENTS
QUAY / TANKERS / MOORING	MOORINGS SIMULTANEOUS OPERATIONS
FO/DO UNLOADING	ARM HOSE
PIPELINES	RELIEF VALVE PIPE BRIDGES AND OTHER PIPELINES
TANK	HIGH LEVEL TRANSMITTER
PUMPS / TRANSFER OPERATIONS	PRESSURE TRANSMITTER PSV
D3 CENTRIFUGES / D2 CENTRIFUGES / TREATMENT	PRESSURE TRANSMITTER OVERSPEED TRANSMITTER TEMPERATURE TRANSMITTER
COMBUSTION / ENGINES / BOILER	PSV PRESSURE TRANSMITTER TEMPERATURE TRANSMITTER GAS DETECTION OVERSPEED TRANSMITTER VIBRATION TRANSMITTER
INTERCEPTORS	INTERCEPTOR
OTHER CHEMICALS	NO RELEVANT CRITICAL ELEMENTS
FIRE DETECTION / FIRE FIGHTING	EXTINGUISHERS ALARM TRANSMITTER DELUGE/SPRINKLERS HYDRANTS FIRE HOSES PUMPS FIRE DOORS GAS FIXED SYSTEM BREATHING APPARATUS OTHER PORTABLE FIRE EQUIPMENT Fire walls / barriers

2 References

EN ISO 14001:2004 Clause 4.5.5
OHSAS 18001:2007 Clause 4.5.5
SEVESO III Directive

3 Terms and Definitions

Audit plan	Description of activities to be carried out in a specific audit
Audit program	Group of several audits planned over a defined period of time, addressed for a specific aim
Audit team	Group of persons charged to carry out an audit
Auditor	Person competent to conduct an audit. The persons conducting the audit should be competent and in a position to do so impartially and objectively
E&SC	Environmental and Safety Coordinator
ENE	Enemalta plc.
EMS	Environmental Management System
ER	Environmental Representative
ERP	Emergency Response Personnel
Establishment	The whole location under the control of an operator where dangerous substances are present in one or more installations, including common or related infrastructures or activities
Installation	Technical unit within an establishment and whether at or below ground level, in which dangerous substances are produced, used, handled or stored; it includes all the equipment, structures, pipework, machinery, tools, private railway sidings, docks, unloading quays serving the installation, jetties, warehouses or similar structures, floating or otherwise, necessary for the operation of that installation
Internal audit	Systematic, independent and documented process to obtain audit evidence, and through objective evaluation determines the extent to which the safety management system audit criteria, set by the organization are fulfilled Note 1: Auditor independence can be demonstrated by an auditor being free from responsibility for the activity being audited Note 2: Internal audit is a process which enables sharing of experience and improves the effectiveness of the workings of the organisation
Lead auditor	Responsible of the audit team
MAPP	Major Accident Prevention Policy
Nonconformity	Non-fulfilment of a requirement
Operator	Any natural or legal person who operates or controls an establishment or installation or, where provided for by national legislation, to whom the decisive economic or decision-making power over the technical functioning of the establishment or installation has been delegated;

SMS	Safety Management System– this applies only for Delimara Power Station and related Administration
SR	Safety Representative
SOP	Standard Operating Procedure: An established written procedure to be followed by ENE staff, providing technical and organisational requirements to perform a specific activity

4 Responsibilities

Management representative (MR):

- approves the audit program
- provides resources for the audit program. These resources could include human resources, transport, co-operation from interviewed persons, etc

Environmental and Safety Coordinator (E&SC):

- co-ordinates together with the lead auditor to evaluate the effectiveness of actions taken following nonconformity. The E&SC signs off the action plan when all actions are completed

Lead Auditor:

Based on data collected from past audits and the non-conformities identified, and taking into consideration ENE's exigencies, the lead auditor shall consult with the E&SC and EMS and/or SMS team to develop a rationalized program intended to result in improved environmental and safety performance. The lead auditor:

- prepares the audit program and submits it to the MR;
- ensures that the audits are being carried out according to the audit program;
- coordinates the audits within the audit program;
- identifies the members of the audit team;
- defines the audit conclusions and issues the audit report;
- where necessary, issues an action plan.

Environmental representative (ER):

- supports the Lead Auditor in carrying out the environmental audit program (participating in audits and following up on audit report).

Safety representative (SR):

- supports the Lead Auditor in carrying out the safety audit program (participating in audits and following up on audit report).

Auditors:

- assist the Lead Auditor during the audits.

Audit Team:

- The persons forming part of the audit team may include personnel from the Regulatory Affairs Office, who are all qualified as internal auditors, persons from the Health & Safety Department who all have experience in health and safety and auditing or persons from management who have experience in the departments or documents being audited.

Interviewed Persons:

- The interviewed persons will persons will be either the site responsible persons or the document responsible persons, or any other person nominated by them.

5 Frequency

An annual audit program shall be prepared by the lead auditor taking into account:

- the importance of the safety aspects of the areas to be audited;
- the results of the previous audit program;
- any specific request coming from an internal or external party.

The frequency of the audits can be determined as follows:

- Sections/areas with high safety impact may be audited at least annually;
- Sections/areas with very low safety impact may be audited once every two years.

6 Detailed procedural rules

6.1 Audit program

The objectives of the audit program are to:

- assess the degree of implementation of all the SMS and EMS documents and procedures, included in the major accident prevention policy;
- assess the effectiveness of ENE SMS and EMS to implement the major accident prevention policy and to achieve objectives and targets;
- assess the SMS and EMS capability to grant compliance with legal requirements;
- identify areas for SMS and EMS improvement

The audit program shall be defined for each area of the organisation as per SMS and EMS scope:

- the month of the year when the audit shall be conducted;
- the status of the audit (i.e. planned, conducted)

The audit program shall be approved by the MR in order to provide the requested resources.

6.2 Auditors

The lead auditor shall identify internal or external audit team members according to the following requirements:

Lead auditor requirements:

- Three years' experience in environmental/safety activities;
- Three years' experience in ENE activities or in electrical energy production from fossil fuels;
- Ownership of a specific safety auditor certification/qualification;
- Experience in conducting audits in the role of responsible of the audit.

Auditor requirements:

- One year experience in environmental/ safety activities;
- One year experience in ENE activities or in electrical energy production from fossil fuels;
- Attendance to a specific auditor training course or having a specific safety auditor certification / qualification;
- Experience in conducting at least two internal audits under the leadership of a lead auditor.

Audit Team

- If lead auditor does not have the required the three years' experience, at least one member of the audit team should have the required criteria. This could be a person from management who has the required experience who will assist the lead auditor during the audit preparation and/or the audit execution. If this is not satisfied an external auditor must be outsourced to conduct that specific audit.

Planning audits

The lead auditor shall plan the audit as follows:

- Analyses the SMS and EMS documents relevant for the audit scope;
- Provides specific tasks to all audit team members;

- Decides if checklists or other tools and / or records are required for the audit.

The lead auditor shall prepare the audit plan for the specific audit, where necessary. The audit plan should define:

- The audit date, starting time and duration;
- Names and roles of the audit team members;
- The audit objectives;
- The audit scope: Areas / Sections to be audited; ENE activities to be audited;
- The locations to be visited;
- Persons to be contacted.

The lead auditor shall inform all those concerned, including the E&SC of the audit by email in advance.

6.3 Conducting audits

The audit team shall conduct the audit under the coordination and responsibility of the lead auditor by:

- Visiting working areas and places;
- Referring to relevant procedures and documents;
- Checking of records, forms, etc
- Interviewing people working within the audit scope;
- Analyzing processes and activities.

All the above mentioned audit activities are to be addressed to find evidence that can demonstrate the conformity and/or nonconformity to the SMS and/or EMS procedures, SOPs and other documents.

6.4.1 Conducting an SMS Audit

A total of 161 SMS items shall be evaluated (See Annexure 1 for a Internal Audit checklist) and classified according to the following categories: NA: Not applies; C: Correct; MINOR: Low level omission - To be corrected before next inspection; MAJOR: Mandatory - Non legal compliance; SERIOUS: Mandatory - Major or imminent risk.

The following formula shall be applied to define the final evaluation of the SMS:

$$SMS_{Audit} = \frac{161 - (N.A. + MINOR + 3 * MAJOR + 10 * SERIOUS)}{161 - N.A.}$$

The SMS shall be considered correct, comprehensive and implemented whenever:

$$SMS_{Audit} \geq 0.90$$

The SMS shall be amended and improved whenever:

$$SMS_{Audit} \geq 0.75$$

The SMS shall be considered deficient and/or not correctly implemented whenever:

$$SMS_{Audit} \leq 0.75$$

This evidence will be documented in a draft audit report which is subsequently forwarded to the auditors and auditees for their comments to come up with a final audit report. This report will identify good work practices as well as non conformities and recommendations.

The audit team will check if training activities were successful to change the behaviour of ENE employees with regards to environmental issues. If not, the audit report will point out this fact in order to allow for further training or any other action deemed necessary.

6.4.2 Conducting an EMS Audit

This auditing is similar to SMS auditing and most of these audits will be done in conjunction with the SMS audits. Reporting will be done in a single document.

6.4 Audit reporting

Following each audit, the lead auditor shall prepare an audit report which may contain the following information:

- persons interviewed
- a summary of the audit activities carried out;
- the list of nonconformities and/or recommendations including a description of the situation and of the reasons for the nonconformity/recommendation;
- a remark on any difficulty encountered during the audit, including any lack of agreement on the audit conclusions;
- any area which was not covered during the audit;
- strong and weak areas;
- a non disclosure claim by audit team members (external);
- the distribution list of the audit report.

The lead auditor will issue the audit report listing the non-conformities identified during the audit and any recommendations deemed fit to be implemented in order to improve the process/site being audited. The audit details and audit report are registered in audits section in the SMS database. Any nonconformities or recommendations are recorded in the Non Conformance Register.

7 Related documents

Audit programe
Non-Conformance Register
Internal Audit Checklist - See Annexure

8 Annexure

Annexure 1.-'Internal Audit - Check-list'

	Data	Review and Document Date
Company:		
Address:	**MAPP**	
Telephone:	**SMS**	
Manager:	**ERP**	
Emergency Responsible/Emergency Coordinator:		
DATE, AUDITOR SIGNATURE AND STAMP		

GENERAL REQUIREMENTS	OBSERVATIONS
AUDITOR TEAM COMMENTS AND NON-CONFORMITIES	

RESULTS	ITEMS	NA	C	MINOR	MAJOR	SERIOUS	CONCLUSION
MAPP	**5**						
ORGANISATION AND PERSONNEL	**17**						
IDENTIFICATION AND EVALUATION OF MAJOR HAZARDS	**33**						
OPERATIONAL CONTROL	**32**						
MANAGEMENT OF CHANGES	**24**						
PLANNING OF EMERGENCIES	**16**						
MONITORING PERFORMANCE	**19**						
AUDIT AND REVIEW	**15**						

NA: Not applies
C: Correct
MINOR: Low level omission. To be corrected before next inspection.
MAJOR: Mandatory. Non legal compliance
SERIOUS: Mandatory. Major or imminent risk

CONCLUSIONS:
FAVORABLE: Only C
FAVORABLE WITH NON- CONFORMITIES: Only C, MINOR
UNFAVORABLE: MAJOR or SERIOUS
DISRUPTION: SERIOUS with imminent risk

MAJOR ACCIDENT PREVENTION POLICY - MAPP		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
DOCUMENTS CONSULTED										
1	The safety and health policy includes a signed statement of commitment to safety and health, including the following key objectives:									
	- commitment to providing a safe and healthy workplace									
	- assessment and reduction of risk to ALARP									
	- compliance with all applicable laws, regulations, standards, codes of practice and recommended practices (list of standards, codes and practices to be supplied with SMS submission)									
	- involvement of personnel in safety and health strategy development									

MAJOR ACCIDENT PREVENTION POLICY - MAPP		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- establishment of measurable objectives and targets									
	- provision of trained and competent personnel									
2	Mechanisms in place to ensure the accountability of senior management for the achievement of safety and health policy outcomes									
3	Safety and health policy intent has been communicated to all personnel associated with the project									
4	Safety and health policy is periodically reviewed to ensure its relevance and that objectives are met									
5	Each parent organisation's safety and health policy is referenced									

1. ORGANISATION AND PERSONNEL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
DOCUMENTS CONSULTED										
1	The dedicated safety management functional structure corresponds to the one included in the SMS documentation									
2	The SMS responsible is sufficiently qualified and has access to the top management of the establishment.									
	The SMS responsible covers the following aspects									
	- Ensure the establishment, implementation and maintenance of the SMS procedures									
	- Reporting to top management about the SMS and needs improvement									
	- Access to the establishment management without intermediate steps									
	- Responsible managers meets periodically with Direction									

1. ORGANISATION AND PERSONNEL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
3	The organisation's structure is included and contains:									
	- an appropriate structure for the management of safety									
	- broad safety and health responsibilities									
	- reporting lines									
4	The safety management area is sufficiently independent									
5	Safety and health policy intent has been communicated to all personnel associated with the project									
6	All personnel are informed of their roles, responsibilities and accountabilities									
7	Key personnel have signed off on their understanding of their safety and health roles, responsibilities and accountabilities									
8	Interface between key personnel is clearly defined									
9	Responsibilities and accountabilities are regularly reviewed and in line with organisational changes									

1. ORGANISATION AND PERSONNEL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
10	Safety and health responsibilities and accountabilities of all personnel align with their skills and training									
11	There is an effective procedure for defining individual employee qualifications for safety positions with documental evidences of the qualification recognition for the following positions									
	- Safety responsible									
	- Operations personnel									
	- Maintenance personnel									
	- Emergency personnel									
	- Others (i.e. subcontractors and stakeholders)									
12	In case of key staff absence, there are deputies:									
	- Safety responsible									
	- Operations personnel									

1. ORGANISATION AND PERSONNEL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- Maintenance personnel									
	- Emergency personnel									
	- Others (i.e. subcontractors and stakeholders)									
13	The deputies have the right qualifications									
	- Safety responsible									
	- Operations personnel									
	- Maintenance personnel									
	- Emergency personnel									
	- Others (i.e. subcontractors and stakeholders)									
14	There are formal consulting mechanisms to involve employees and elected employee representatives during:									
	- Hazard and Major Hazard identification studies									

1. ORGANISATION AND PERSONNEL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- Risk assessment									
	- Safety management system reviews									
15	There are mechanisms for involving personnel in:									
	- Development and implementation of safety and health policy and procedures									
	- Identification and management of hazards and risk									
	- preparation of the SMS									
16	There are both formal and informal instruments to ensure effective communication of safety and health information to all personnel									
17	Safety and health roles, responsibilities and accountabilities are reviewed regularly and when organisational change occurs									

2. IDENTIFICATION & EVALUATION OF MAJOR HAZARDS		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
DOCUMENTS CONSULTED										
1	Systematic processes are documented to:									
	- Identify hazards									
	- Assess the likelihood and consequences of risk									
	- Agree on the implementation of controls to ensure risks are reduced to ALARP									
2	There is a procedure for risk assessment									
3	There are risk assessment reports containing:									
	- Process description									

2. IDENTIFICATION & EVALUATION OF MAJOR HAZARDS		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- Definition of the mechanism applied for hazard identification									
	- Includes routine & non-routine operations/activities									
	- Includes operations/activities undertaken by 3rd parties in company workplaces									
	- Definition of the mechanism applied for risk evaluation									
	- Identification of the prevention measures and safeguards									
	- Risk Analysis and consequence evaluation									
	- Findings									
4	There is a HAZID / HAZOP process that involves the systematic review of all:									

2. IDENTIFICATION & EVALUATION OF MAJOR HAZARDS		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- activities									
	- processes									
	- designs									
	- products									
	- materials									
	- plant									
	- equipment									
	- services									
	- site locations									
	- work environments									
5	The HAZID / HAZOP process considers, as a minimum:									
	- emergencies									

2. IDENTIFICATION & EVALUATION OF MAJOR HAZARDS		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- unplanned events									
	- incidents									
	- organisational structure									
	- environment									
	- legislation									
6	The HAZID / HAZOP process includes:									
	- scope and objectives									
	- personnel with detailed knowledge of work processes and practical experience									
	- available and required information and records included from previous projects									
	- assumptions made as part of the process, and validation of these assumptions									

2. IDENTIFICATION & EVALUATION OF MAJOR HAZARDS		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- interaction of work parties, stakeholders, processes, plant and environment									
	- consultation with involved stakeholders									
	- major accident and incident events									
7	The methodology used in the HAZID / HAZOP process is in line with applicable regulations and standards									
8	The outcomes and results of the HAZID process:									
	- identify the hazards									
	- categorise the hazards									
	- determine if the hazards fall inside the definition of a major accident event									
	- carry identified potential major accident event hazards forward to the assessment phase									
	- detail appropriate controls for the safety of personnel and community									

2. IDENTIFICATION & EVALUATION OF MAJOR HAZARDS		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- are documented as a formal record for each hazard, and collated in a project hazard register									
9	All identified hazards and major accident events are subject to an appropriate risk assessment process in alignment with legal standards									
10	Risks are assessed in terms of the consequence of a major accident event and the likelihood									
11	A qualitative risk matrix detailing the level of risk is used in alignment with legal standards and is appropriate to the type of assessment being conducted									
12	Qualitative and quantitative risk assessments are undertaken by suitably knowledgeable and experienced persons									
13	Persons involved in the risk assessment are provided with current data and information related to the project									
14	Assumptions have been identified and justified									

2. IDENTIFICATION & EVALUATION OF MAJOR HAZARDS		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
15	The potential for escalation of a major accident event has been assessed									
16	The identified hazards and risk data are consistent with industry practice									
17	The hazard and risk data used in the assessment are referenced									
18	Where software has been used in the assessment of risks:									
	- it has been assessed by the operator prior to implementation and deemed appropriate									
	- the input data and models have been verified for accuracy									
	- the results have been verified									
19	Where an external provider has undertaken the risk assessment, there is an agreement with the provider to review the risk assessment as required or, alternatively, the operator is capable of performing the review in-house									

2. IDENTIFICATION & EVALUATION OF MAJOR HAZARDS		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
20	The assessment of risks is consistent with the operation and associated facilities, their locations and other relevant impacts									
21	Project personnel is consulted regarding the selection of hazard and risk control measures									
22	Project personnel is informed of all risks associated with their work tasks, and is aware of how to perform their work tasks to achieve the risk reduction measures									
23	There is a system to monitor the effectiveness of controls or maintain controls and implementation of the risk control action plan									
24	Safety and health inspections, testing, checks and audits verify that the agreed hazard and risk control strategies:									
	- are being implemented									
	- are effective									
	- identify where improvements can be achieved									

2. IDENTIFICATION & EVALUATION OF MAJOR HAZARDS		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
25	There is documentation demonstrating the hazard and risk control options that were considered and rejected									
26	Development of the formal safety assessment process is undertaken by competent and suitably qualified persons									
27	The risk safety assessment process reflects licence and regulatory requirements and best industry practice									
28	A program is in place to ensure the periodic review and re-assessment of identified hazards and risks, and the identification of new hazards and assessment of associated risks									
29	A process is in place to communicate hazard and risk information on site									
30	All personnel are actively involved in developing the hazard analysis through the identification and control of hazards and risk on site									
31	Hazard, risks and their controls form a significant part of training and induction process									

2. IDENTIFICATION & EVALUATION OF MAJOR HAZARDS		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
32	Communications regarding hazards and risks are retained on record									
33	There is a process to deal with the hazards and risks associated with day-to-day work changes and inform employees of these changes									

3. OPERATIONAL CONTROL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
DOCUMENTS CONSULTED										
1	The Safety Operational Procedures (SOP) utilise information from risk and hazard assessments, legislative requirements, standards and project policies									
2	SOPs are managed through document control and records procedures									
3	There is a process to capture feedback on the effectiveness of or improvements to SOPs									
4	There is a process to enable development of SOPs for non-routine work activities									
5	Personnel are trained and competent in the execution of SOPs									

3. OPERATIONAL CONTROL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
6	The SOPs include procedures and arrangements for conveying information between shifts, such as:									
	- maintenance in progress									
	- plant out of service									
	- process abnormalities									
7	The SOPs allow for the following procedures relating to the PTW system:									
	- authorisation and issuing of permits									
	- distribution and display of permits									
	- isolation procedures									
	- hazard identification and risk management									
	- simultaneous operations									

3. OPERATIONAL CONTROL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- change in operating status - close-out of permits									
8	The SOPs includes procedures such as those relating to the following working environments, where appropriate:									
	- heights									
	- trenches and excavations									
	- confined spaces									
	- oxygen-deficient atmospheres									
	- pressure testing									
	- electrical hazards									
	- welding, cutting and heating									
	- lifting and hoisting									

3. OPERATIONAL CONTROL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
9	The SOPs include procedures to handle maintenance operations									
10	A program has been developed and implemented on site for the routine inspection and maintenance of plant and equipment									
11	Planned maintenance activities are conducted in line with procedures contained within the SOPs									
12	Procedures are in place for the review of hazards and risk associated with maintenance activities prior to undertaking these activities									
13	A process is in place to ensure that:									
	- safety critical equipment is identified and maintenance scheduled accordingly									
	- scheduled maintenance is prioritised with consideration for the safety impact of equipment									
14	Procedures are in place for the periodic review of maintenance procedures to ensure:									

3. OPERATIONAL CONTROL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- maintenance is being undertaken									
	- equipment is safe to use before being returned to service									
	- potential improvements to the maintenance process are identified									
15	The plant and equipment register specifies those plant and equipment requiring registration									
16	The plant and equipment register is used to record plant and equipment inspections, maintenance, repairs and modifications									
17	Plant and equipment found to be defective or dangerous is taken out of service and tagged as “out of service” until such time as a qualified technician has made suitable repairs or the equipment is replaced									
18	Personnel are instructed in the use of “out of service” tags as part of their induction									
19	Appropriate procedures and training are provided to ensure that all maintenance activities and tasks are conducted in line with the occupational safety and health policy									

3. OPERATIONAL CONTROL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
20	There is a documented procedure to ensure that defective or dangerous plant and equipment is reported									
21	The project management team has ensured that the human resources required for the project are suitably fit and competent with the necessary safety behaviours for the tasks assigned to contribute to a positive safety culture on site									
22	Occupational safety and health forms an integral part of the project's human resources strategy and training-needs analysis									
23	A competency and skills matrix defines the competency criteria and safety attributes of each position									
24	Evidence of statutory competencies is required for relevant positions, and a copy of the certificate retained on site									
25	There is a process to capture the review of position specifications									
26	All personnel are aware of their roles and responsibilities upon commencement of employment									

3. OPERATIONAL CONTROL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
27	Employee competence is assessed as part of a periodic performance review									
28	Nominated workplace trainers deliver training programs in a timely manner									
29	Training programs are adequately funded, and reviewed and reassessed periodically to ensure effectiveness									
30	All personnel on or visiting the project site receive a project-specific induction before commencing work or accessing the project site									
31	Induction training addresses:									
	- site and occupational safety and health issues as identified by the HAZID, risk assessment and control process									
	- responsibilities for safety and health									
	- project SMS									
	- emergency arrangements									

3. OPERATIONAL CONTROL		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
32	Training is available to address safety and health considerations and safety-critical project-specific tasks such as:									
	- SOPs									
	- safety and health responsibilities									
	- PTW system									
	- manual handling									
	- first aid									
	- emergency response									
	- incident and hazard reporting									
	- relevant legislation									
	- PPE and hazardous substances and dangerous goods									

4. MANAGEMENT OF CHANGE		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
DOCUMENTS CONSULTED										
1	Manning requirements and arrangements are described									
2	There is a general description of the site meteorological conditions predicted for the duration of the project									
3	Key construction, including inspection, testing and pre-commissioning, activities are described									
4	There is a general description of the structure, plant and equipment to be installed									
5	The equipment required for and in support of construction activities is described									
6	The safety features and systems are described									

4. MANAGEMENT OF CHANGE		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
7	The safety assessment process covers the elements of hazard identification, hazard and risk assessment, assessment of results, and hazard and risk control measures									
8	There is a clear indication of who was involved in conducting the safety assessment studies for construction or significant change, and whether these personnel are competent									
9	The assumptions made for the safety assessment process are:									
	- laid out clearly									
	- reasonable									
	- justified (e.g. by comparison with external data and references)									
10	The hazard identification approach used is systematic									
11	The hazard identification has been adequately documented									
12	The hazard identification techniques used are described									

4. MANAGEMENT OF CHANGE		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
13	The hazards and hazard categories are recorded in the hazard register or a similar document									
14	Maintenance of the hazard register is referenced in the SMS									
15	The people involved in the hazard identification process (e.g. construction workers, employees, contractors) are documented									
16	The identified hazards are in line with hazards for similar construction activities in similar settings									
17	A systematic approach has been adopted for the analysis of major accident events									
18	Comparative hazard and risk assessment studies have been conducted									
19	The type and extent of the comparative hazard and risk assessment studies are commensurate with the extent of activities									
20	The consequences and likelihood of all major accident events are clearly expressed									

4. MANAGEMENT OF CHANGE		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
21	The integrity of temporary refuges, escape routes, evacuation and rescue systems have been evaluated for all major accident events									
22	Hazards and major accident events are in accord with findings from the hazard identification studies for similar construction projects or sites									
23	The risk results are presented:									
	- quantitatively									
	- qualitatively									
24	Any contractors have been assessed and determined by the operator to be appropriate (i.e. experienced and competent) for the operation or activity in which they will be engaged									

5. PLANNING FOR EMERGENCIES		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
DOCUMENTS CONSULTED										
1	The project emergency response plan:									
	- assigns roles and responsibilities for key personnel									
	- assigns an emergency coordinator									
	- details implementation and training									
	- defines emergency events and situations									
	- includes procedures for specific emergencies									

5. PLANNING FOR EMERGENCIES		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- details an emergency drills schedule, including type and duration									
	- has been developed in consultation with local community emergency response agencies									
2	The emergency response organisation is analysed to determine the minimum number of personnel, which includes at least the following positions:									
	- emergency coordinator									
	- site controller									
	- communications									
	- personnel support									
	- management liaison									
	- regulatory liaison									

5. PLANNING FOR EMERGENCIES		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
3	All personnel within the emergency response organisation are trained in the emergency response plan and their particular role									
4	Procedures are in place to assist those personnel exposed to a critical incident									
5	Key elements of the emergency response plan are contained within the site induction									
6	Changes to the emergency response plan are communicated effectively to all personnel									
7	An emergency contact list is maintained and displayed at a prominent location and with each work crew and includes:									
	- telephone numbers and locations of community emergency response agencies									
	- a list of first aid personnel									
8	Emergency equipment and communications are tested periodically									

5. PLANNING FOR EMERGENCIES		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
9	An emergency communication protocol for transmitting emergency information exists and has been communicated to all personnel									
10	Communication limitations have been considered, and appropriate measures put in place to handle these limitations within the emergency response plan									
11	Site personnel and third parties entering and leaving the site are controlled and recorded									
12	There is periodic correspondence with emergency agencies to ensure current information is accurate for all parties concerned									
13	Emergency drills are conducted periodically and a report detailing drill performance, recommendations for improvement and corrective actions implemented is distributed to relevant personnel									
14	Directions to emergency assembly points are posted around the site and are known by all site personnel									
15	The emergency response plan documents the requirements of contact with media, public, family members, unions and local interests, and the nominated personnel for such contacts									

5. PLANNING FOR EMERGENCIES		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
16	Emergency response equipment and resources are available and commensurate with analysis of the assessment of risks and possible emergencies									

6. MONITORING PERFORMANCE		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
DOCUMENTS CONSULTED										
1	The following processes exist for the purpose of inspection, testing and monitoring of site activities, plant and equipment:									
	- procedures for ensuring plant is checked prior to use									

5. PLANNING FOR EMERGENCIES		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- a planned regime of workplace safety and health inspections									
	- work activity observations									
	- inspection and testing of electrical equipment									
	- inspections and testing of cranes and lifting equipment									
	- inspections and testing of pressure vessels and pressure testing equipment									
	- inspections and testing of emergency, first aid, fire and spill control equipment									
	- camp and amenities inspections									
2	Inspections follow an agreed format and are documented									
3	A corrective action register prioritises, tracks and closes-out actions and improvements									
4	Incident hazard reporting and investigation									

5. PLANNING FOR EMERGENCIES		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
5	All accidents, incidents and near-miss incidents that cause, or have the potential to cause, a hazard are reported and investigated									
6	The causes of all accidents, incidents and near-miss incidents are eliminated or controlled to prevent recurrences									
7	An accident or incident reporting and investigation process is in place covering:									
	- securing or ensuring safety at the accident or incident scene									
	- treatment, medical assistance and evacuation of injured personnel									
	- assignment of responsibility for the accident or incident site									
	- assessment of the seriousness of the accident or incident event									
	- notification of organisational management personnel, employee representatives and authorities									

5. PLANNING FOR EMERGENCIES		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- assignment of responsibility for reporting and investigation									
	- consultation with authorities, site and operations personnel									
	- investigation to identify root causes and recommendations to prevent recurrence									
	- timely implementation of recommendations									
8	Corrective action requests are in place to provide a permanent and traceable record of the close-out recommendations arising from accident or incident reports and investigations									
9	Assignment of reporting requirements and timeliness of reporting of accidents, incidents, and near-miss incidents to regulatory authorities is in line with legislative requirements									
10	Safety alert notices are used to disseminate information on incidents to all project personnel									
11	All project personnel are informed of the necessary reporting and investigation processes and their required involvement									

5. PLANNING FOR EMERGENCIES		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
12	Those personnel involved in the reporting and investigation process are adequately trained to perform these tasks									
13	The investigation teams competence to carry out a thorough investigation has been confirmed									
14	A hazards and risk register is used to record all accident and incident hazards									
15	Documentation of regulatory requirements for incident reporting and contact procedures are maintained on site									
16	Relevant industry hazard alerts are disseminated to personnel									
17	Safety and health information and reports									
18	Safety and health records are archived in accordance with statutory periods and are legible, identifiable, traceable and readily retrievable									
19	Access to confidential records is restricted in line with the operator's privacy policy, which aligns to legislative requirements									

7. AUDIT AND REVIEW		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
DOCUMENTS CONSULTED										
1	There is a system and program of safety management system audits, including both internal and external									
2	Audits enable									
	- verification that the safety and health arrangements meet specified performance standards									
	- opportunities for system improvements to be identified									
2	There is a scheduled audit plan, which includes									
	- Time frame									

7. AUDIT AND REVIEW		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- Scope and objectives									
	- Items and activities to be audited									
	- Criteria for selection of audit teams and leaders									
	- Audit dates									
	- Reporting requirements									
3	All SMS elements are included in the audit program									
4	The internal audit is performed once a year									
5	There are internal audit reports signed by the auditor which contains									
	- Aim and scope									
	- References									
	- Auditor and audited personnel									

7. AUDIT AND REVIEW		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- Date									
	- Conclusions									
	Audits are conducted by suitably competent personnel and involve key personnel									
6	The designed auditors are impartial, objectives and independents									
7	Corrective action requests are prioritised, assigned responsibility, and allocated an expected completion date									
8	The results are known by all involved personnel									
9	Audit findings are submitted in a formal report to appropriate project personnel, along with any corrective action requests									
10	Audit reports are disseminated to involved stakeholders and authorities									
11	SMS revision is performed by the Direction									
12	A process is in place to capture corrective actions and follow-up requirements resulting from the audit, and ensure close-out in a timely manner									

7. AUDIT AND REVIEW		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
13	SMS revision is performed once a year									
14	SMS revision considers, at least:									
	- Monitoring actions									
	- Scope according to MAPP									
	- Internal / External audit results									
	- State of the corrective or preventive actions									
	- Result of the training plans									
	- Recommendations from others									
	- Results of the incident investigation									
15	The periodic review culminates in the development of a close-out report with content including:									
	- identified areas of safety improvement									

7. AUDIT AND REVIEW		NA	YES	NO	OBSERVATIONS	EVALUATION				
						NA	C	MINOR	MAJOR	SERIOUS
	- sources of information used									
	- effectiveness of employee communication and feedback									
	- results of accident and incident investigations									
	- results of monitoring, inspection and audit programs									
	- details of corrective actions taken									
	- safety and health impacts of changes in project delivery									
	- changes in the organisation structure									
	- a sampling of management and employee safety perception									
	- improvements in work practices and technology									
	- community safety and health impacts and expectations									

MP 2

Suppliers and Contractors Management Procedure

Revision list

Revision No.	Description	Written By/Revised By	Date
0	First issue	C. Abela	01.10.2010
1	Minor updates to document	S. Scicluna	23.04.2014
2	- Included the SMS at DPS within the scope - Change in Company name adopted	P. Conti	14.04.2016

Revised by:	Verified by:	Approved by:
[signed] P. Conti Environmental & Safety Coordinator [signed] F. Marsh Lead Auditor	[signed] I. Bonello Procurement Manager	[signed] S. Scicluna EMS Management Representative [signed] H. Attard Executive Director Finance

Contents

1 Aim and scope

The purpose of this procedure is to establish rules, roles and responsibilities with which Enemalta plc shall identify potential environmental and safety impacts caused by goods and services to be provided by suppliers and contractors and shall oblige suppliers and contractors to comply with relevant EMS and SMS requirements.

The procedure is applicable to all staff purchasing any good, service or works which can have environmental and safety impacts.

2 References

EN ISO 14001:04, clause 4.4.6

EN ISO OHSAS 18001:07, clause 4.4.6

Chapter 424 Occupational Health and Safety Authority Act

L.N. 281 of 2004 - Work Place (Minimum Health and Safety Requirements for Work at Construction Sites) Regulations

3 Terms and Definitions

ENE	Enemalta plc
EMS	Environmental Management System
SMS	Safety Management System - this applies only for Delimara Power Station and related Administration
LA	Letter of Acceptance:- The LA contains instructions for contractors and the contracting body specifying all conditions in the tender document, including the special conditions.
SAP©	Business Management Software:- SAP© is the software Enemalta is using to process all financial, transfer of goods entering the company warehouses and transfer of goods within the company, together with all fault reporting.
ER	Environmental Representative
SR	Safety Representative
SOPs	Standard Operating Procedures: An established written procedure to be followed by ENE staff, providing technical and organisational requirements to perform a specific activity

H&S	Health and Safety
MPS	Marsa Power Station
DPS	Delimara Power Station

4 Responsibilities

Environmental and Safety Coordinator (E&SC)

- Provides the necessary support and environmental and safety documentation

Lead Auditor

- Defines the need for carrying out internal audits on contractors

Procurement Officer/s

- Identifies technical requirement by writing a tender specification
- Defines procedures to be followed by contractors

Tender Evaluation Team

- Evaluates tender offers submitted by the Tenderers for compliance against the published tender document. The team is made up of two or more officers.

Head of Health and Safety (H&S)

- Ensures that the company is compliant with Health & Safety standards, rules and legislation

Environmental Representative (Legal Obligations)

- Ensures that the company is compliant with standards, permits, rules and legislation related to the environmental management system

Project Manager

- Ensures that all safety rules and regulations are observed throughout the project
- Ensures that the contractor abides to all EMS SOPs
- Ensures that all project targets are reached on time as specified in the contract.

Environmental Representative (ER)

- Identifies specific EMS training needs and informs the E&SC and Section Managers

Safety Representative (SR)

- Identifies specific SMS training needs and informs the E&SC and Section Managers

5 Frequency

- Document Use – This document needs to be used whenever a new contract is being drawn up.

- Document revision - This document should be reviewed and updated every twenty four (24) months, unless it is deemed necessary that it should be revised prior.

6 Detailed procedural rules

6.1 Tender

Goods, services or works in Enemalta plc are generally procured through a public tender. Special cases exist where a Direct Order is issued.

The tender specification is written by the requesting officer/s who define/s:

- the technical characteristics of the goods, services or works;
- delivery times and obligations
- any quality, environmental and/or safety management system certification(s), when relevant and not in conflict with EU regulations against commercial barriers;
- the need for permits, licenses, registrations, competence of personnel, documents as requested by law or by international standards;
- environmental, safety and quality procedures and rules and/or requirements to be observed during execution of services or works.

The E&SC, supported by the environmental representative for legal obligations and the Head of Health and Safety is to provide the environmental and safety conditions and guidelines to be included in the tender specification, **DOC 1 - Tender Documents relating to Enemalta Environmental and Safety Management System**, which is available on the Enemalta Intranet Portal at location:

Documents/Environmental Management System (EMS)/DOCs/

These environmental and safety conditions are to apply for the purchase of goods, services and works and are to be updated as deemed necessary by the E&SC.

The Procurement Officer is to combine, where applicable, the Health & Safety and Environmental conditions with the tender specification. The Procurement officer can ask for technical support from the E&SC or the ER Legal Obligations in the case of environmental issues whilst from the Head of Health & Safety in the case of Health & Safety issues.

The E&SC and the Head of Health & Safety may be consulted again during the adjudication process in order to confirm whether the products or services being offered by the contractor or supplier are as per original request/specifications.

In certain instances contractors/suppliers may be requested to comply with Enemalta's SOPs.

The Letter of Acceptance (LA) shall contain instructions for contractors that they are to abide to all conditions in the tender document, including the special conditions.

6.2 Acceptance and Certification

Upon arrival of goods, two officers, normally a Procurement Engineer together with one officer representing the end user section, will certify that all requirements of the contract have been met. This is entered in SAP© which automatically releases the items for use.

In the case of a service or works, the responsible officers will certify that all requirements of the contract have been met. This is entered in SAP©.

6.3 Briefing of Contractor and training of Contractor's employees

A **Briefing Document for Contractors and Visitors** (specific for the sections of MPS, DPS or Distribution with reference numbers **DOC 11, DOC 12 or DOC 13** respectively) will be provided and updated by the Head of Health & Safety and the E&SC. This document will support the correct and proper definition of rules and requirements stipulated in the tender specification. These documents are available on the Enemalta Intranet Portal at location:

DOC 11: Documents/Environmental Management System (EMS)/DOCs/

DOC 12: Documents/Environmental Management System (EMS)/DOCs/

DOC 13: Documents/Environmental Management System (EMS)/DOCs/

The responsible officer/s will oblige the contractor (or his/her representative) to train his/her employees working on the contract, on the contents of environmental and safety related documents. This training may be carried out in conjunction with ENE personnel depending on the nature and duration of the work. The contractor (or his/her representative) will then sign **DOC 2 - Contractor's Briefing & Employee Training** the documents confirming that they have understood the contents of these documents and that they will deliver the relevant training to their employees. This document is available on the Enemalta Intranet Portal at location:

Documents/Environmental Management System (EMS)/DOCs/

6.4 Internal Audits and Inspections on contractors' work

As per ENE's Special Conditions, the contractor may be subjected to internal audits by ENE during the contract duration in order to:

- verify compliance with contract requirements and rules in view of the commitment to the environmental and safety legislation and obligations to Enemalta plc EMS and SMS;
- assess any difficulties encountered by the contractor in conforming to the above mentioned requirements;
- verify the competency of the contractor's employees whilst they are performing their tasks.

The Lead Auditor will determine the need for these internal audits as well as their frequency and detail depending on:

- the potential environmental, health and safety hazards;
- duration of the contract;
- environmental sensitivity and vulnerability of the territory where the work is being performed;
- the effects on safety within the area that works need to be performed.

All communication and interaction with the contractor shall be through the ENE officers supervising the works or end-users. The audit report shall be filed and kept by the Lead Auditor. A copy of this report will also be distributed to the supplier or contractor via ENE supervising officers or end users.

H&S Section carries out random inspections at all Enemalta plc sites to ensure conformities and report any deficiencies to respective management and follow up pending reports. Contractors carrying out works during the design and construction stage are also subject to inspections from Enemalta's appointed Project Supervisor Design/Construction Stage as per L.N. 281 of 2004.

7 Related documents

DOC 1 - Tender clauses relating to Enemalta Environmental and Safety Management System

DOC 2 - Contractor's Briefing & Employee Training

DOC 11 - MPS Briefing Document for Contractors and Visitors

DOC 12 - DPS Briefing Document for Contractors and Visitors

DOC 13 - Distribution Briefing Document for Contractors and Visitors

MP 4

Nonconformities, Corrective and Preventive Actions Management Procedure

Revision list

Revision no.	Description	Written By/ Revised By	Date
0	First issue	C. Abela	04.10.2010
1	Modified MP to current Audit Follow-up practices	R. Tabone & S. Scicluna	05.07.2013
2	Modified MP to current Audit Follow-up practices	R. Tabone & S. Scicluna	02.05.2014
3	Integrated SMS with EMS documents	F. Marsh	24.04.2016

Revised By:	Verified by:	Approved by:
[Signed] F. Marsh Lead Auditor	[Signed] P. Conti Environmental & Safety Coordinator	[Signed] S. Scicluna Management Representative

Contents

1 Aim and scope

The objective of the procedure is to define responsibilities and detailed rules used by ENE to identify nonconformities (NC) and their root causes, plan and carry out corrective actions (CA) and preventive actions (PA).

The aim of the NC, CA and PA is to address and eliminate the root cause or potential nonconformities in order to improve the EMS and SMS performance.

This procedure is also aimed to record and keep track of environmental and safety NCs identified by other sections within ENE, such as the Health & Safety Section.

EMS Scope

The procedure is applicable to all ENE activities within the EMS scope.

SMS Scope

The procedure shall apply to activities within the SMS scope. These include Delimara Power Station and related Administration Departments.

2 References

EN ISO 14001:2004, clause 4.5.3

OHSAS 18001:2007 Clause 4.5.3.2

3 Terms and Definitions

ENE Enemalta plc

EMS Environmental Management System

SMS Safety Management System – this applies only for Delimara Power Station and related Administration

NC Nonconformity: non-fulfilment of a requirement

CA Corrective action: action taken to eliminate or control the effect (or impact) of a detected nonconformity or other undesirable situation

Note 1: There can be more than one cause for a ‘nonconformity’.

Note 2: A Corrective action shall also prevent recurrence of the same incident.

PA Preventive action: action taken to eliminate the effect (or impact) of a potential nonconformity or other potentially undesirable situations.

Note 1: There can be more than one cause for a potential nonconformity.

Note 2: A Preventive action is taken to prevent occurrence of an incident before occurring in the first place.

NC Register This is a register containing the records for NC and corresponding CA and PA. This register is in the form of a database application.

4 Responsibilities

Management Representative (MR)

- provides resources for CA and PA as required
- ensures that there is good communication amongst other ENE sections which may identify environmental and safety non-conformities

Environmental and Safety Coordinator (E&SC)

- verifies the records entered in the NC Register against the audit reports of each respective internal audit
- closes off the action plan when all issues have been tackled
- forwards to the Lead Auditor any inspection reports received by other ENE section which include environmental related NCs

Document Controller

- Keeps track of all documents
- Responsible for the management of all EMS and SMS documents
- Responsible for the distribution of all EMS and SMS documents
- Updates the Document Control Database
- Co-ordinates with the Portal Coordinator
- Co-ordinates with the Enemalta Website Coordinator

Environmental and Safety Representative (ER) & (SR):

- controls NC, CA, PA management within his competence
- verifies the implementation of the CA and PA
- gives support to the Lead Auditor to manage NC, CA and PA

Lead Auditor

- controls NC, CA, PA management within his competence
- verifies the implementation of the CA and PA
- plans, coordinates the audit, defines audit conclusions and prepares the audit report
- issues an audit report stating any non-conformances and/or recommendations are identified during the audit
- assesses the effectiveness of the CA, in collaboration with ER, SR and section responsible person
- updates the NC register and follows up the implementation of CA and PA arising from internal audits carried out
- updates the NC register, following communication from other ENE sections
- the database has different fields for SMS and EMS so that items will be recorded more specifically

Auditors

- carry out the internal audits with the lead auditor
- Their area of expertise will be the safety, environment and/or site/operation specific

H&S Section

- Informs E&SC of any inspection carried out which includes any environmental and/or safety related NCs/recommendations.
- informs E&SC of any update or closure of NCs/recommendations reported

5 Frequency

This document should be reviewed and updated every twelve (12) months, unless it is deemed necessary that it should be revised prior.

6 Detailed procedural rules

6.1 Identification of NC

NC or other undesirable situations may be identified as follows:

(i) by internal or external auditors,

(ii) by inspections carried out by other ENE sections

(iii) by any ENE staff;

(iv) following internal/external communications.

In the case of (i), when audits are carried out internally by the Lead Auditor, the latter issues an audit report to the auditees and personnel concerned, including any recommendations or nonconformities detected.

In the case of (ii), when audits are carried out internally by other personnel such as ENE H&S section, the specific section will issue a report which is submitted to the Lead Auditor and to any personnel concerned, including any recommendations or nonconformities detected. The Lead Auditor shall place these NCs or recommendations in the NC register and follow-up until closure of NC.

In the case of (iii), when ENE staff identifies an undesirable situation, the person who has identified the situation shall describe to the competent ER or SR or E&SC what has happened. The ER or SR shall inform the E&SC accordingly. The communication may occur either by phone or by e-mail.

A communication regarding potential non conformities can also be sent.

The E&SC or competent ER and SR, whoever receives the communication, shall evaluate the situation. He can ask for more information to the person who sent the communication or to any interested parties.

6.2 Planning CA

Once the auditees approve the audit report, the NCs and Recommendations will be entered in the NC register. The E&SC will verify against the internal audit reports that all nonconformities and recommendations issued have been registered in the NC register. The Lead Auditor will also monitor the NC and recommendation status.

In the case of EMS and SMS related internal and external audits, the Lead Auditor shall issue the Audit Report stating any NC or Recommendation. This Audit Report shall be addressed to the concerned ER or SR, responsible person and his direct superior.

A collective Audit Report will be issued identifying specific items for EMS or SMS for a more efficient outcome.

The ER and SR shall:

- propose to the E&SC, Lead Auditor and to the responsible engineer(s) involved in the situation the immediate course of action to be taken in order to eliminate or minimise consequences;
- together with the Lead Auditor and with the responsible engineer(s) involved in the situation, analyse and identify the cause/s for the NC/undesirable situation;
- decide if a CA is needed to rectify the problem;
- in the case of a potential NC, decide on the PA required;
- propose the CA or PA and the responsible for the CA/PA.

The responsible person(s) will allocate the necessary resources to implement the CA/PA.

The responsible person(s) of each item in each specific action plan shall carry out the planned activities using the available resources and shall inform the Responsible Engineer, the ER and SR and the Lead Auditor of any problem that might occur.

The Lead Auditor shall monitor the status of the pending issues in the Audit Report when applicable, verify the closure of any items and shall update the NC Register accordingly.

The E&SC shall be informed by the Lead Auditor of all pending issues and shall assess the effectiveness of the actions and check the coherence between all ENE corrective and preventive actions.

6.3 Checking and closure of pending issues

Whilst in the planning stage, the ERs/SRs and responsible person(s) shall define the effective benefit of the actions taken (elimination of the cause/s for potential or identified NCs) and will plan on carrying out a check on the effectiveness of the actions. The verification shall be carried out by the Lead Auditor after the completion of the pending items. Internal audits can also be planned to check the effectiveness of the CA/PA. The process flow for the NC and CA process flow is shown in Figure 1.

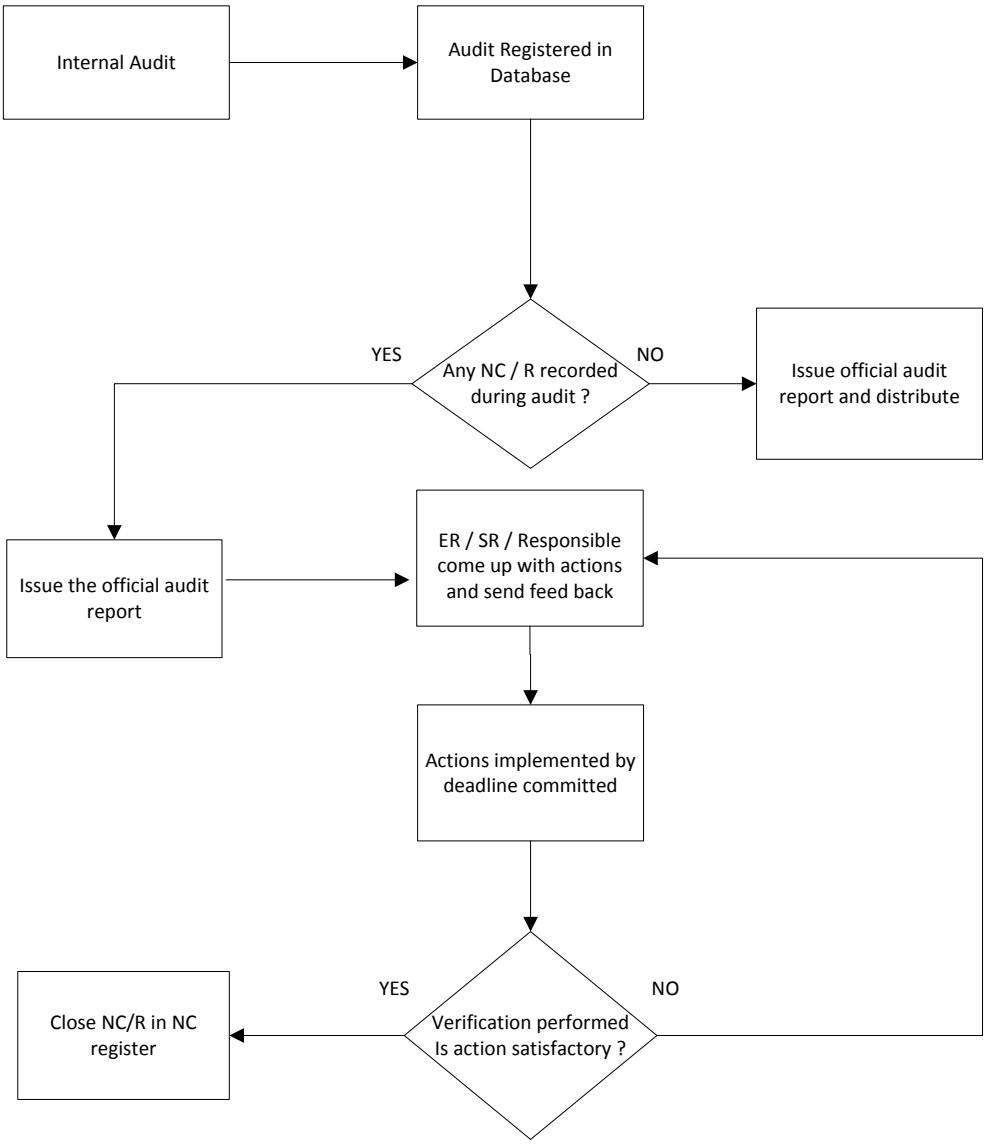


Figure 1 A flow chart representing the NC and CA process flow

6.4 Records

The Lead Auditor shall keep all the action plans and internal environmental and safety communication forms and is to inform the Document Controller about any modifications to EMS and/or SMS documents that are necessary as a result of the implementation of the CA or PA.

7 Reference documents

Non Conformance Register (NC Register)

MP 6

Competence, Training and Awareness Procedure

Revision list

Revision no.	Description	Written By/ Revised By	Date
0	First issue	C. Abela	04.10.2010
1	Inclusion of employee's competence in 1 Aim and Scope Introduction of new role MODP Inclusion of 2 new paragraphs numbered as 5.1 Definition and communication of roles and responsibilities and 5.2 Selection and recruitment Renumbering of original clause 5.1 to 5.3 Identification of training needs, 5.2 to 5.4 Training plans, 5.3 to 5.5 Training and recording and 5.4 to 5.6 Training effectiveness assessment	C. Abela	28.06.2011
2	Modified MP to current Training and HR practices, including: - Update of Organisation Chart - Clearer definition of requirements for managing communication and exchange of information between HR and Training - Reference to Contractor Training - Other changes to reflect current operating practices	S. Scicluna/ R. Balzan	11.06.2014
3	- Change in Company name from Corporation to plc - Amalgamated MP for EMS with SMS. - Roles of Policy Management & industrial relations Manager with DMHR roles. - Training Centre responsibilities transferred to Training Responsible Person.	P. Conti	06.04.2016

Revised By:	Verified by:	Approved by:
P. Conti Environmental and Safety Coordinator	M. C. Sant Bezzina Training Responsible Person	R. Balzan Divisional Manager Human Resources S. Scicluna EMS Management Representative

Contents

1 Aim and scope

This procedure defines the rules, roles and responsibilities adopted by Enemalta plc (ENE) to:

- identify and define skills needed associated with ENE environmental and safety aspects and with its environmental and safety management systems;
- ensure that all ENE employees gain the necessary competence;
- identify training needs;
- make persons aware of:
  - the environmental and safety policies and its contents
  - the importance of conformity with the environmental and safety policies and procedures;
  - the significant environmental/safety aspects and related actual or potential impacts associated with their work, and the environmental/safety benefits of improved personal performance;
  - their roles and responsibilities in achieving conformity with the requirements of the environmental and safety management systems;
  - the potential consequences of non-conformity to the specified procedures.
- develop plans to plan, provide and record training;
- evaluate the effectiveness of training.

Scope of the EMS:

Specific parts of this procedure relating to the environmental management system are applicable to all departments which fall under the EMS scope, whose activities can have an influence on the environmental impacts of the organization.

Scope of the SMS

Specific parts of this procedure relating to safety management system are applicable to the departments which fall under the SMS scope. These include Delimara Power Station and related Administration Departments.

2 References

EN ISO 14001:04, clause 4.4.2

OHSAS 18001:07, clause 4.4.2

3 Terms and Definitions

Education	activity of illustration, information or instruction, geared to enhance and grow the level of culture and professionalism of staff, to achieve a set of or a specific objective within the activities of expertise
Training	teaching theory and practice, oriented to teach procedures to perform a specific task, to improve the recipient's performance and awareness or to help him or her attain a required level of knowledge or skill
DMHR	Divisional Manager Human Resources
ENE	Enemalta plc
EMS	Environmental Management System
SMS	Safety Management System – this applies only for Delimara Power Station and related Administration
MR	Management Representative
E&SC	Environmental and Safety Coordinator
ER	Environmental Representative
SR	Safety Representative
ERP	Emergency Response Plan
ERT	Emergency Response Team
CPD	Civil Protection Department

4 Responsibilities

Management Representative (MR)

- Oversees that this Management Procedure is being adhered to by the HR Department and Training Department
- Approves request for training by the E&SC
- Recommends to the Training Department any EMS Training needs to be included in the Training Centre's budget and plans

Divisional Manager Human Resources (DMHR)

- Approves training budget and plans
- Approves requests for external training
- Informs Training Department of any recruitment or redeployment of personnel so that they can be provided with the necessary training related to their new position and work location as per **DOC 18 - Job Grade Training Requirement Document**
- Ensures that when new job descriptions are compiled, or existent ones are revised, reference is made to environmental management system awareness and compliance (or safety management system where applicable)
- Ensure that all employees and third parties are adhering to ENE policies
- Promote existing EMS and SMS policies to increase relative awareness throughout ENE
- Ensures that during internal or external interviews, a set of evaluation criteria regarding the candidates' competencies and skills vis-a-vis the EMS and SMS policies will be adopted
- Liaises with Section Managers in order to include objectives regarding the EMS and SMS (where applicable) within the Professional Executives' Annual Performance Appraisal
- Promotes EMS and SMS policies in order to ensure that all employees and third parties are aware and adhere to such policies
- Ensures that when new policies are compiled, or existent ones are revised, reference is made to environmental and safety management systems awareness and compliance
- Ensures that should employees and third parties breach the EMS and/or SMS policies by negligence, he is to be notified and is responsible to take disciplinary action should same employees have repetitive cases. An official report is to be drawn up using the document EMS/SMS Infringement Feedback Form, which is available on the Enemalta Intranet Portal at location:

Documents/Environmental Management System (EMS)/Forms/frm1.1-ems infringement form

Training Department Responsible Person

- Provides the means and adequate resources to plan and carry out training activities
- When a change in the job descriptions have occurred, the Training Department Responsible Person is to inform the E&SC to effect the necessary changes to the Job Grade Training Requirement Document (if any) and determine which grades are affected by these changes (for example, new legal obligations) so as to plan and carry out required training, in co-ordination with the Section Managers
- Assesses priority of training activities with the Divisional Manager HR and Section Managers
- Manages the organisation and delivery of internal and external training

- Keeps training records
- Follows up on filled Training Evaluation Forms and sends feedback to the E&SC

Section Managers

- Identify training needs in relation to issues of work related to the function and competence of their subordinates
- Recommend relevant training

Environmental and Safety Coordinator (E&SC)

- Identifies specific EMS and SMS training needs and inform Section managers and Divisional Manager Human Resources
- Follows up with Training Department Responsible Person on requests for training by individual personnel, ER/SR or Section Managers
- Modifies the Job Grade Training Requirement Document and distributes the latest revision to the Training Department as per ongoing changes (for example, new Legal obligations)
- Analysis Training Evaluation Forms feedback and adjusts training material accordingly

Environmental and Safety Representative (ER and SR)

- Identifies specific EMS and SMS training needs and informs the E&SC and Section Managers

Responsible Officer

- In case of third party contractors, ensures that these are informed of ENE's commitment towards the environment and safety and are provided with the necessary documentation related to the EMS/SMS. This is to be carried out through the document **DOC 2 - Contractor's Briefing & Employee Training** as per section 5.6.

Environmental Representative Legal Obligations

- Inform E&SC of new legal obligations in order to propose new training material and necessary actions. E&SC will then liaise with the Training Department to deliver such training in order to ensure that ENE staff whose activities are directly related to the new legal obligation are aware and compliant to these new obligations

Health, Safety and Environmental Officer (HSE Officer)

- Inform E&SC of new /changes in the legal obligations related to the Operational Health and Safety in order to propose new training material and necessary actions. E&SC will then liaise with the Training

Department to deliver such training in order to ensure that ENE staff whose activities are directly related to the new legal obligation are aware and compliant to these new obligations

5 Frequency

The related document **DOC 18 - EMS and SMS Training Requirements per related grade** is to be updated when any new grade is created or a job description change occurs which directly affect the training needs.
This procedure will be reviewed together with the Training Department Responsible Person every 12 months, or before if deemed required.

6 Detailed procedural rules

6.1 Definition and communication of roles and responsibilities

The Divisional Manager HR is responsible to liaise with the concerned managers to establish tasks, duties and responsibilities for each position / title of ENE staff and to define specific skills required for the job. The DMHR shall document these duties and responsibilities in the “job description”. Each job description shall also include the specific skills, experience and competences required for the post.
He shall also ensure that when new job descriptions are compiled, or existent ones are revised, reference is made to environmental management system awareness and compliance (or safety management system where applicable). The DMHR is responsible to communicate these job descriptions to the existent employees within that particular grade or to interested candidates.

6.2 Selection and recruitment

- The DMHR is responsible to plan and carry out the selection process and recruitment of newcomers or of internal employees who apply for an internal vacancy.
- The DMHR shall coordinate the selection board to ensure that the eligible candidates meet the specific skills and experience as defined in the "job description".
- The DMHR shall ensure that during internal or external interviews, a set of evaluation criteria regarding the candidates' competencies and skills vis-a-vis the EMS and SMS (where applicable) policies will be adopted.
- The DMHR shall inform Training Department of any recruitment or redeployment of personnel so they can be provided with the necessary training related to their new position, as per **DOC 18 - EMS and SMS Training Requirements per related grade.**

6.3 Identification of training needs

Identification of training needs can be performed by:

a) Individual employees who communicate their training needs through the official request form **"Training Request Form (Employee Request)"**, to the DMHR, found on the Enemalta Intranet Portal at location:

Resources/Forms and Templates/Training Centre

b) Section managers that communicate for internal or external training required for their section personnel through the appropriate form **"Training Request Form (Head/Manager Request)"** to the DMHR, found on the Enemalta Intranet Portal at location:

Resources/Forms and Templates/Training Centre

The E&SC, ERs and SRs may also identify specific environmental training needs associated with:

- The implementation of specific EMS and SMS standard operating procedures (SOPs)
- The compliance with legal requirements (in particular training in relation to IPPC permits)
- Prevention or reduction of environmental impacts or risks
- Familiarisation training on the IPPC permit obligations for generating station staff
- Familiarisation training on the COMAH obligations for the DPS staff
- Any other relevant environmental and safety aspects

Where deemed necessary, the E&SC shall communicate the environmental and safety training needs to the competent Section Managers and DMHR so such training can be coordinated.

A detailed description of the course is attached to the training proposal. This will include:

- topic
- duration
- cost

Training needs may also be identified through Internal Audits. The Lead Auditor, through the compiled audit report, will inform the Section Manager of the training requirements of his personnel, after verification with the Training Department that such training has not been carried out yet.

Section Managers can use the performance appraisal to recommend training when reviewing the employee's performance.

6.4 Training plan

The DMHR is responsible to:

- Draw up annually the annual training plan, taking into account environmental and safety training needs which are identified as per Section 6.3, or as resulting from changes in processes, legislation, environmental aspects evaluation, risk assessments reviews, etc. The annual plan should also include the number of hours and the cost of EMS and SMS related training courses to be conducted.

6.5 Training and recording

Training courses can be carried out either internally or externally (i.e. at different sites other than ENE premises).

- External courses are conducted only by accredited lecturing staff or training institutions. For external courses, certificates of attendance are issued and kept by the Training Department, together with, where application by legislation or by ENE, the course examination, practical tests or interview pass certificates.
- For internal courses, the certificate of attendance is usually replaced by a certificate of attendance, issued by the Training Department. The attendance records are kept in the HRMS Training Module. Also reports can be generated through the Oracle BI Tool to identify training progress and perform other analysis.

For each employee, the Training Department keeps and updates a personal training record in which the following data is registered:

1. personal data
2. qualification/s
3. training provider
4. date and hours of training
5. job title
6. courses taken, their duration and their assessment where applicable

6.6 Contractor Training

When there is a Contractor working on Generation or Distribution sites, the responsible officer/s will oblige the Contractor (or his/her representative) to train his/her employees working on the contract, on the contents of environmental and safety (where applicable) related documents. This training may be carried out in conjunction with ENE personnel depending on the nature and duration of the work. The contractor (or his/her representative) will then sign **DOC 2 - Contractor's Briefing & Employee Training** the documents confirming that they have understood the contents of these documents and that they will deliver the relevant training to their employees. This document is available on the Enemalta Intranet Portal at location:

Documents/Environmental Management System (EMS)/DOCs/

Enemalta may ask for training evidence when deemed necessary

6.7 Training conveyed to employees

Training Name	Description	If internal, define section, otherwise state external	Frequency
Basic Fire Awareness	Conveyed to all employees within the company	Previously Internal – Fire Section Will now be carried out externally	Every 4 years
Emergency preparedness & Emergency Response Plan	Conveyed to all employees within the company, giving importance to each specific ERP depending on the section	Internal	Every 4 years
Emergency Response Team (ERT)	ERT members stationed at DPS to act as first responders and assist CPD on arrival when the need arises	Internal & External	Every 4 years
First Aid	Conveyed to all ERT members and volunteers in all sections	External	Every 3 years
EMS awareness / refresher	Conveyed to all employees within the company	Internal	Every 4 years
IPPC awareness	Conveyed to all employees within the Generation Department	Internal	Every 4 years
Basic H&S awareness or refresher	Conveyed to all employees within the company	Internal	Every 4 years
Risk Assessment	Conveyed to all supervisory staff	Internal	When required
Confined Space	Conveyed to all employees that are medically fit and might need to enter in confined spaces	Internal	Every 4 years
Working at heights	Conveyed to all employees that are medically fit and might perform work at heights	Internal & External	Every 4 years
Breathing Apparatus and masks	Conveyed to all ERT members and employees that enter confined spaces	Internal & External	Every 4 years & when necessary
Chemical Handling	Conveyed to all employees that might come in contact with hazardous substances	Internal	Every 4 years
Oil & Chemical Spills	Conveyed to all employees that are within area where hazardous substances are stored or handled	Internal	Every 4 years
SF_6 Basic Awareness	Module A to employees working with or in the proximity of SF_6 filled apparatus.	Internal	Every 4 years
SF_6 further training	Module B1, B2, C1 and C2 to employees working within the maintenance section of the SF_6 filled apparatus.	Internal & External	Every 4 years
Argonite Awareness	Conveyed to employees working on and in the proximity of the fire protection system on D3	Internal & External	Every 4 years

6.7.1 Induction Training for new Employees

All employees on commencement of work within Enemalta plc must attend to the below mentioned courses. These will be organised by the HR Department Training Responsible together with the E&SC to ensure that all employees will be fully aware of all Safety and Environmental obligations of the company and the employee themselves.

- Basic Health and Safety
- EMS Awareness
- Basis Fire Awareness
- Emergency preparedness & Emergency Response Plan
- Specific training depending the grade and section where the new employee will be deployed as per **DOC 18 - EMS and SMS Training Requirements per related grade** which is available on the Enemalta Intranet Portal at location:

Documents/Environmental Management System (EMS)/DOCs/

6.7.2 New Projects

In the initial stages of planning a new project, the Section Manager or Project Manager would identify the training needs and informs the Training Department Responsible Person to plan all training needed. This should be conducted prior to the initiation of any works to ensure that all internal employees or external contractors are aware of all environmental and safety risks and hazards their works could cause during their course of duty

6.7.3 Contractors working on behalf of Enemalta plc and within Enemalta sites

Contractors working within an Enemalta site and / or on an Enemalta project might be requested to supply Enemalta with supporting documents for training conducted to their employees in relation to health and safety and environment. All contractors need to sign **DOC 2 - Contractor's Briefing & Employee Training** as previously stated in section 6.6.

6.8 Training effectiveness assessment

For external environmental courses the training effectiveness is completed by:

- Keeping attendance records
- Keeping external certification issued by external accredited institution

For internal courses the effectiveness assessment of training is completed by:

- Keeping attendance records
- Review and follow up of training evaluation forms filled by attendees

All ENE employees who attend internal training may be required to fill the training evaluation forms provided upon course completion. These training evaluation forms shall include:

- Few questions to determine an overview of the knowledge acquired during the course
- Question about relevance of course content to the employee's day-to-day duties
- Section for suggestion for improvement for future training related to course content, instructor/s, practicality, delivery and location

The filled in forms are collected by Training Department and evaluated. A report is compiled and forwarded to the Environmental and Safety Coordinator for further actions if required.

7 Related documents

FRM 1.1 – EMS/SMS Infringement Feedback Form

Training Request Form (Head/Manager Request)

Training Request Form (Employee Request)

Annual training plan

Training attendance records

Training Evaluation Forms

Personal training and qualification record

DOC 18 - EMS and SMS Training Requirements per related grade

DOC 2 - Contractor's Briefing & Employee Training

HRMS Training Module

MP 8

Document Control Procedure

Revision list

Revision No.	Description	Written By/Revised By	Date
0	First issue	C. Abela	27.10.2010
1	Major update to document to reflect current practices	S. Scicluna	16.05.2014
2	Modification to Section 5.4.1 to include the duration for which all EMS records are to be retained	S. Scicluna	02.07.2014
3	Introduced references to Safety Management System	P. Conti / F. Marsh	14.04.2016

Revised by:	Verified by:	Approved by:
P. Conti Environmental and Safety Coordinator F. Marsh Lead Auditor	C. Abela ER Legal Obligations	S. Scicluna EMS Management Representative

Contents:

1 Aim and Scope

The objective of the procedure is to define responsibilities and detailed rules used by Enemalta plc (ENE) to identify, write, verify, approve and distribute Environmental Management System (EMS) and Safety Management System (SMS) documents and forms and to ensure that effective Document Control is maintained. The aim of document control is to ensure that all updated versions of EMS and SMS documents (such as policies, procedures, SOPs, etc) and forms are clearly identified and easily accessible to all ENE employees who would need to use them.

This procedure also defines the method of distribution of all EMS and SMS documents and forms, their replication and deletion, as well as the locations of such documents.

The procedure shall apply to all ENE activities within the EMS and SMS scope.

2 References

EN ISO 14001:04, clause 4.4.5

OHSAS 18001:07, clause 4.4.5

3 Terms and Definitions

ENE	Enemalta plc
EMS	Environmental Management System
SMS	Safety Management System – this applies only for Delimara Power Station and related Administration
RAO	Regulatory Affairs Office
Document	a. Refers to policies, procedures, work instructions, plan, program, meeting minute and other EMS and SMS related documents, meeting ISO compliance, related to Enemalta plc operations b. the medium can be paper, magnetic, electronic or optical computer disc, photograph or master sample, or a combination thereof
Form/Template	Refers to pre-defined documents used for recording information or data, as specified in the EMS and SMS procedures
Record	Document providing evidence of activities performed. Completed forms become records. Records are to be stored in locations indicated in the EMS and SMS Procedures.

EMS Scope	The procedure is applicable to all ENE activities within the EMS scope.
SMS Scope	The procedure shall apply to activities within the SMS scope These include Delimara Power Station and related Administration Departments.
Procedure	A defined way to carry out an activity or a process
SOP	Standard Operating Procedure: An established written procedure to be followed by ENE staff, providing technical and organisational requirements to perform a specific activity
MP	Management Procedure: A Procedure describing the operations carried out by Management or organisational entities in view of ENE's environmental obligations
MR	Management Representative
E&SC	Environmental and Safety Coordinator
ER	Environmental Representative
SR	Safety Representative
DC	Document Controller
PC	Portal Coordinator

4 Responsibilities

Management Representative (MR)

- Approves document control rules
- Approves Management Procedures or Standard Operating Procedures

Environmental & Safety Coordinator (E&SC)

- Proposes document control rules
- Maintains EMS and SMS documents in EMS/SMS Folders on Enemalta Server
- Maintains hard copies of EMS and SMS documents
- Coordinates with Document Controller to ensure effective document control
- Should always review EMS and SMS related documents and forms

Environmental Representative (ER)

- Supports the E&SC in environmental related documentation

Safety Representative (SR)

- Supports the E&SC in safety related documentation

Document Controller (DC)

- Responsible for the management of all EMS and SMS documents
- Responsible for the distribution and notification of all EMS and SMS documents
- Updates the Document Control Database
- Co-ordinates with the Portal Coordinator
- Co-ordinates with the Enemalta Website Coordinator

Portal Coordinator (PC)

- Uploads the latest revisions of EMS and SMS documents on the Enemalta Intranet Portal, in co-ordination with the DC
- Issues a Portal Update notification in case the document uploaded will affect all Enemalta employees

Website Coordinator (WC)

- Uploads the latest revisions of EMS and SMS documents which are applicable to third parties on the Enemalta Website, in co-ordination with the DC

All employees

- Should be knowledgeable of document control rules and thereafter adhere to these rules
- Read, understand and use EMS and SMS documents

5 Frequency

- This document should be reviewed and updated every twelve (12) months, unless it is deemed necessary that it should be revised prior.
- This document should be used whenever a new EMS and SMS document is being compiled, whenever there is a revision of an existing EMS and SMS document or whenever and EMS and SMS document becomes obsolete.

6 Detailed procedural rules

6.1 Introduction

The extent of EMS and SMS documentation varies from one organisation to the other, depending on various factors including the size of organisation, activity performed, etc. EMS and SMS documents should clearly describe how activities carried out by ENE employees incorporate the environmental management system and safety management system respectively. The EMS and SMS documentation may be integrated with readily available documentation already being used by ENE. Documents originally created for purposes other than the environmental or safety management system may be used as part of this system, but are not considered as EMS or SMS documents. However, they can be included in the **Related Documents Section** of EMS and SMS documents. Such documents fall under the responsibility of the relevant section and the section managers/heads are obliged to review these documents periodically and notify the DC when a new revision has been issued.

All EMS and SMS documents are to be clear and easy to read and understand. They should also be clearly identified and related to the relevant process.

EMS and SMS documents include, but are not limited to:

- Environmental and Safety Policies
- EMS and SMS Organisation Charts and Appointments
- Environmental Objectives and Targets
- Environmental Improvement Program
- Environmental Aspects Register

- HAZID and HAZOP
- Environmental and safety performance measurement and Monitoring Plans
- EMS and SMS Manual
- EMS and SMS Standard Operating Procedures, EMS and SMS forms and templates and records
- EMS and SMS Reports and Minutes of Meetings
- EMS and SMS Database
- EMS and SMS Management Review Report
- EMS and SMS Management Procedures
- Safety Objectives and Programs
- Site emergency plans, briefing documents, etc

These documents are listed with revision details in **DOC 14 - EMS and SMS Document List and Status** which is available on the Enemalta server at the address:

enedomain\enedata\SectionData\EMS\DOCUMENT CONTROL\Draft Documents\DOCs

6.2 Preparation, verification and approval of EMS and SMS documents

Each EMS and SMS document shall be:

- **Prepared and written** by a competent person, ideally someone who performs such a task shall be responsible for the activity being documented
- **Listing of documents –** Once a document starts being created this is inserted in **DOC 14 – EMS and SMS Document List and Status** so that it would be easy for all users to identify state of such documents
- **Reviewed** by a person who is able to check the coherence of the various documents, and who has a coordinating role within the organisation, ideally the Environmental & Safety Coordinator by consulting **DOC 14 – EMS and SMS Document List and Status**.
- **Verified** by a person who has authority over the section performing such activity, usually the Manager/Assistant Manager
- **Approved** by a person who has the authority to make the document mandatory across the scope of the document itself, usually the Management Representative/Executive Director/Divisional Manager/Manager/Head of Section

The responsible persons for writing, reviewing, verifying and approving EMS and SMS documents are defined by the E&SC on the first page of each document.

There might be certain instances where the different phases of the approval cycle for a particular document may not be distinct from each other. For example, modules may be prepared (written), verified and approved by the same competent and authoritative person.

The responsible persons writing, reviewing, verifying and approving EMS and SMS documents shall sign the front page of the original hard copy of the document.

6.3 General format of EMS and SMS documents

Each EMS and SMS document shall have a unique document name and number. Each page of the document shall have a header as shown below that includes the following information:

- Status of document (*Controlled document (check latest revision)* or *Draft document*)
- Enemalta logo;
- The name of the file;
- In the case where a document is strictly an EMS document, the words “Environmental Management System” indicating this is an ISO 14001 document;
- If a document is both an EMS and SMS document, the words “Environmental and Safety Management System”;
- Pagination (Page _ of _)

The name of the file shall be clear, related to the contents of the document itself and shall include the:

- Document Number
- Document Name
- Revision Number
- Revision Date

An example of a correct file naming system is:

MP 8 – Document Control Procedure_r1_2014-04-10

The document number is generally composed of a code identifying the type of document and a unique number. Existing document codes are:

- SOP x: Standard Operating Procedure
- MP x: Management Procedure
- FRM x: Forms
- DOC x: Related EMS documents
- EP x: Emergency Plan

The revision number is indicative of the number of times that a document has been issued, beginning with revision 0 (r0), being the original document, and incremented by 1 (that is, r1, r2, r3, etc) whenever a new revision is issued.

The revision date should preferably be in the format:

year-month-day

The cover page/s of all EMS and SMS Documents shall include:

- Document Number
- Document Name
- Revision History as follows:

Revision No.	Description	Written By/Revised By	Date
0	First issue	C. Abela	27.10.2010
1	Major update to document	S. Scicluna	11.04.2014
2			

- Responsible persons for the document will be shown as follows:

Revised by:	Verified by:	Approved by:
P. Conti Environmental & Safety Coordinator	C. Abela ER Legal Obligations	S. Scicluna Management Representative

The cover page/s shall be followed by a **Contents** page.

Procedures and instructions shall be composed of the following sections:

1 Aim and scope
2 References
3 Terms and definitions
4 Responsibilities
5 Frequency
6 Detailed procedural rules
7 Related documents

6.4 Filing of EMS and SMS documents

6.4.1 Hard Copy

The original hard copy of the active (Controlled version) EMS and SMS documents shall be kept by the DC and readily available to the E&SC. Other EMS and SMS documents such as forms and original reports are to be filed and kept at the locations specified in the various EMS and SMS procedures.

Obsolete documents are to be removed by the DC from the Controlled Document section and replaced with the new revision (if available). The obsolete (old) version of the EMS and SMS documents shall be clearly marked as OBSOLETE and stored in the Archive File and retained for at least 5 years unless different requirements are stipulated by permits or by legislation. In this case the latter will prevail.

All records related to the EMS and SMS (templates, signed documents, etc) shall also be retained for at least 5 years.

6.4.2 Soft Copy

The E&SC and DC shall maintain the EMS and SMS Folders on the Enemalta plc server, within a dedicated folder for filing of EMS and SMS documents and other EMS and SMS related documents. However, access to this folder is limited. Only members belonging to the EMS and SMS Security Group will be able to access this folder. This group includes all RAO staff, ERs and SRs, Managers and other ENE personnel who require access, at the discretion of the E&SC. Only the MR, E&SC and DC are allowed **Modify** access rights to the EMS and SMS Folders. All other members of the EMS and SMS Security Group are allowed only **Read Only** rights.

The EMS and SMS folder will be divided into various subfolders. Different sub-folders can be defined for procedures, instructions, plans and programs, or other document categories. The main folder for control of documents is called **DOCUMENT CONTROL.** Subfolders within this folder indicate the status of the EMS and SMS documents as follows:

- **Controlled Documents**: contains active documents
- **Draft Documents**: contains draft (in process) documents
- **Archives**: contains obsolete (superseded) documents

The latest approved documents shall be saved on the EMS and SMS folder in both .doc and .pdf format in a folder marked as **Controlled documents** in the parent folder called **DOCUMENT CONTROL**. Access to the **DOCUMENT CONTROL** folder will be given only to the Environmental and Safety Coordinator (E&SC) and the Document Controller (DC). It is hidden to all other EMS and SMS Security Group members.

All Controlled EMS and SMS Documents are available in .pdf format to all ENE employees who have access to the Enemalta Intranet Portal. Where a computer is not available, ENE employees may ask their direct superior to provide them a hard copy of the latest approved version, which can be downloaded from the Enemalta Intranet Portal. It is important to ensure that any obsolete versions of printed copies of EMS and SMS documents are **DESTROYED**.

6.5 Reviewing and updating of EMS and SMS documents

Whenever a document needs to be updated a request has to be issued to the E&SC and DC via email. The DC will forward a soft copy of the latest revision of the active controlled document in a .doc version to the person issuing the request. Before forwarding the document the header of the document will be changed from "Controlled document" to "Draft document" to show the change of status of the document, from an active document to a draft version.

The movement of the document is to be recorded by the Document Controller in **DOC 14 - EMS and SMS Document List and Status** which is a document that keeps record of all documents currently being edited, person responsible for the editing and other relevant information.

Draft documents shall be saved in the subfolder dedicated for such documents, called **Draft Documents** in the parent folder **DOCUMENT CONTROL**. These documents will be documents which are being revised. Once the update of the document is complete, the document must go through the approval cycle. The same applies for new documents. Once the document has been approved, the .doc version is placed in the **Controlled Documents** folder in the parent folder **DOCUMENT CONTROL** and a .pdf version is saved.

Certain documents, such as the Environmental Improvement Program, may require continuous or frequent updating in order to monitor the status of the activities mentioned. In this case, a formal approval of the authoritative person is obtained initially, usually during the Management Review and then the document is updated periodically without the need for a formal approval each time.

Other documents like SOPs, MPs, etc shall be reviewed as deemed necessary. If no changes are required, the document will be marked in the Document Control System as ***Reviewed but no changes required,*** indicating the date of review and the name of reviewer. If changes are required, the Responsible person and E&SC will liaise to update the document and issue a new revision.

A document should also be reviewed when there are changes in the persons responsible for the document. The document controller is to send the latest version of the document to the new responsible who can either confirm the document (thus the document is marked as ***Reviewed but no changes required***) or suggest changes to the document and a new revision will be issued. The new revision of the document will then go through the normal approval cycle.

6.6 Responsibility of the Document Controller

It is the responsibility of the DC to:

- Ensure that the latest approved revision of the EMS or SMS documents are present on the Enemalta Portal and website
- Communicate and make the necessary arrangements with the PC when a new revision of an EMS or SMS document needs to be uploaded on the Intranet Portal
- Communicate and make the necessary arrangements with the website coordinator when a new revision of an EMS or SMS document needs to be uploaded on the website
- Inform all concerned personnel through adequate channels that a new document or a new revision of a document has been uploaded on the portal and on the website when applicable.
- Ensure that previous versions of the document are removed from the Enemalta Portal
- Save a copy of the obsolete documents (.pdf and .doc) in the appropriate subfolder dedicated for obsolete documents, named **Archives** located in the **DOCUMENT CONTROL** folder
- Keep track of all documents using **DOC 14 - EMS and SMS Document List and Status** as a live document**.**

  This document contains sheets for

  - Documents in Progress
  - SOPs
  - DOCs
  - Management Procedures
  - Other EMS and SMS Documents
  - Emergency Plans
  - Tenders
  - Working Instructions
  - Forms

6.7 Distribution of EMS and SMS Documents

The DC is to maintain the distribution list in the **DOC 14 - EMS and SMS Document List and Status** for each EMS and SMS document. The distribution list is a list of ENE personnel that need to be notified about a change to the document since it is directly or indirectly relevant to their work.

When the document passes the full approval cycle, the header of the revised version will be marked as **"Controlled document"** and the document will be saved in the subfolder for **Controlled** documents in the **DOCUMENT CONTROL** folder.

A .pdf version of the approved Controlled Document is to be sent to the PC, indicating the location where the document is to be uploaded on the Intranet Portal. In the case where a document will affect all Enemalta employees, a Portal Update will be sent by the PC, informing all Enemalta personnel of the new document/revision issued.

When a document applies only to a specific group of Enemalta employees this will be uploaded on the Enemalta Intranet Portal and the notification of the new document to the concerned personnel will be issued by the DC. The notification will be issued via the Document Control email address and flagged with a read receipt. In this email, the DC will notify all ENE personnel in the distribution list that a new revision of the document has been issued and provides a link to the document on the Enemalta Intranet Portal. The recipients of this email are asked to read, understand and put in practice the document contents and also to inform their subordinates about the amendment/s to the document. The recipients are also asked to discard any printed copies of the previous revision of this document.

The Read receipt will be kept by the DC as evidence that the concerned parties read the notification that the document was updated and a new revision was launched.

Only signed hard copies of EMS and SMS documents are to be considered as Controlled Documents.

The DC shall ensure that **DOC 14 - EMS and SMS Document List and Status** is updated and makes reference to the latest revision of the Controlled documents.

7 Related documents

DOC 14 - EMS and SMS Document List and Status

MP 9

Safety Management System

Roles and Responsibilities

Revision list

Revision no.	Description	Written By/Revised By	Date
0	First issue	P. Conti	17.04.2016

Written by:	Verified/Approved by:
[Signed] P. Conti Environmental and Safety Coordinator	[Signed] S. Scicluna EMS Management Representative

Contents

1 Aim and Scope

This procedure sets out the Safety Management System (SMS) structure, roles and responsibilities at each function and level within Enemalta plc. It ensures that the requirements of the local OHSA Legislation and relevant EU standards and the Enemalta plc Occupational Health & Safety Policy are met.

This procedure applies to staff, visitors and contractors of Enemalta plc.

2 References

OHSAS 18001:2007 Clause 4.4.1
OHSA Act 2000 – Occupational Health & Safety Authority Act 2000
LN 36 of 2003 General Provisions for Health and Safety at Work Places Regulations
LN 282 of 2004 Work Equipment (Minimum Health and Safety Requirements) Regulations

3 Terms and Definition

ENE	Enemalta Plc
E&SC	Environmental and Safety Coordinator
SMS	Safety Management System - this applies only for Delimara Power Station and related Administration
OHSA	Occupational Health and Safety Authority
OHS	Occupational Health and Safety
EU	European Union
H&S	Health and Safety
HSE Officer	Health, Safety and Environmental Officer within the Health & Safety Section
SDS	Safety Data Sheet

4 Responsibilities

4.1 Top Management

The Top Management is responsible for ensuring that:

- staff with supervisory or management responsibilities are held accountable for the Management of the SMS in areas under their control;
- a risk based approach is adopted for the management of SMS;
- sufficient budgetary provision is made for SMS programmes and initiatives;
- SMS is included on the agenda of Enemalta plc board and senior management;
- meetings are held with the SMS team at regular intervals or when required;
- SMS performance is monitored and periodically reviewed.

4.2 Station, Dispatch, Operations and Maintenance Managers

- Managers are responsible for managing the SMS in the areas under their control to ensure a safe environment for staff, visitors and contractors. These responsibilities include:
  - Leading by example in relation to H&S standards and the promotion of H&S awareness by ensuring that:
    - the risks associated with the activities of the unit are identified and managed effectively;
    - sufficient resources are allocated for H&S matters;
    - local standards and practices comply with legislative requirements;
    - and all Standard operating procedures and guidelines;
    - H&S is discussed regularly at meetings
  - chairing the H&S committee or delegating the role to a senior staff member with an appropriate level of authority;
  - consultation with health and safety representatives and staff;
  - provision and maintenance of safety and emergency equipment;
  - discussion of safety compliance as part of staff performance appraisal.

4.3 Manager H & S

- Provision of a SMS management structure and organisation,
- This will include:
  - appointment of appropriate safety personnel, eg HSE Officer, fire wardens and H&S representatives
  - First aid coordinator and first aiders;
- Ensuring that staff, safety personnel and visiting contractors undertake recommended H&S training;
- Implementation of company's and local H&S policies, procedures and plans;
- Consultation with health and safety representatives and staff;
- Provision of H&S information to staff, visitors and contractors;
- Monitoring, reviewing and assuming accountability for the SMS;
- Performance of Delimara Power Station, with regards to the:
  - SMS performance indicators, including the H&S committee meetings, workplace inspections, trial evacuations and induction of new staff and;
  - OHS legislative compliance of all the station.

4.4 Dispatch, Operations and Maintenance Engineers

- Actively practicing and developing in their staff the appropriate attitudes towards H&S matters;
- Controlling the risks associated with each task that they supervise using a documented risk management process;
- Implementing the company's and local H&S procedures and guidelines;

- Ensuring that they, and the staff that they supervise, undertake all mandatory and recommended H&S training;
- Participating in the investigation of reported incidents, near misses and hazards within the area they supervise;
- Actively participating in workplace H&S inspections and audits.

4.5 Individuals (Staff members, contractors and visitors)

- Each staff member, contractor or visitor at Enemalta plc is responsible for ensuring that his or her own work or study environment and practices reflect high OHS standards in order to protect their own health and safety as well as the health and safety of others.
- The responsibilities include:
  - complying with OHS policy, procedures and instructions;
  - being familiar with emergency and evacuation procedures and complying with the instructions given by emergency response personnel such as emergency wardens and first aiders;
  - participating in meetings, training and other health and safety activities as required;
  - reporting hazards, near misses, injuries and incidents;
  - using a documented risk management process to eliminate or minimize OHS risks where appropriate;
  - using and maintaining safety devices and personal protective equipment correctly;
  - not willfully or recklessly endangering the health and safety of any person at the workplace.

4.6 Staff who engage or manage contractors

- The OHSA Act 27 of 2000 states that independent contractors and their employees are to be regarded as employees of the organisation engaging them in terms of responsibility for OHS. Enemalta plc and those Enemalta staff who engage or manage contractors are therefore responsible for the health and safety of the contractor and the contractor's employees, in relation to all matters over which Enemalta plc has control.
- The responsibilities of Enemalta's staff who engage or manage contractors include ensuring that:
  - the prequalification process is completed prior to awarding the contract (issue of service agreement);
  - the primary contractor completes all the Enemalta plc. contractor induction program;
  - a comprehensive Safe Work Method Statement (SWMS) is completed by the contractor and reviewed by Enemalta staff before work commences;
  - machinery the equipment have to be duly certified and materials used by contractors are safe and are also used in a manner that does not pose a risk to the contractors or to Enemalta staff and visitors;

- contractors are not exposed to health and safety risks arising out of the activities of Enemalta plc;
- contractors use safe work methods;
- contact is maintained with the contractor, providing job supervision and inspection of the quality of the work;
- contractors have statutory compensation and liability insurance;
- contractors report all hazards, near misses, injuries and incidents.

4.7 Contractors

- The responsibilities of contractors are outlined in detail in Enemalta's Health & Safety Manual. The H&S Manual can be found on the Enemalta Intranet Portal on the link below:

  General Information/Health Safety/Health and Safety Manual/view

  Enemalta regards health and safety as a shared responsibility between the contractor, their employees or sub-contractors, and the company itself.
- Therefore, it is the responsibility of contractors to ensure that:
  - they are competent to do the job asked of them;
  - they have the qualifications, training, experience and certificates of competency that will be needed for the job;
  - they have the H&S knowledge required for the job;
  - they maintain the premises in which they work in a safe and healthy manner for themselves and for the Enemalta staff;
  - they employ safe tools and systems of work to do a job;
  - they are equipped with the necessary Personal Protective Equipment (PPE) for the job;
  - electrical power tools are regularly inspected in accordance with **LN 282 of 2004 Work Equipment (Minimum Health and Safety Requirements) Regulations**
  - they comply with appropriate standards;
  - SDSs are provided for all chemicals;
  - instructions and supervision from the contracting company are adequate. Close supervision is required particularly in the case of young or inexperienced workers;
  - NB employees under the age to 18 need to have a separate risk assessment they communicate regularly with their Enemalta contract project supervisor;
  - methods of work are approved by the contract person/project supervisor;
  - they raise any issue that is or may become a health, safety or core business concern;
  - all hazards, near misses, injuries and incidents are reported to their Enemalta contact person/project supervisor.

4.8 Health & Safety Section

- The Health & Safety Section is composed of the Manager H&S, Head of Section H&S and HSE Officers.
- The Health & Safety Section is to provide advice to the company on all affairs regarding H&S matters;
- The company's overall H&S management system is overseen by H&S Section in conjunction with the E&SC;
- The Manager H&S is deemed to be the employer's representative at the corporate level;
- The functions of H&S Section include:
  - developing strategies and programs to minimise the risks of injury, illness and damage to property
  - maintaining H&S legislative compliance;
  - provision of information and advice on H&S risk management and legislative compliance;
  - monitoring of personal exposures to and/or environmental breaches of hazardous substances;
  - managing the content of H&S training courses for staff and providing specific training where required;
  - ensuring that at required health surveillance obligations are conducted;
  - conducting internal H&S audits;
  - liaising with, and reporting to, statutory and external authorities;
  - providing expert advice pertaining to occupational hazards
  - participating in the investigation of serious incidents
  - monitoring the H&S performance of all the organization's sections
  - benchmarking H&S systems and practices with associated industry peers

4.9 External Health & Safety Consultants

- The responsibilities of the external Health & Safety Consultant could include:
  - Providing strategic advice to senior management regarding the SMS
  - Reviewing and analysing incident trends and advising about programs to mitigate their impact;
  - Monitoring and reporting on SMS performance to senior management;
  - Providing advice, instruction and training service to staff when required.

4.10 H&S Chairperson (appointed by H&S Manager)

- The responsibilities of the H&S chairperson include:
  - Ensuring that the H&S committee meetings are held at least 6 times a year;
  - Use of the H&S committee agenda template and allowing for the addition by members of items to the agenda prior to the meeting;
  - Taking of utilising the H&S committee minutes template which and are to be made accessible to all members of the section/ department;
  - the appropriate members of the committee are invited and empowered to raise items to the committee's attention;
  - Ensuring that all corrective actions arising from the H&S committee are implemented in an efficient manner or escalated when they are not able to be resolved locally.

4.11 Health & Safety Representatives

- A Health & Safety representative is an employee representative who has been elected for a term of 3 years by the Enemalta employees to represent their health and safety interests.
- Health & Safety representatives have a range of statutory rights under the **LN 36 of 2003 General Provisions for Health and Safety at Work Places Regulations, 2003** including:
  - He/she will be consulted, so far as is reasonably practicable, on:
    - any proposed changes in the workplace or to the materials, equipment or procedures used that may affect the health and safety of staff;
    - risk assessment of new and existing materials, equipment or procedures that may affect the health and safety of members within the company;
    - the development of OHS policies and procedures;
    - OHS hazard and incident investigation;
    - the provision of OHS information, instruction and training.
- In extremes cases direct work to cease where there is an immediate threat to the health and safety of any person;
- Attend workplace inspections and audits, including those carried out by the OHSA;
- Shall be given access to any information, except that which is medically confidential, on:
  - the health and safety of the staff in the area they represent; and
  - actual or potential hazards in the workplace;
- Shall be granted paid leave to attend health and safety training courses;
- Shall have access to the facilities and assistance to enable them to perform their role at all times.

4.12 First Aid coordinators (H&S officers appointed by the H&S manager)

- The responsibilities of First Aid coordinators include:
  - acting as focal point for communication between first aiders in the work area and OH&S;
  - assisting with the first aid assessment of the unit/controlled entity;
  - allocating specific duties to first aiders;
  - ensuring that first aid kits, supplies and equipment are maintained;
  - monitoring the record keeping associated with first aid kits, supplies equipment;
  - liaising with the area H&S committee and H&S Section.

4.13 Site Nurse and/or First Aiders

- It is the responsibility of the Site Nurse and /or First Aiders to:
  - respond promptly to provide emergency first aid treatment for injury/illness as required, while always working within their level of competence;
  - arrange prompt and appropriate referral as required;
  - keep confidential all information received in the course of their duty (medical information must only be released to medical staff);

- record all treatment (however minor);
- encourage staff who have had an occupational injury/illness to file this with the HR department;
- attend training as required;
- maintain First Aid facilities, including First Aid equipment, checking and restocking of First Aid kits as necessary;
- report any deficiencies in the First Aid service to their First Aid coordinator.

4.14 Fire wardens (Building wardens or Emergency Floor wardens)

- Building wardens are appointed by the head of department to act as the overall controllers for a building in an emergency situation.
- Their role is to:
  - establish the nature of emergency where possible;
  - order the evacuation where necessary;
  - control the evacuation; and
  - provide an accurate situation report to the attending Emergency Services;
  - report and discuss deficiencies or faults with the evacuation system or process at the H&S committee
- Emergency floor wardens are appointed to assist the building warden in the orderly evacuation of the building. Under the guidance of the building warden, they:
  - systematically check all areas they have been assigned;
  - inform staff and visitors of the requirement to evacuate;
  - prevent staff/visitors from re-entering the building until the all clear has been given;
  - provide an accurate picture of the state of evacuation to the building warden or attending Emergency Services; and
  - record details of evacuations on the Floor Warden Evaluation form.(to be created)

5 Frequency

This document shall be reviewed every 24months or as deemed necessary by the E&SC.

6 Related Documents

SMS Organisation Chart
Enemalta Health & Safety Manual

MP10

Internal & External Communication Procedure

Revision list

Revision No.	Description	Written By/Revised By	Date
0	First issue	S. Scicluna	06. 04.2016
1			
2			

Written by:	Verified by:	Approved by:
S. Scicluna Management Representative P. Conti Environmental and Safety Coordinator	D. Vella Communications Manager	G. Agius Executive Director Projects, Regulatory Affairs & Corporate Services

Contents:

1 Aim and Scope

The objective of the procedure is to define the internal communication within Enemalta plc in relation to the Environmental Management System (EMS) and Safety Management System (SMS).

This document also emphasises the importance of the involvement and commitment of the organisation's top management to ensure an effective EMS and SMS.

This procedure also defines the external communication with customers, stakeholders, press and general public in relation to the EMS and SMS.

The procedure shall apply to all ENE activities within the EMS and SMS scope.

2 References

EN ISO 14001:04, clause 4.4.3.

OHSAS 18001:07, clause 4.4.3.1

3 Terms and Definitions

ENE	Enemalta plc
EMS	Environmental Management System
SMS	Safety Management System - this applies only for Delimara Power Station and related Administration
RAO	Regulatory Affairs Office
EMS Scope	The procedure is applicable to all ENE activities within the EMS scope.
SMS Scope	The procedure shall apply to activities within the SMS scope. These include Delimara Power Station and related Administration Departments.
MR	Management Representative
E&SC	Environmental and Safety Coordinator
OHSA	Occupational Health and Safety Authority
MEPA	Malta Environment and Planning Authority is the national agency responsible for planning and environmental regulation
MCCAA	Malta Competition and Consumer Affairs Authority is the national agency that safe guards the consumer and promote sound business practices, adopt and co-ordinate standards in relation to products or services
CPD	Civil Protection Department –the national Fire and Rescue department
REWS	Regulator for energy and water services to promote energy efficiency and renewable

4 Responsibilities

Top Management

- Provide adequate resources for the operation of the EMS and SMS
- Appoint a manager to have ongoing operation responsibility of the EMS and SMS. This person is referred to as the Management Representative
- Set up an effective system of communication to ensure effective operation of the EMS and SMS
- Establish the Environmental/Safety Policies and the Environmental/Safety Objectives
- Communicate environmental/safety commitment by allocating budget for continuous improvement using corrective action and preventive action, training, internal auditing and infrastructure expenditures.
- Communicate the company's consistency to its stakeholders via its Environmental/Safety policies, ISO 14001 certification, and management commitment.

Management Representative (MR)

- Oversee the creation of EMS and SMS
- Ensures that the processes needed for the EMS and SMS are established, documented, implemented and maintained
- Review the operation of the EMS and SMS
- Report to top management on the performance of the EMS and SMS and any improvements needed, through management review meetings or other meetings
- Take up to top management meetings any issues which require immediate action
- Promote awareness of EMS and SMS throughout the organization
- Communicating the importance of meeting requirements, including customer, legal, and regulatory requirements

Environmental & Safety Coordinator (E&SC)

- Communicates to the MR the status of the EMS and SMS through internal audits, management review meetings and status update of the EMS and SMS objectives
- Communicating the importance of meeting requirements, including customer, legal, and regulatory requirements,

All employees

- Should be knowledgeable of this document and thereafter adhere to these rules
- Read, understand and use EMS and SMS documents

5 Frequency

- The frequency of management review meeting is specified in the EMS Manual as at least once every year.
- The frequencies of meetings with top management are determined by the needs of or challenges to the organisation.
- The frequency of meetings with between the E&SC and the MR are determined by the needs of the EMS and/or SMS.
- Update of the Intranet Portal – as required from time to time due to update changes in documents.
- Updates to the website – as required from time to time due to update changes in documents.

6 Detailed procedural rules

6.1 Introduction

Effective communication implies real two-way exchange of information. Both the sender and receiver must be actively engaged and providing feedback for it to be effective.

6.2 Internal Communication

6.2.1 Communication between MR and Top Management

The Management Representative is to establish regular meetings with Top Management to update on the progress of the EMS and /or SMS or to report any environmental/safety issues which require discussion immediate action from top management. This is achieved by booking a slot in the top management meeting which is held at least once a month.

6.2.2 Communication to all employees

Through the Intranet Portal and by means of a magazine called **EneInfo** an in-house publication.

6.2.3 Management Review

The management review meeting will be held as described in the EMS Manual. It will also serve to discuss the SMS for DPS and other safety concept that will be utilized within the company. Furthermore this will serve as a platform to exchange new ideas with an open discussion. This discussion will serve as a platform to obtain funds for new projects that will eventually pay back in time due to cost saving. By investing more in Health and Safety ie increasing awareness and keeping employees well trained, one would reduce incidents and injuries. The Management will then see more tangible results of what is actually required on the field as regard Environment, Safety and Health.

6.3 External Communication

6.3.1 Press Release

Press releases are issued from time to time to notify the general public about any abnormal occurrence or planned exercises.

6.3.2 Company Website

Through the company website, Enemalta informs the general public of all related information regarding the Company.

6.3.3 External to stakeholders

Please refer to **MP 17 - Stakeholders Management Procedure** and the EMS SOPs for contractors as follows:

- SOP CNT 44 - Oil and Chemical Storage Handling and Spill control for contractors
- SOP CNT 45 - Waste Management Procedure for Contractors
- SOP CNT 46 - Contractor Maintenance of AC Units

The Management Procedure can be found on the Enemalta Intranet Portal at location:

The Contractors' SOPs can be found on the Enemalta Intranet Portal at location:
Documents/Environmental Management System (EMS)/Standard Operating Procedures (SOPs)/Contractors/

or on the Enemalta website at:

http://www.enemalta.com.mt/index.aspx?cat=8&art=12&art1=259

6.3.4 External to Competent Authorities

Due to legal obligations, a number of Authorities need to be consulted and notified from time to time. These Authorities are listed below:

OHSA is informed of all occupational health and safety occurrences at the place of work, which include:

- Accident Notification form
- Ill Health notification form
- Injury notification form
- Asbestos notification form (prior removal)
- Construction Notification form (prior all construction works)
- Cranes and hoists
- Lifts
- Forklift and rising platforms
- COMAH – Control Of Major Accident Hazard

Enemalta is obliged to inform and supply **MEPA** with the following items:

- IPPC reports (quarterly and annually)
- Notification of Incidents
- Ambient Air quality monitoring at Marsaxlokk
- Annual Environmental Report
- EPRTR – Environmental Pollutant Release Transfer Register
- COMAH – Control Of Major Accident Hazard

Enemalta supplies **MCCAA** the following reports:

- SF_6 Annual inventory
- Ozone depleting substances inventory
- REACH notifications

REWS is the agency which was formerly known as MRA (Malta resources Authority), and Enemalta is obliged to supply the following reports:

- MRA license reporting
- SF_6 Annual inventory
- Green House Gasses Verifications and Audits.

7 Related documents

DOC 14 – EMS and SMS Document List and Status

Emails sent by Document Controller to inform related personnel of new documents/revisions of existing document

EMS and SMS Training records (internal and/or external)

Management Review Reports

Minutes of Meetings of top management meetings in relation to SMS and EMS

Minutes of Meetings of meetings by the SMS and EMS Team internally or with other sections

SOP CNT 44 - Oil and Chemical Storage Handling and Spill control for contractors

SOP CNT 45 - Waste Management Procedure for Contractors

SOP CNT 46 - Contractor Maintenance of AC Units

MP 17 - Stakeholders Management Procedure

MP 11

Reporting and investigation of work related injuries, ill health and diseases Procedure

Revision list

Revision No.	Description	Written By/Revised By	Date
0	First issue	S. Scicluna	24.04.2016
1			
2			

Written By:	Verified by:	Approved by:
S. Scicluna	M. Falzon J. Micallef	R. Balzan

Contents

1 Aim and scope

The aim of this document is to describe the procedure to be followed by Enemalta personnel and subcontractors working on behalf of Enemalta in relation to the reporting and investigation of work related injuries, ill health, diseases, violent incidents and near misses.

The procedure is applicable to all Enemalta employees during the course of work (refer to section 6.1) as well as subcontractors and third party working on behalf of Enemalta (refer to section 6.2).

2 References

OHSAS 18001:2007, clause 4.5.3.1

Chapter 424 - Occupational Health and Safety Authority Act

Chapter 452 - Employment and Industrial Relations Act

GWU Collective Agreement

EPOU Collective Agreement

ESSU Collective Agreement

3 Terms and Definitions

ENE	Enemalta Plc
E&SC	Environmental and Safety Coordinator
EMS	Environmental Management System
SMS	Safety Management System - this applies only for Delimara Power Station and related Administration
Occupational Health Hazard	A chemical, physical or biological hazard arising in or from the work environment that may cause discomfort or adverse health effects.
Welfare Section	Section within the Human Resources Department (HRD) responsible for injury reporting and processing.
H&S	Health and Safety Section
OHSA	Occupational Health and Safety Authority
Enemalta Personnel	All personnel working directly with Enemalta Plc
Subcontractors/Third party	All personnel working for Enemalta Plc

Incident	An incident can be defined as any dangerous occurrence such as fires, gas leaks or explosions, oil and chemical spillages, damages to any equipment/structure etc. containing asbestos, failure of machinery or lifting equipment, etc
Accident	Any unplanned event resulting in an injury ONLY (not including damage to property, plant or equipment).
Injury	When a person hurts himself/herself at the place of work. Injury leave will be applied in accordance to the Social Security Act.
Fatality	A death
Serious Accident	A significant event which demands a response beyond the routine, resulting from uncontrolled developments with the potential to cause multiple injuries, ill-health or loss of life.
Serious/Major Injury	A major injury which demands a response beyond the routine, resulting from uncontrolled developments with the potential to cause multiple injuries, ill-health or loss of life. This includes: • Death of an employee or third party; • Fracture of any bone other that the wrist or ankle; • Fracture of the skull, spine or pelvis; • Any amputation; • Dislocation of the shoulder, hip, knee or spine injury; • Loss of sight (whether temporary or permanently); • Chemical of hot metal burn to the eye or any penetrating injury to the eye; • An injury resulting from electric shock or electrical burns; • Any injury that leads to loss of consciousness or requires resuscitation; and • Any injury that requires the injured employee to be hospitilised for more than 24 hours than for observation.
Minor Injury	A minor injury may include: cuts, abrasions, bruising and fractured finger.
Violent Incident	Physical or verbal assault or the threat of assault.
N.I. 30 Form	National Insurance Form, also called Report of injury and application for benefits
Ill-Health and Diseases	These include physical or Physiological diseases as a result of work activities such as dermatitis (skin infections) due to use of chemicals, occupational asthma, musculoskeletal disorders as result of using computers or manual handling (repetitive movements), Protection to expecting mothers and the unborn fetus, etc.

T&A Time and attendance is a database where all Enemalta employees' attendance is recorded

4 Responsibilities

Environmental and Safety Coordinator (E&SC)

- Provides the necessary support and environmental and safety documentation

Head of Health and Safety (H&S)

- Ensures that the company is compliant with Health & Safety standards, rules and legislation

Section Web Officer

- The responsible person that inputs employees' attendance into the T & A

Manager/Superior

- The responsible person in charge of the section or group of employees

Injury Officer

- The responsible person that handles all required paperwork once an injury occurs

HSE Officer

- The Health, Safety and Environmental officer investigating the injury

Wages Officer

- Employees that works out payroll for each employee

5 Frequency

This document should be reviewed and updated every twelve (12) months, unless it is deemed necessary that it should be revised prior.

6 Detailed procedural rules

6.1 Injury Occurrence to Enemalta personnel

When an injury occurs, the injured employee:

- Or any of his colleague is responsible for notifying their immediate superior immediately
- Is given first aid treatment at Enemalta by any First Aider or Nurse, if the injury is not major;
- Is taken to the nearest Health Centre or hospital after first aid, or directly in urgent cases
- If driven by other Enemalta personnel, reference is to be made to the **Corporate Vehicles Driving Policy**, which is available on the Enemalta Intranet Portal at location:

  Documents/Policies/Corporate Policies/Vehicle Policy/Corporate Vehicles Driving Policy

  The doctor examining the patient is required to fill in Part 4 of the **N.I. 30 Form** and hand it over to the injured person or the person accompanying him, which is available on the Enemalta Intranet Portal at location:

  Resources/Corporate Forms and Templates/Human Resources Forms/Accident/N.I.30

The immediate superior is responsible to notify Welfare Section (Human Resources Department) and Health & Safety Section regarding the incident through an email as soon as possible. The email addresses are the following:

welfare.em@enemalta.com.mt

health&safety.em@enemalta.com.mt

6.1.1 Reporting requirements

When an injury occurs, the following reporting structure needs to be followed, and all forms are to be sent to the Injury Officer from the Welfare Section (Human Resources Department) within one week:

- The immediate superior is responsible to fill in the **Accident Notification Report Form**, which is available on the Enemalta Intranet Portal at location:

Resources / Corporate Forms and Templates / Human Resources Forms / Accident / Accident Report

This form also requires input from the injured employee and witnesses, if any

- The employee and/or his immediate superior is responsible to continue filling in the **N.I. 30 Form**, already filled in by the doctor.
- The immediate superior is also to provide a copy of the **Risk Assessment and any necessary permits** (like permit to work, confined space permit, etc) related to the work being undertaken by the employee when the injury occurred.

  The injured employee is to fill in the **Consent Form** which allows the HRD to send a copy of the personal details on the employee to the Insurance brokers. This form is available on the Enemalta Intranet Portal at location:

  Resources / Corporate Forms and Templates / Human Resources Forms / Accident / Consent Form
- In the event that the injured person is not in a position to fill in the required forms, these are forwarded to the Injury Officer within the required timeframes without his signature and will be completed at a later stage.

Failure to submit these forms to the Injury Officer within 24 hours will result in disciplinary action.

6.1.2 Welfare Section Obligations

As soon as the immediate superior informs the Welfare Section about the injury, the employee is marked ***Injury Leave (code 106)*** within the Attendance module by the section Web Officer

Once the Injury Officer receives all required forms, the officer checks that all forms have been completed correctly. The Injury Officer will then:

- Check with the Enemalta Registry Department whether an Injury File already exists for the injured employee.
  - If file exists, this is retrieved and all received and vetted forms are placed within this file
  - If file does not exist, a new file is created and all received and vetted forms are placed within this file
- For the N.I. 30 Form
  - Fill in the *Employer Part* of the N.I.30 Form
  - Send the original copy of the N.I.30 Form to the Social Security Department within 10 days from the injury

- Send a copy of the N.I.30 Form to OHSA within 7 days from the injury
- Keep a copy in the injury file of the injured person.

- Compile the **Notice of Incident Form,** which is required for insurance purposes.
- Send the injury file containing the **Accident Notification Report Form** and **Risk Assessments and any necessary permits** to the Health & Safety Section so that the HSE Officer can investigate the injury.
- Inform Wages Department by email to submit the payslips of the employee, one original and one copy, for insurance purposes. The Wages Department will, upon receiving the Accident Investigation Form Report from the HSE Officer, insert the payslips in the file and forward to the Injury Officer.
- Updates the Injuries.xls Excel Sheet with the new injury. This sheet contains personal information about the employee, date of injury, summary of injury and date on when the employee resumes full duties. This is sent to the insurance on a weekly bases.
- Sends the following documents to the Insurance:
  - Covering letter
  - Copy of N.I. 30 Form
  - Original Notice of Incident Form
  - Payroll related documents
  - Medical Certificates from Enemalta's company doctor visiting the injured person at home

6.1.3 H&S Obligations

The HSE Officer is responsible to investigate all injuries which occur to Enemalta personnel.

- In case of a serious injury, the HSE Officer and/or his superior will immediately attend at the site of accident and start a preliminary investigation. In such instance, with the exception of attending to the injured person, the area where the serious accident has occurred should be left undisturbed. He will also notify:
    - Top Management
    - OHSA - 24/7. The emergency line is +**356 99496786.** OHSA may attend on site to carry out their investigation and instruct Enemalta on any further reporting requirements.
- In case of less serious injuries, the above mentioned points do not apply.

  Once the HSE officer is informed he will visit the site and interview the witnesses and gather all relevant evidence of the accident. Furthermore, the HSE officer will then wait for the injured person to return to work from the injury period. Once the investigation has been completed, the HSE Officer will compile the **Accident Investigation Report Form**. This will be inserted in the personal registry file and forwarded to the Wages Department. In instances when an immediate action needs to be taken by the specific section, the HSE Officer will also issue a report on the accident and his recommendations, and this report is placed in the location specific Injury Investigation Registry File and forwarded to the Manager for action to be taken.
- The investigation should come up with recommendations for remedial measures and it is the responsibility of the immediate superior Officer to ensure that such measures are implemented to prevent similar occurrences in the future. These recommendations could include safer work procedures, revision of personal protective equipment used, requirement for further H&S Awareness training, etc. The HSE Officer must carry out regular inspections to ensure that such measures have actually been implemented.

6.1.4 Outcome of the Health and Safety Injury Investigation

If the Health and Safety's investigation confirms that the injury really occurred at the place of work and also that it did not occur due to the employee's negligence:

- The Injury Officer informs the T&A to record employee as *injury* from the date of incident
- Copies of receipts of medical supplies are approve by HR Manager as per clause 6.7.6
- Copies of receipts of approved medical supplies are forwarded to the Finance Department for reimbursement purposes as per clause 6.7.6
- Payment is issued through the Finance Department

On the other hand, if the Health and Safety's investigation does not justify the injury claim:

- The Injury Officer informs the T&A to record employee as *sick leave* from the date of incident
- The Injury Officer notifies T&A and Wages Department for deductions, if any
- Employee is informed by a formal letter that the injury was not accepted by the HR Department

When a serious incident occurs, investigation needs to be done immediately to determine the root cause of the accident and corrective actions so that such incident will not re-happen. This is to be carried out by the investigating team that is set up by the senior Manager or his delegate as appropriate.

The investigating team shall include personnel having the required expertise but who are not directly involved with the incident to avoid conflict of interest. The chairperson of the investigating committee shall be independent of the department pertaining to the injured person.

Corrective and preventive actions may necessitate direct intervention of the respective department resources which would have been the root cause of the accident &/ or incident.

6.1.5 Injured Employee's return to work

The Welfare Department is also responsible for determining whether the injured employee is fit to return to work. This is done by checking the initial report submitted by the doctor in the N.I. 30 Form and the certificates of the company doctor visiting the injured person at home. Once the certificate is closed by the doctor, the employee can resume work. Any prescriptions, medical certificates and medicine receipts are to be forwarded by the Injury Officer to the Insurance.

Once the employee resumes work, the Injury Officer sends a formal letter, a copy of the N.I. 30 Form, Notice of Incident Form and all available Medical Certificates to the Insurance company to settle the claim.

The Injury Officer contacts the Company Doctor to issue a final medical certificate, which is then forwarded to the insurance company.

6.2 Injury Occurrence to subcontractors or third parties

Enemalta Welfare Section and Enemalta Health & Safety Section are to be informed by the Enemalta responsible person of any accident or incident connected with or arising out of work activity that result in a 'third party' or subcontractors being injured and taken from the scene of the accident for medical treatment. This is regardless whether or not they are admitted to hospital.

The injured person's employer will be responsible to compile the N.I. 30 Form. Enemalta's Health & Safety Section will only be required to investigate this incident if instructed to do so by Enemalta top management.

7 Related documents

Corporate Vehicles Driving Policy

N.I. 30 Form

Accident Notification Report Form

Consent Form

Notice of Incident Form

MP 12

Reporting and investigation of Major accidents, incidents and Near Misses Procedure

Revision list

Revision No.	Description	Written By/Revised By	Date
0	First issue	P. Conti / S. Scicluna	07.04.2016
1			
2			

Written By:	Verified by:	Approved by:
P. Conti Environmental and Safety Coordinator	M. Falzon Head of Health & Safety and Fire	S. Scicluna EMS Management Representative

Contents

1 Aim and scope

The aim of this document is to introduce a “proactive” way of reporting and investigating the incidents where the “potential outcome” of an incident will drive the investigation and the measures to be taken in order to prevent it from happening again.

The procedure is applicable to all Enemalta employees during the course of work as well as subcontractors working on behalf of Enemalta.

2 References

OHSAS 18001:2007, clause 4.5.3.1

EN ISO 14001:2004 Clause 4.5.3

Chapter 424 Occupational Health and Safety Authority Act

3 Terms and Definitions

ENE	Enemalta plc
EMS	Environmental Management System
SMS	Safety Management System
E&SC	Environmental and Safety Coordinator
Occupational Health Hazard	A chemical, physical or biological hazard arising in or from the work environment that may cause discomfort or adverse health effects.
H&S	Health and Safety Department
OHSA	Occupational Health and Safety Authority
Incident	An incident can be defined as any dangerous occurrence such as fires, gas leaks or explosions, oil and chemical spillages, damages to any equipment/structure etc. containing asbestos, failure of machinery or lifting equipment, etc
Accident	Any unplanned event resulting in an injury ONLY (not including damage to property, plant or equipment).
Major Accident	an occurrence such as a major emission, fire, or explosion resulting from uncontrolled developments in the course of the operation of any establishment covered by these regulations, and leading to serious danger to human health or the environment, immediate or delayed, inside or outside the establishment, and involving one or more

	dangerous substances.
Near Miss	Unsafe act, condition, unplanned event or out of compliance with the potential for injury or damage to plant, people or the environment. The incident has occurred but, on this occasion, there has been no immediate adverse consequence. If circumstances had been slightly different, injury or damage to plant, people or the environment would have occurred.
HSE Observation	Unsafe act, condition or unplanned event with the potential for injury or damage to plant, people or the environment. The event has been observed but has not, necessarily, occurred.
Risk control measures	The workplace precautions in place to reduce the risk to a tolerable level. For incident control, risk control measures should address direct, underlying and root causes.
Direct cause	The condition that directly resulted in the incident.
Underlying cause	Although in most of the cases an unsafe act or condition are the most obvious reason why an incident happens (and the direct cause), there may be several immediate hidden causes identified in any one adverse event.
Root cause	An initiating event or failure from which all other causes or failings spring. Root causes are generally management, system, planning or organizational failures.

4 Responsibilities

Environmental and Safety Coordinator (E&SC)

- Provides the necessary support and environmental and safety documentation required during the investigation process as well as in proposing a corrective action.
- Liaises with Head of Health and Safety (H&S) to carry out necessary investigation for safety and environmental related incidents.

Head of Health and Safety (H&S)

- Ensures that the company is compliant with Health & Safety standards, rules and legislation
- Ensure that any incidents, accidents or near misses that do occur on site are reviewed for serious injuries, fatalities and major accident potential and recorded, reported and escalated as indicated further in the procedure.
- Ensures a proper investigation team is built for each specific investigation
- Liaises with Section Manager/s to ensure corrective measures proposed by the incident investigation are set in place.
- Ensures the quality of investigation is achieved
- Record the outcome of the investigation

HSE Officer

- Liaises with Head of Health and Safety (H&S) and section manager to carry out necessary investigation for safety related incidents.
- Reports any incidents, accidents or near misses to the Head of Health and Safety (H&S).
- Ensures corrective measures proposed by the incident investigation are set in place.

Enemalta personnel

- Immediately inform direct superiors about any incidents, accidents or near misses.
- Provide any necessary information to ensure that incident investigation can be carried out effectively.

5 Frequency

This document should be reviewed and updated every twelve (12) months, unless it is deemed necessary that it should be revised prior.

6 Detailed procedural rules

6.1 General investigation

In fact, the aim of this procedure is to introduce a “proactive” way of reporting and investigating the incidents. While in many companies is common to use a “reactive” process where the “outcome” of an accident determine how the incident is managed and reported, the approach introduced in this procedures tend to a “proactive” process where the “potential outcome” of an incident will drive the investigation hence the measures to be taken in order to prevent it from happening again.

The reactive approach lead to very minor injuries being over investigated and over protected to happen again whether incidents that could have resulted in a serious injury are not investigated thoroughly and root causes in some cases completely ignored.

By focusing on the potential outcome of a near miss or taking seriously into consideration an HSE Observation, preventive measures can be put in place to reduce serious injuries, fatalities and major accidents.

Any work related injuries, ill health, diseases, incidents and near misses (as well as HSE Observations) that occurs on site, whether they result in injury or not, must be assessed to determine if the incident had the potential to result in a Serious Injury, Fatality or Major Accident.

Potential Serious Injury or Fatality or Major Accidents are incidents or near misses, which result in no injury or in an injury not fulfilling criteria for being a Serious Injury or Fatality, but under slightly different circumstances could result in a Serious Injury or Fatality or Major Accidents.

Potential Serious Injury or Fatality include:

1. Work with Hazardous Energies – including moving or rotating machine parts, electricity, pressure, steam systems, line breaking, tasks requiring Lock-out / Tag-out procedures etc;
2. Confined Space Entry – regular maintenance or repair being the cause of entry etc;
3. Lifting Operations – use of cranes, lifting beams, block and tackle etc;
4. Working at Height – use of scaffolds, ladders or fall arrest systems etc;
5. High Risk Contractor & Construction Work – excavations, demolitions, etc;
6. Mobile Equipment / Vehicles – use in operation and interaction with pedestrians, structures etc;
7. Manual Handling – involving considerable weight or highly repetitive movements etc;
8. Exposure to or Release of Hazardous Materials –in operation or maintenance;
9. Hazardous Materials Handling – in operation or maintenance and repair etc;
10. Process Instability – in operation or maintenance and repair etc;
11. Unexpected Maintenance – of plant and equipment or systems etc;
12. Unexpected Changes – in plant and equipment or processes etc; and
13. Emergency Shutdown Procedures – due to unforeseen events etc.

Potential major accidents include:

- Hazardous substance spillage to the seawater
- Hazardous substance spillage on the ground
- Hazardous substance release to the atmosphere
- Pool fire, jet fire, flash fire proceeding from the ignition of flammable or combustible substances
- Explosion proceeding from the ignition of hazardous substances dispersed in the atmosphere

The assessment of this possibility is open to interpretation so it is better to assume the worst case scenario of what could have happened in the worst circumstances and not take credit for lucky events detected during the investigation (i.e. luckily the operator was not present at the moment of the hot spillage, etc.).

To ensure a thorough investigation, a team based approach including HSE experts and operation, maintenance and others is recommended. The team must involve those with sufficient knowledge of the activities, work-place, processes, HSE procedures and HSE incident investigation methods and tools.
A systematic approach must be used for investigation of incidents, so that the Root and Underlying Causes are analyzed and proper Corrective Actions are taken.

The team shall collect and review all relevant sources of information available involving potential causes. These will include but be limited to:

- Information on Injuries, Incidents or Near Miss reports;
- Task specific hazard evaluations;
- HSE Observation;
- Safety Suggestions (from operatives, contractors etc);
- Field / Site Observations;
- Interviews.

6.2 Incident Occurrence

When an incident occurs, the section manager should inform the Head Health & Safety as soon as possible by filling up the **Incident/Exercise Report Form**, which is available on the Enemalta Intranet Portal at location:

Documents/Environmental Management System (EMS)/Forms/Incident Exercise Report Form/view

The investigation need to be carried out in real time to determine the root cause of the accident and corrective actions that need to be taken so that such incident will not re-happen. This investigation process will be triggered by the Head Health & Safety and will include coordination with the section manager or his delegate, HSE Officers and other Enemalta personnel as appropriate.

The investigation team shall come up with recommendations for remedial measures. These corrective and preventive actions may necessitate direct intervention of the respective department resources which would have been the root cause of the accident &/ or incident. The Safety and Environmental Auditors must carry out regular inspections to ensure such measures have actually been implemented.

6.3 Near Miss Occurrence

When a near miss occurs, the same procedure in Section 6.2 is to be followed.

7 Related documents

Incident/Exercise Report Form

MP 13

Major Hazard Identification

Revision list

Revision No.	Description	Written By/Revised By	Date
0	First issue	P. Conti	07.04.2016

Written by:	Verified by:	Approved by:
P. Conti Environmental and Safety Coordinator	M. Falzon Head of Health & Safety and Fire	S. Scicluna EMS Management Representative

Contents:

1 Aim and Scope

The purpose of this procedure is to establish the methodology for identifying and assessing the risks of major accidents within the Enemalta DPS facilities, covering the stages of design, engineering, construction and operation of the installations or equipment both in normal operation and in extraordinary situations. These last include any unusual operating mode plus maintenance and shutdown, with the aim to determine the prevention, protection and mitigation measures to be applied in order to prevent any major accidents. The methodology also applies to future decommissioning phases.

The procedure applies to the whole facility, equipment, operation (permanent or temporary), substances and materials handled or generated at ENEMALTA premises, whenever they may lead to a major accident.

Incidents and possible emergencies are also identified, including: risks arising from materials or equipment; risks due to external causes such as adverse weather conditions, or incidents due to the activity of other infrastructures or nearby industries; human factor, including failures of the Safety Management System itself; risk coming from transportation, loading and unloading of fuel, goods or by-products of the industrial activity such as waste; risk due to possible vandalism or sabotage acts.

2 References

COUNCIL DIRECTIVE 2012/18/EU of the 4th July 2012 on the control of major-accident hazards involving dangerous substances

L.N. 179 of 2015 Occupational Health & Safety Authority Act (CAP.424). Control of Major Accident Hazard Regulations, 2015.

3 Terms and Definitions

Domino Effect	The chain of incidents that multiply the effects of the original incident, because the effects of this first, also affect closer vulnerable elements; other vessels, piping or equipment of the same establishment or other nearby settlements, so that a new episode of leakage, fire, explosion or environmental affection exacerbating the original situation occurs.
Hazard	mean the intrinsic property of a dangerous substance or physical situation, with a potential for creating damage to human health and/or the environment
Hazardous Substances	Substance, mixture or preparation listed in Annex 1, Part 1, or fulfilling the criteria laid down in Annex 1, Part 2 of the Council Directive 96/82/EC, and present as a raw material, product, by-product, residue or intermediate, including those substances which it is reasonable to suppose may be generated in the event of accident.
HAZID	The HAZID is a systematic method for hazards identification

HAZOP	The HAZOP (HAZard and OPerability study) is a systematic technique for identifying potential hazards and operational problems, especially adapted to continuous processes, providing fluid transfer through pipes and equipment which may be represented in piping and instrumentation diagrams (P&ID)
Major accident:	Any event, such a spillage, leakage, fire or explosion, resulted from an uncontrolled during an operation of any establishment affected by the Seveso Directive, posing a serious danger, immediate or delayed, to people, property and environment, either inside or in the outside of the establishment, and where involving one or more dangerous substances
Risk	mean the likelihood of a specific effect occurring within a specified period or in specified circumstances
Risk Assessment	Activity based on the determination of the possible consequences that may arise regarding the hazards and the likelihood that the consequences may occur.

4 Responsibilities

Environmental and Safety Coordinator (E&SC)

- Proposes risk analysis evaluation criteria
- Coordinates safety data and information gathering, evaluation and updating
- Triggers any changes which require the update of the HAZID and coordinates:
  - With the H&S Section and the DPS personnel if the changes are minor
  - With the MR to get an external consultant to carry out the update if changes are major

Head Health and Safety

- supports the E&SC in the review of the HAZID/HAZOP
- identifies and assess risk and liaises with the E&SC to update the Major Hazards identified

Safety Representatives (SR):

- supports the E&SC in the review of the HAZID/HAZOP
- identifies and assess risk and liaises with the E&SC to update the Major Hazards identified

Management representative (MR)

- approves the HAZID/HAZOP
- gets on board an external consultant when major changes to the HAZID are required

External Consultant

- reviews the current HAZID and updates it according to the changing circumstances within DPS

5 Frequency

The E&SC shall determine the need for the review of the risk identification, for further analysis and evaluation of a team at least every 2 years or earlier if:

- Any project for new facilities, systems or equipment, whenever hazardous substances are handled.
- Any change in the layout with a reduction of safety distances from hazards or an alteration of the escaping routes.
- Any project in nearby facilities and infrastructures that can lead to major accidents themselves and domino effect to ENEMALTA site.
- Any change in the legal requirements, based on the current standards and laws.
- Any equipment decommissioning.
- Existent installations not previously assessed.
- Processes and installations previously assessed.

6 Detailed procedural rules

Several methodologies may be used for comprehensive hazard identification in a process plant. They are commonly referred to as “Process Hazards Assessment” or PHA techniques and include the well known HAZOP, HAZID, SWIFT, FMEA, etc. In general a PHA is a systematic, methodical and thorough approach for identifying, evaluating and controlling the hazards related to a process.

The PHA technique includes a series of methodologies that allow for proper detection of hazards and the correlated risk evaluation. The methodologies related to PHA are based on the systematic work of a reduced heterogeneous group of people who bring the knowledge of the process to be studied, analyzing parts of the process or a operation procedure, guided by a Chairman, so as to identify and analyze as many hazardous situations as possible. For each hazard the possible causes, consequences and effects will be analyzed, and the risk level is assessed. When the latter one is not acceptable, recommendations for an improvement will be proposed. In order to assess the acceptability on a quantitative basis, additional methodologies may be introduced for the risk assessment and analysis of the layer of protections for each scenario.

Among all the PHA techniques and provided that the major hazards at Delimara site are predominantly related to processing hazardous substances or to the interaction and interface between several stakeholders, only two largely used methodologies are proposed for hazard identification, plus one additional methodology for risk assessment and one for layer of protection analysis. The four are described in the following chapters.

Whenever the identified scenario entails a potential Loss Of Containment (LOC) situation, this LOC shall be studied in accordance to procedure MP 14 - Major Accident Risk Assessment.

6.1 Hazards Identification Study (HAZID)

The HAZID is a systematic method for hazards identification. It shall be applied whenever the change has an impact on the layout, such as:

- Pipes routing (pipe replacement without changes in the P&IDS)
- Equipment position (pumps, compressors, etc.)
- Building layout, construction of new buildings or modification in the interior layout
- Escaping routes, vehicles routes and drains
- Lighting
- Ignition points (modification of the area classification drawing)
- Distribution, type and effectiveness of fire fight systems

The study starts with the subdivision of the installation in several subsets (nodes, subsystems or sections) on which a group of heterogeneous technicians from various disciplines are called to identify possible dangerous situations, according to a list previously prepared by the Chairman. The analysis is used to assess the planned facilities in order to minimize the risk, taking into account the best available techniques.

In the initial phase of the study a number of deviations and factors for each hazard shall be considered for analysis during the studies. See Annexure 1 for a list of hazards. The template to be used for recording the analysis is included in the Annexure 4.

6.2 Hazard and Operability Study (HAZOP)

The HAZOP (HAZard and OPerability study) is a systematic technique for identifying potential hazards and operational problems, especially adapted to continuous processes, providing fluid transfer through pipes and equipment which may be represented in piping and instrumentation diagrams (P&ID).

The methodology shall be applied in all cases where the change has an effect on to the process or operator/process interaction. The study shall be useful in those cases in which the changes imply:

- P&IDs modifications
- Changes in process parameters (level, pressure, temperature, flow, etc.)
- Pipelines layout with changes in P&IDs
- Installation or modification of new equipments with a modification in process parameters
- Changes in the Control Loops or instrumentation

This method is focused on the analysis of the deviations for any operation parameters with respect to the intention of the process. The technique uses key words (no, more, less, etc.) applied to the process

parameters (flow, pressure, temperature, etc.) which lead to deviations (more flow, less pressure, etc.) of intent or normal process condition.

Thus, the HAZOP study starts with the subdivision of the facilities in a number of subsets called "nodes" which later on have to be analyzed focusing on the possible deviations by a team that shall be composed by a heterogeneous group of technicians from different disciplines.

At the beginning of each node, the appropriate Discipline Engineer describes briefly how the system equipment is intended to operate. Then, the process deviations are examined for each node using the appropriate guideword (more, less, no, etc.) in relation to the process aspects (flow, pressure, temperature, etc.). For each deviation, the HAZOP team shall suggest causes and possible consequences and shall identify all existing safeguards to prevent, detect, control or mitigate each situation.

The procedure can be summarized in the following steps:

1. Start with the subdivision of the facilities in a number of subsets called NODEs
2. Define the node boundaries and identify the node with colours on the P&ID
3. Describe node intention and set-point of each PARAMETER
4. Select a PARAMETER in combination with a GUIDEWORD and study a DEVIATION
5. Look for credible CAUSEs
6. Figure out possible CONSEQUENCEs
7. List existing SAFEGUARDS
8. Suggest RECOMMENDATIONs when not satisfied with the existing safeguards
9. Repeat steps 4 to 8 with the following deviation until all the deviations have been studied
10. Repeat steps 3 to 9 until all the nodes have been covered

The PARAMETERs, GUIDEWORDs and DEVIATIONs studied in the HAZOP are included in Annexure 2. A non comprehensive list of suggestions on possible location of the hazards, possible causes and possible safeguards is included in the Annexure 3. The template to be used for recording the analysis is included in the Annexure 5.

6.3 Riskgraph method

The risk evaluation techniques are termed semi-quantitative, semi-qualitative, and qualitative methods respectively. The method selected for a specific application will depend on many factors, including:

- the complexity of the application;
- the guidelines from regulatory authorities;
- the nature of the risk and the required risk reduction;
- the experience and skills of the persons available to undertake the work;
- the information available on the parameters relevant to the risk.

The calibrated risk graph method is a semi-qualitative method that enables the safety integrity level of a safety instrumented function to be determined from knowledge of the risk factors associated with the process and basic process control system. The approach uses a number of parameters, which together describe the nature of the hazardous situation when safety instrumented systems fail or are not available. One parameter is chosen from each of four sets, and the selected parameters are then combined to decide the safety integrity level allocated to the safety instrumented functions.

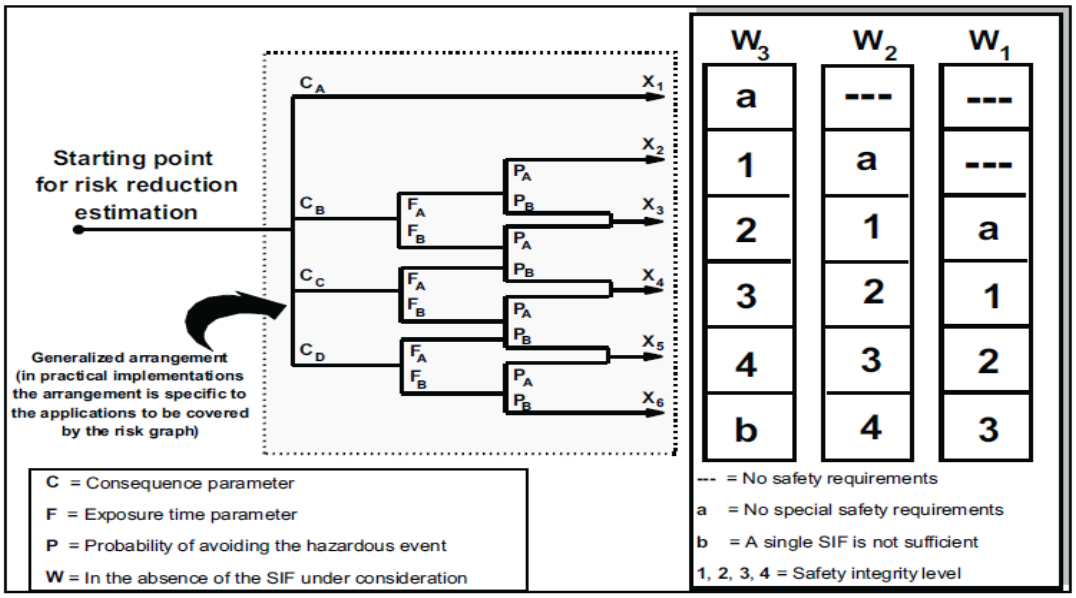
Typically, in the process sector, risk (R) is a function of the following four parameters:

- the consequence of the hazardous situation (C);
- the occupancy (probability that the exposed area is occupied) (F);
- the probability of avoiding the hazardous situation (P);
- the demand rate (number of times per year that the hazardous situation would occur in the absence of the safety instrumented function being considered) (W).

These four parameters are defined as follows:

- Consequence (C): Number of fatalities and/or serious injuries likely to result from the occurrence of the hazardous event. Determined by calculating the numbers in the exposed area when the area is occupied taking into account the vulnerability to the hazardous event.
- Occupancy (F): Probability that the exposed area is occupied at the time of the hazardous event. Determined by calculating the fraction of time the area is occupied at the time of the hazardous event. This should take into account the possibility of an increased likelihood of persons being in the exposed area in order to investigate abnormal situations which may exist during the build-up to the hazardous event (consider also if this changes the C parameter).
- Probability (P): The probability that exposed persons are able to avoid the hazardous situation which exists if the safety instrumented function fails on demand. This depends on there being independent methods of alerting the exposed persons to the hazard prior to the hazard occurring and there being methods of escape.
- Demand Rate (W): The number of times per year that the hazardous event would occur in the absence of the safety instrumented function under consideration. This can be determined by considering all failures which can lead to the hazardous event and estimating the overall rate of occurrence. Other protection layers should be included in the consideration.

The four parameters are considered in a matrix called risk graph, as shown below:



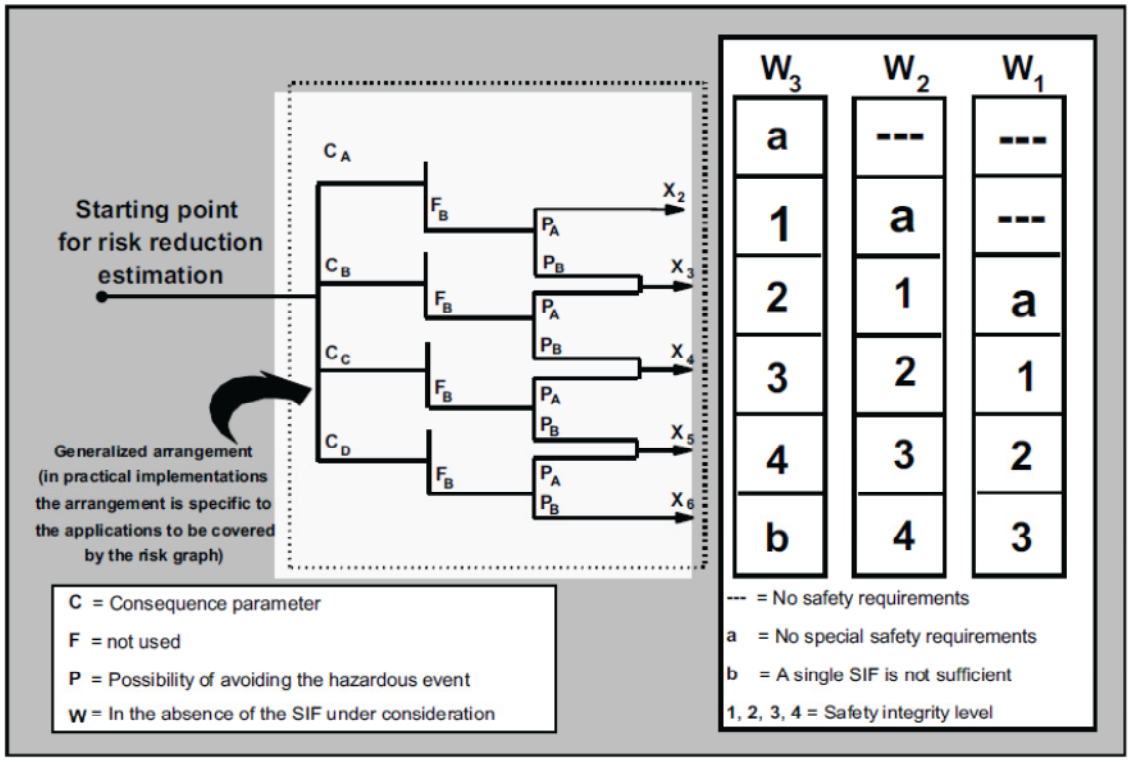
Calibration of the risk graph is the process of assigning numerical values to risk graph parameters. This forms the basis for the assessment of the process risk that exists and allows determination of the required integrity of the safety instrumented function under consideration. Each of the parameters is assigned a range of values such that when applied in combination, a graded assessment of the risk which exists in the absence of the safety particular function is produced.

Risk parameter		Classification	Comments
Consequence (C) Number of fatalities This can be calculated by determining the numbers of people present when the area exposed to the hazard is occupied and multiplying by the vulnerability to the identified hazard. The vulnerability is determined by the nature of the hazard being protected against. The following factors can be used: V = 0,01 Small release of flammable or toxic material V = 0,1 Large release of flammable or toxic material V = 0,5 As above but also a high probability of catching fire or highly toxic material V = 1 Rupture or explosion	C_A C_B C_C C_D	Minor injury Range 0,01 to 0,1 Range >0,1 to 1,0 Range >1,0	1 The classification system has been developed to deal with injury and death to people. 2 For the interpretation of C_A, C_B, C_C and C_D, the consequences of the accident and normal healing should be taken into account.
Occupancy (F) This is calculated by determining the proportional length of time the area exposed to the hazard is occupied during a normal working period. NOTE 1 If the time in the hazardous area is different depending on the shift being operated then the maximum should be selected. NOTE 2 It is only appropriate to use F_A where it can be shown that the demand rate is random and not related to when occupancy could be higher than normal. The latter is usually the case with demands which occur at equipment start-up or during the investigation of abnormalities.	F_A F_B	Rare to more frequent exposure in the hazardous zone. Occupancy less than 0,1 Frequent to permanent exposure in the hazardous zone	3 See comment 1 above.
Probability of avoiding the hazardous event (P) if the protection system fails to operate.	P_A P_B	Adopted if all conditions in column 4 are satisfied Adopted if all the conditions are not satisfied	4 P_A should only be selected if all the following are true: – facilities are provided to alert the operator that the SIS has failed; – independent facilities are provided to shut down such that the hazard can be avoided or which enable all persons to escape to a safe area; – the time between the operator being alerted and a hazardous event occurring exceeds 1 h or is definitely sufficient for the necessary actions.
Demand rate (W) The number of times per year that the hazardous event would occur in absence of SIF under consideration. To determine the demand rate it is necessary to consider all sources of failure that can lead to one hazardous event. In determining the demand rate, limited credit can be allowed for control system performance and intervention. The performance which can be claimed if the control system is not to be designed and maintained according to IEC 61511, is limited to below the performance ranges associated with SIL1.	W_1 W_2 W_3	Demand rate less than 0,1 D per year Demand rate between 0,1 D and D per year Demand rate between D and 10 D per year For demand rates higher than 10 D per year higher integrity shall be needed	5 The purpose of the W factor is to estimate the frequency of the hazard taking place without the addition of the SIS. If the demand rate is very high, the SIL has to be determined by another method or the risk graph recalibrated. It should be noted that risk graph methods may not be the best approach in the case of applications operating in continuous mode, see 3.2.43.2 of IEC 61511–1. 6 C is a calibration factor, the value of which should be determined so that the risk graph results in a level of residuaal risk which is tolerable taking into consideration other risks to exposed persons and corporate criteria.
NOTE This is an example to illustrate the application of the principles for the design of risk graphs. Risk graphs for particular applications and particular hazards will need to be agreed with those involved, taking into account tolerable risk, see Clauses D.1 to D.6.			

The risk graph approach may also be used to determine the integrity level requirements where the consequences of failure include acute environmental loss. The integrity level needed depends on the characteristics of the substance released and the sensitivity of the environment.

Risk parameter		Classification	Comments
Consequence (C)	C_A	A release with minor damage that is not very severe but is large enough to be reported to plant management	A moderate leak from a flange or valve Small scale liquid spill Small scale soil pollution without affecting ground water
	C_B	Release within the fence with significant damage	A cloud of obnoxious vapour travelling beyond the unit following flange gasket blow-out or compressor seal failure
	C_C	Release outside the fence with major damage which can be cleaned up quickly without significant lasting consequences	A vapour or aerosol release with or without liquid fallout that causes temporary damage to plants or fauna
	C_D	Release outside the fence with major damage which cannot be cleaned up quickly or with lasting consequences	Liquid spill into a river or sea A vapour or aerosol release with or without liquid fallout that causes lasting damage to plants or fauna Solids fallout (dust, catalyst, soot, ash) Liquid release that could affect groundwater

The above consequences can be used in conjunction with the special version of the risk graph, shown below:



It should be noted that the F parameter is not used in this risk graph because the concept of occupancy does not apply. Other parameters P and W apply and definitions can be identical to those applied above to safety consequences. The same riskgraph can be used to evaluate asset losses.

The risk graph approach may also be used to determine the integrity level requirements where the consequences of failure include asset loss. Asset loss is the total economic loss associated with the failure to function on demand. It includes rebuild costs if any damage is incurred and the cost of lost or deferred production. The integrity level justified for any loss consequence can be calculated using normal cost benefit analysis. There are benefits in using risks graphs for asset loss if the risk graph approach is being used to determine the integrity levels associated with safety and environmental consequences. When used to determine the integrity level associated with asset losses, the consequence parameters CA to CD have to be defined. These parameters may vary within a wide range from one company to another.

A similar risk graph to that used for environmental protection can be developed for asset loss.

Economical losses estimation is referred to the cost of reparation and/or purchasing of replacements and doesn't include losses of production due to plant stop. These losses can be higher than the repair and replacement, especially in case of major damages to the steam or gas turbine and to the steam generator. Also, economical likelihood can be adapted to the company's standards.

To assess the damage caused to people, the following scale shall be used.

CONSEQUENCES FOR PEOPLE	
LEVEL	**DEFINITION**
1	Minor injuries
2	Major injuries (1 death)
3	More than 1 death
4	Disaster

To assess environmental damage, the following scale shall be used.

ENVIRONMENTAL CONSEQUENCES	
LEVEL	**DEFINITION**
1	No damage
2	Visible damage / Odour
3	Damage
4	Disaster

For asset damages, on the basis of similar power plants, the following ranges are suggested, but should be checked by the team during the studies:

ASSETS CONSEQUENCES	
LEVEL	**DEFINITION**
0	Not considered if < €5,000
1	€5,000 to €50,000
2	€50,000 to €500,000
3	€500,000 to €5,000,000
4	More than €5,000,000

6.4 Layer of Protection Analysis (LOPA)

According to this risk assessment, the adequacy and reliability of the safeguards is evaluated. In some cases, safety functions are used as additional safeguards protecting against a specified hazard, thus the presence of several protection layers should be taken into account. In other words, if the protection against an hazard relies on several layer of protection, the required integrity of each one should be considered referred to the whole system and the importance of mechanical and procedural safeguards (PSV, RV, check valve, alarms and presence of operator, etc.) should included in the reliability calculation.

For instance, an overpressure leading to an explosion and damages to the workers and installation is given a risk level during the risk assessment. The overpressure is avoided by an instrumented function, depending on a pressure switch and closing the inlet valve. Additionally, the overpressure can be released by a pressure safety valve (PSV). The presence of the PSV can't be neglected in the reliability calculation, being the PSV in place and strong enough to avoid any damage in case of overpressure. The reliability of the system against the ultimate consequence depends on both safeguards. For this reason, the following formula has been implicitly applied:

$$R = \Sigma \text{ IPL credit}$$

Where:

R = initial risk level after risk assessment (Riskgraph method)

IPL credit = credit given to each Independent Protection Layer

Typical credits given to common Independent Protection Layer are as follows:

INDEPENDENT PROTECTION LAYER	CREDIT
Control loops when normal action will mitigate the scenario	<1
Supervised alarm and action to be taken by the operator when enough time is guaranteed for the action before the consequence takes place	1
Supervised operation, based on existence of procedure, continuous presence of trained operator, second operator supervision	1
Interlocks based on 1oo2 or 2oo3 instrument – fail safe position of valve	1
Check Valve for clean product	1
Oil interceptor	1
Physical barriers	1
Existence of bund	1
Vacuum Breaker	2
Pressure Safety Valve or Rupture Disc	2

7 Related Documents

MP 14 – Major Accident Risk Assessment

See Annexures

Annexure 1.-'Hazard Identification – HAZID – Hazards to be considered'

IDENTIFICATION OF THE ANALIZED ELEMENTS
Area:
Equipment:
Involved Substances:
Modification/change description:

HAZARD	DEVIATION	FACTOR TO BE CONSIDERED
NATURAL HAZARDS	EXTREME WEATHER & ENVIRONMENTAL CONDITIONS	Extreme temperatures
		Deluge / Storms
		Waves
		High Wind
		Dust
		Flooding

HAZARD	DEVIATION	FACTOR TO BE CONSIDERED
		Sandstorms
		Ice
		Snow
		Fog
		Fast atmospheric pressure changes
		Lightning / thunderstorm
	SEISMIC ACTIVITY	Earthquake
	EROSION	Ground slide
		Coastal erosion
		Riverbank erosion
		Ground structure
		Foundations
		Settlement

HAZARD	DEVIATION	FACTOR TO BE CONSIDERED
EXTERNAL HAZARDS	EXTERNAL IMPACT	Aircraft crash
		Car crash
		Helicopter crash
		Ship collision
	THIRD PARTY ACTIVITIES	Farming
		Fishing
		Industry
SITE HAZARDS	SECURITY	Unauthorized Entries
		Sabotage from outside
	SITE LAYOUT	Emergency vehicle access
		Emergency personnel access and escape routes
		Maintenance accessibility
		Domino Effect from neighbours

HAZARD	DEVIATION	FACTOR TO BE CONSIDERED
		Spillage Containment
		Fire zoning
	FIRE FIGHTING	Pumps Station
		Hydrants
		Deluge system and foam extinguisher system
		Foam Mobile extinguisher
		Smoke and heat detectors
		Alarm system
	HUMAN FACTOR	Facilities personnel Operators Subcontractor
	UTILITIES AVAILABILITY	Power Supply Steam Supply Compressed Air Supply Water Supply
	CONSTRUCTION WORK	Specific activities
	COMMISSIONING	Specific activities

HAZARD	DEVIATION	FACTOR TO BE CONSIDERED
	OPERATION	Specific activities
	DECOMMISSIONING	Specific activities

Annexure 2.-'Hazard Identification – HAZOP deviations'

IDENTIFICATION OF THE ANALIZED ELEMENTS
Area:
Equipment:
Involved Substances:
Modification/change description:

PARAMETER	GUIDEWORD	DEVIATION
Level / Interphase	More	Higher Level / Interphase
	Less	Lower Level / Interphase
	No	Inhibition of level / Interphase
Pressure	More	Higher Pressure
	Less	Lower Pressure
	No	Inhibition of pressure

PARAMETER	GUIDEWORD	DEVIATION
Temperature	More	Higher Temperature
	Less	Lower Temperature
	No	Inhibition of temperature
Flow	More	Quantitative Higher Flow
	Less	Quantitative Lower Flow
	No	No Flow
	Reverse or misdirected	Reverse Flow
	Part of	Qualitative Lower Flow
	Other than	Substitution of flow
Viscosity	More	More Viscosity
	Less	Less Viscosity
Composition	Other	Other Composition
Relief / Emissions	Other	-

PARAMETER	GUIDEWORD	DEVIATION
Instrumentation	Other	-
Sampling	Other	-
Utilities	No	No Utilities
Operation	Other	Other Operation
Reaction	-	-
Corrosion / Erosion	-	-
Service failures	Other	-
Maintenance	Other	-
Static	Other	-
Outside conditions	Other	-

Annexure 3.-'Hazard Identification – HAZOP suggestions'

DEVIATION TO STUDY	POSSIBLE LOCATION	POSSIBLE CAUSES	POSSIBLE CONSEQUENCES
Level +	Vessel to be filled Vessel normally empty Separators Flash drums Condensers Hot wells Steam traps	Failure of level control loop Non equilibrated inlet and outlet	Overflow → spillage if open Liquid to gas phase in steam/condensate systems Liquid to heat exchangers / compressor / ejectors / turbine → damages
Level -	Vessel to be emptied Any vessel upstream a pump	Failure of level control loop Non equilibrated inlet and outlet	Pump running dry → damages No level, no siphon → equilibrium of pressure → possible overpressure downstream through the pump
Pressure +	Pressure coming from pipes entering the node or leaving the node Any blocked valve Any filter / separator Downstream any pump Any blocked exchanger	Failure of pressure control loop External causes Human error in closing valves Air failure High temperature	Overpressure → damages Shutoff conditions → damages to pumps Displacement of level → communications of phases Pressure gradient → reduction of equipment life
Pressure -	Same as above but downstream	Same as above but downstream Unexpected opening of vent valves	Operational problems →Plant trip Depressurization → boiling of condensate / sudden vaporization → explosion

DEVIATION TO STUDY	POSSIBLE LOCATION	POSSIBLE CAUSES	POSSIBLE CONSEQUENCES
Temperature +	Any line entering the node can come hotter Heat exchangers	Failure of temp. control loop No cooling	Overtemperature → damages Excessive vaporization → overpressure Steam when not expected → vibration and damages Pumps running dry → damages Temp. gradient → thermal shock (in heat exchangers, turbine)
Temperature -	Any line entering the node can come colder Heat exchangers	Failure of temp. control loop No heating Extreme weather	Liquid condensation where not expected → damages Temp. gradient → thermal shock (in heat exchangers, turbine)
Flow +	Only when relevant and controlled	Failure of flow control loop	Misadjustment in other parameters
Flow -	Only when relevant and controlled	Failure of flow control loop	Misadjustment in other parameters → overtemperature if minimum flow is required
Flow No	Only when relevant and controlled	Blockage or closure of valves	
Flow Reverse	Every node inlet and outlet	Opening of valves not normally operated Pumps stop depressurization	Overpressure in upstream / downstream sections
Composition Other	When the node is open to the outside When accumulation or scaling or fouling is possible	Impurities Oil on water Water on oil Sulphur Non condensable Oxygen Leakages in heat exchangers	Scaling in boilers and heat exchangers Fouling in pipes Blockage in filters

DEVIATION TO STUDY	POSSIBLE LOCATION	POSSIBLE CAUSES	POSSIBLE CONSEQUENCES
Utilities No	Each node, limit to effects on the node	Failure of power supply Failure of instrument air Failure of cooling water Failure of heating / tracing Failure of nitrogen Failure of oxygen / hydrogen / CO2	Pumps stop, motor valves stop, valves to air failure position, no cooling, no heating, no inertization,
Operation Other	When special operation are required	Put in service a line not normally used Clean a filter Change pump / compressor /ejector / line / by pass	No flow, more pressure, reverse flow, composition problems

Annexure 4.-'HAZID template'

HAZARD	CAUSES	CONSEQUENCES	C	E	A	F	P	W	R-C	R-E	R-E	R-A	R	SAFEGUARDS	REF.	RECOM.

Annexure 5.-'HAZOP template'

Company: **Revision:**
Facility: **Intention:**
Session:
Node:
Drawings:
Parameter:

GW	DEVIATION	CAUSES	CONSEQUENCES	C	E	A	F	P	W	R-C	R-E	R-E	R-A	R	SAFEGUARDS	REF.	RECOM.

MP 14

Major Accident Risk Assessment

Revision list

Revision No.	Description	Written By/Revised By	Date
0	First issue	P. Conti	06.04.2016

Written by:	Verified by:	Approved by:
P. Conti Environmental and Safety Coordinator	M. Falzon Head of Health & Safety and Fire	S. Scicluna EMS Management Representative

Contents:

1 Aim and Scope

The purpose of this procedure is to establish the methodology for evaluating the risks of major accidents at Delimara facilities, in the stages of design, engineering, construction and operation of the installations or equipment both in normal operation and in exceptional situations in order to determine the prevention, protection and mitigation measures to prevent the risk of major accidents.

The risk for the personnel, the neighbours, the environment and the facilities is the combination of the vulnerability linked to the consequences and the frequency of the potential scenarios. Whilst the vulnerability depends on the characteristics of the receptor (people, environment, assets), the consequences and the frequency depend on the characteristics of the hazardous substance, the equipment, the process and the safeguards installed.

The aim of this procedure is to define the typical characteristics to be used for the risk assessment.

2 References

COUNCIL DIRECTIVE 2012/18/EU of the 4th July 2012 on the control of major-accident hazards involving dangerous substances

L.N. 179 of 2015 Occupational Health & Safety Authority Act (CAP.424). Control of Major Accident Hazard Regulations, 2015.

Reference Manual Bevi Risk Assessments version 3.2

3 Terms and Definitions

Category 0	Extremely flammable: Liquid substances and preparations with a flash point lower than 0 °C and a boiling point (or the start of a boiling range) less than or equal to 35 °C. Gaseous substances and preparations that may ignite at normal temperature and pressure when exposed to air.
Category 1	highly flammable: Liquid substances and preparations with a flash point below 21 °C, which are not, however, extremely flammable.
Category 2	Flammable: Liquid substances and preparations with a flash point greater than or equal to 21 °C and less than or equal to 55 °C.
Category 3	Liquid substances and preparations with a flash point greater than 55 °C and less than or equal to 100 °C.
Category 4	Liquid substances and preparations with a flash point greater than 100 °C.
Element or safety critical activity	Equipment, installation, materials or substances which may cause a serious accident, in case of abnormal operation; or incident caused by external installation activity (including natural disasters, adverse weather conditions, sabotage, etc…)
ERA	Maltese Environment and Resources Authority
Event tree	A diagram of success and failure combinations are used to identify event sequences leading to all possible consequences of a given initiating event
Frequency	The number of times an outcome is expected to occur in a given period of time (see also probability)
Hazard	intrinsic property of a dangerous substance or physical situation, with a potential for creating damage to human health and/or the environment
Ignition source	A thing able to ignite a flammable cloud, e.g. due to the presence of sparks, hot surfaces or open flames
Loss of containment (LOC)	Event resulting in the release of material to the atmosphere
Major accident	Any event, such a spillage, leakage, fire or explosion, resulted from an uncontrolled during an operation of any establishment affected by the Seveso Directive, posing a serious danger, immediate or delayed, to people, property and environment, either inside or in the outside of the establishment, and where involving one or more dangerous substances
Probability	Measure of the likelihood of an occurrence, expressed as a dimensionless number between 0 and 1. Risk is defined as the probability that within a fixed time period, usually one year, an unwanted effect occurs. Consequently, risk is a dimensionless number. However, risk is often expressed in units of frequency, 'per year'. Since failure frequencies are low, the probability that an unwanted effect will occur within a fixed time period of one year is, practically speaking, equal to the frequency of occurrence per year. In this Reference Manual, frequency is used to denote the risk

Risk	Mean the likelihood of a specific effect occurring within a specified period or in specified circumstances
Risk Analysis	Process of identifying risks in the establishment, which may lead to the generation of major accidents.
Risk Assessment	Activity based on the determination of the possible consequences that may arise regarding the hazards and the likelihood that the consequences may occur.
Teamwork	Group of people appointed to work on the identification of risks.

4 Responsibilities

Environmental and Safety Coordinator (E&SC)

- Proposes risk analysis evaluation criteria
- Coordinates safety data and information gathering, evaluation and updating
- Triggers any changes which require the update of the Major Accident Risk Assessments and coordinates:
    - With the H&S Section and the DPS personnel if the changes are minor
    - With the MR to get an external consultant to carry out the update if changes are major

Head Health and Safety

- supports the E&SC in the review of the Major Accident Risk Assessments
- identifies and assess risk and liaises with the E&SC to update the Major Accident Risk Assessments identified

Safety Representatives (SR):

- supports the E&SC in the review of the Major Accident Risk Assessments
- identifies and assess risk and liaises with the E&SC to update the Major Risk Assessment identified

Management Representative (MR)

- approves the risk analysis evaluation criteria
- gets on board an external consultant when major changes to the Major Accident Risk Assessments are required

5 Frequency

This procedure shall be applied whenever a new Loss of Containment (LOC) scenario has been identified as a result of the application of the procedure MP 13 - Major Hazard Identification or when a Safety Report review is required in accordance to the legal requirement or due to major changes. This shall be determined by the E&SC.

6 Detailed procedural rules

A Risk Assessment is used to make decisions about the acceptability of risk in relation to developments for a company or in the area surrounding an establishment or transport route.

The first step in a Risk Assessment is to identify all hazards. Once a hazard has been identified, it is necessary to evaluate it in terms of the risk generated to the neighbouring community, environment and facilities. Both probability and consequence should be considered although there are situations in which, if either the probability or the consequence can be shown to be sufficiently low or sufficiently high, decisions can be made on just one factor.

6.1 Loss of Containment Events (LOC's)

The generation of a major accident is associated with the loss of containment of equipment containing hazardous substances or the release of energy from them. In the first case spills or leaks with the consequent flammable cloud or direct concern to the environment are expected.

In order to identify these scenarios, it is necessary to study the physical and chemical characteristics of the substances handled at the facility, along with the operating conditions for loading/unloading, transfer, storage and handling. It is also necessary to consider all possible operations performed at the establishment as well as situations of shut down/start up, maintenance, etc.

Any Loss of Containment (LOC) scenario can result in a number of different final consequences which may have an effect on the people, the environment and the facilities. The developing of one or other effect depends in great measure on the environmental conditions, such as the wind velocity, the weather stability, the temperature, the released quantity or the presence of ignition points.

6.2 Risk Analysis and Evaluation

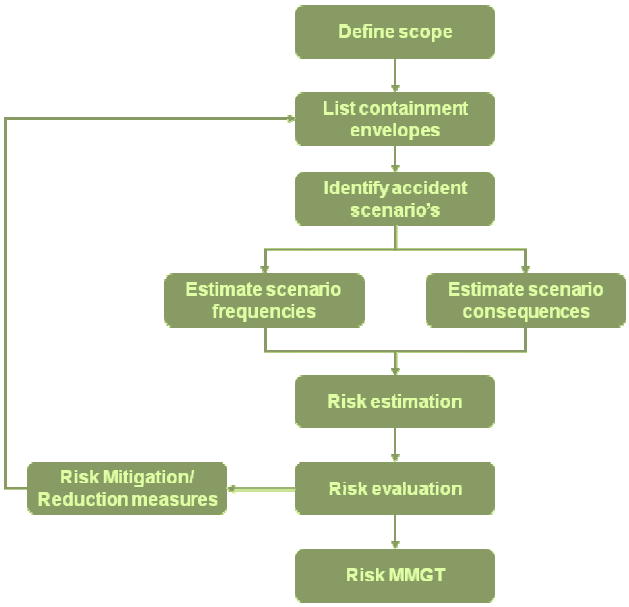
The scope of the analysis shall de defined taking into account:

- Possible areas affected (equipment, tanks, pipes, or installations infrastructure)
- Production processes
- Characteristics and properties of the dangerous substances
- Geographical location and other factors related to external risk sources such as neighbouring infrastructure or industries whose activities could lead to incidents with potential to have an effect on ENEMALTA facilities
- Incidents arising from the implementation and control of the facility and auxiliary services
- Human error (both in operation and maintenance works)

The general steps for risk analysis and evaluation are as follows:

- Data Compilation – The first step is to compile all pertinent data for the risk analysis.
- Hazard identification – The equipment must be characterized in sufficient detail to formulate potential accident scenarios and to permit subsequent evaluation of accident probability, likely release amount, and nature and magnitude of resulting impacts.
- Consequence analysis – Consequence analysis examines the severity of the potential physical impacts and derivative consequences of an equipment failure and accidental release of product.

The general approach is illustrated in the flowchart below. This scope definition (internal, external, domino-effects) shall have an influence on the selection of the relevant installations.



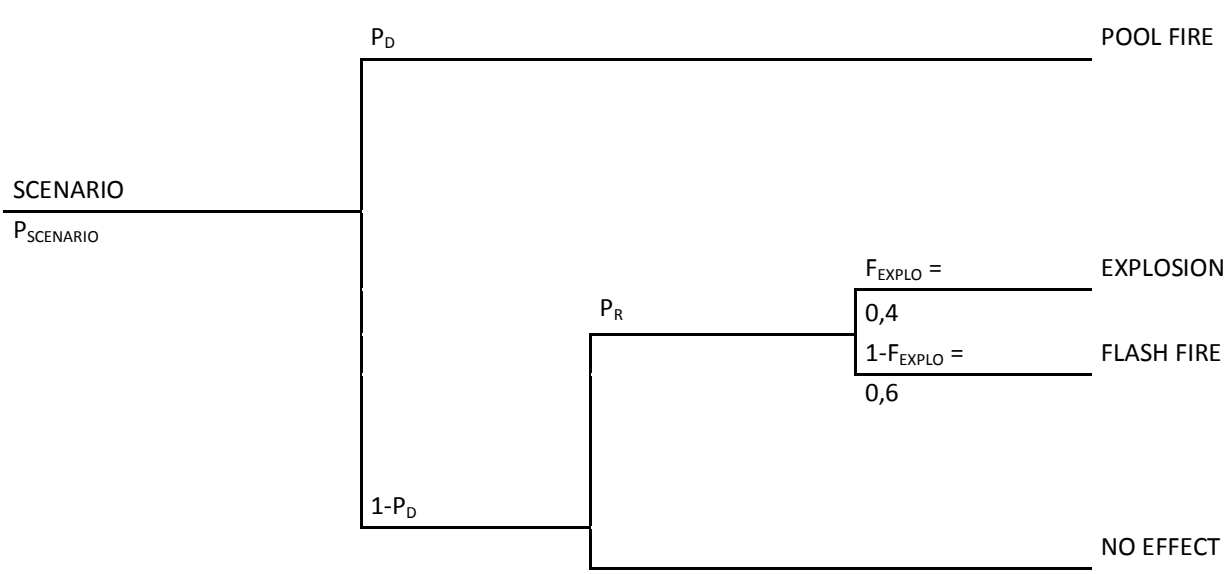
6.3 Determination of the likelihood of final events – Event Tree Analysis.

The goal of the analysis is to quantify the probability of events that determine the evolution from the initial event and end up causing damage.

The event tree is an inductive method that describes in a qualitative and quantitative mode, the evaluation from an initial event up to the final accident depending on the characteristics of the initiator, the environmental and the protection systems, where known.

As an example, the event tree for Heavy Fuel Oil is shown below:

Event tree for heavy fuel oil releases



From the initial failure or initiator and considering the conditioning factors involved, the tree describes the accident sequences leading to possible events. The construction and evaluation of the tree begins by identifying the conditions and their probabilities of occurrence of each of them.

The occurrence probability of each accident scenario is obtained from tabulated standard frequencies from referenced guidelines and must be adapted to the facilities. Some examples are presented in tables below:

Scenarios for single containment atmospheric storage tanks	Frequency (per annum)
Instantaneous release of entire contents	5×10^{-6}
Release of entire contents in 10 min. in a continuous and constant stream	5×10^{-6}
Continuous release from a hole with an effective diameter of 10 mm	1×10^{-4}

Scenarios for pipelines aboveground	Frequency (per meter per annum)		
	Nominal diameter <75 mm	75 mm < Nominal diameter > 150 mm	Nominal diameter > 150 mm
Rupture in the pipeline	1×10^{-6}	3×10^{-7}	1×10^{-7}
Leak with an effective diameter of 10% of the nominal diameter, up to a maximum of 50 mm	5×10^{-6}	2×10^{-6}	5×10^{-7}

Scenarios for centrifugal pumps and centrifugal compressors	Canned (without gasket) Frequency (per annum)	With gasket Frequency (per annum)
Catastrophic failure	1×10^{-5}	1×10^{-4}
Leak (10% diameter)	5×10^{-5}	4.4×10^{-3}

The ignition probability (P_D) shall be defined also. The probability depends on the type of installation (stationary installation or transport unit), the substance category and the outflow quantity. As an example, the values for stationary installations are given in tables below.

Probability of direct ignition for stationary installations			
Substance category	**Source term Continuous**	**Source term Instantaneous**	**Probability of direct ignition**
Category 0 average/ high reactivity	< 10 kg/s 10 – 100 kg/s > 100 kg/s	< 1,000 kg 1000 – 10,000 kg > 10,000 kg	0.2 0.5 0.7
Category 0 low reactivity	< 10 kg/s 10 – 100 kg/s > 100 kg/s	< 1,000 kg 1000 – 10,000 kg > 10,000 kg	0.02 0.04 0.09
Category 1	All flow rates	All quantities	0.065
Category 2	All flow rates	All quantities	0.01
Category 3, 4	All flow rates	All quantities	0

Probability of direct ignition for stationary installations			
Substance category	**Transport unit**	**Scenario**	**Probability of direct ignition**
Category 0	Road tanker Road tanker Tank wagon Tank wagon Ships – gas tankers Ships – gas tankers Ships – semi-gas tankers	Continuous Instantaneous Continuous Instantaneous Continuous, 180 m3 Continuous, 90 m3 Continuous	0.1 0.4 0.1 0.8 0.7 0.5 0.7
Category 1	Road tanker, tank wagon Ships	Continuous, instantaneous	0.065
Category 2	Road tanker, tank wagon Ships	Continuous, instantaneous	0.01
Category 3, 4	Road tanker, tank wagon Ships	Continuous, instantaneous	0

6.4 Consequence Evaluation

For each scenario identified, and every final event - determined by using the event tree analysis - the calculation of their consequences shall be addressed.

For this purpose, the calculation models incorporated into international recognised software must be used.

The analysis of physical effects and consequences consists in determination of the consequences of particular physical effects in hazard zones. A hazard zone is the region in which physical effect of the hazard exceeds critical threshold values and induces negative effects for people, environment and property.

The estimation of the damage zones is based on the use of meteorological data, software models and acceptability criteria.

Maltese ERA has established a planning policy with reference to the control of major accident hazards. These zones are based on the number of individuals likely to be affected by an accident and set at levels of:

50% fatalities in a normal population (Inner zone),

1 to 5% fatalities in a normal population (Middle Zone),

1 to 5% fatalities in a vulnerable population (Outer Zone).

Threshold values for each zone to be used in this determination are summarized in the following table.

RISK ZONES			
EVENT	**OUTER ZONE**	**MIDDLE ZONE**	**INNER ZONE**
Pool fire	Low damage UPP=7.3 kW/m^2	High damage UPP=9.3 kW/m^2	Damage UPP=13.4 kW/m^2
Blast overpressure	1.70 barg	3.00 barg	0.90 barg

For the calculation of the threshold value for heat radiation effects, the thermal radiation is required to give a percentage of fatality for a 30 seconds exposure, calculated using 3 different Probit equations:

7.3 kW/m^2 for 1% fatalities for unprotected (unclothed) persons,

9.3 kW/m^2 for 1% fatalities for protected (clothed) persons,

13.4 kW/m^2 for 50% fatalities for protected (clothed) persons

The probit most commonly used to determine the risk from thermal radiation is the Eisenberg et al (1975) Probit.

Probit = -14.9 + 2.56 ln ($I^{1.33t}$) with I in kW/m^2 and t in seconds.

This relationship applies to people exposed outdoors.

For some types of major hazard installations, damage contours associated with various levels of harm to property and buildings will be produced and provided to the planning authority, showing the maximum possible extent of any particular level of damage.

7 Related documents

MP 13 - Major Hazard Identification Procedure

MP 15

Generic Hazards Management

Revision list

Revision No.	Description	Written By/Revised By	Date
0	First issue	P. Conti	06.04.2016

Written by:	Verified by:	Approved by:
P. Conti Environmental and Safety Coordinator	M. Falzon Head of Health & Safety and Fire	S. Scicluna EMS Management Representative

Contents

1 Aim and Scope

In order to prevent injuries, incidents and major accidents, the company establish this systematic, proactive approach to risk management against exposure to hazards at the workplace, including systems and procedures for identification of chemical, physical and ergonomic hazards and the assessment of their potential risk.

This document provides the core standards that must be achieved by all Enemalta staff and contractors to ensure compliance with legal requirements and with Enemalta Safety Policy. It also offers guidance on how to achieve these standards. It is intended to provide relevant information to managers, employees and contractors, to enable them to undertake their responsibilities in relation to Health and Safety measures.

The scope of this procedure is:

1. To provide and maintain a work environment that is safe and without risk to health for all employees, contractors and others who may be affected by the activities or processes of the company.
2. To avoid all accidents and to ensure that no one suffers ill health as a result of working at Enemalta plc sites.
3. To plan and manage activities so that hazards are assessed and risks eliminated as so far as is reasonably practicable by appropriate protection and prevention measures.

It is also the Health & Safety section's duty to identify all aspects pertaining to Health & Safety that requires monitoring and guidance according to the legal requirements set out in Act **XXVII of 2000 and its Subsidiary Legislation**

2 References

OHSAS 18001:2007, clause 4.5.3.1

Chapter 424 Occupational Health and Safety Authority Act

3 Terms and Definitions

ENE	Enemalta plc
EMS	Environmental Management System
SMS	Safety Management System
E&SC	Environmental and Safety Coordinator
Incident	An incident can be defined as any dangerous occurrence such as fires, gas leaks or explosions, oil and chemical spillages, damages to any equipment/structure etc. containing asbestos, failure of machinery or lifting equipment, etc
Accident	Any unplanned event resulting in an injury ONLY (not including damage to property, plant or equipment).
Injury	When a person hurts himself/herself at the place of work. Injury leave will be applied in accordance to the Social Security Act.
Fatality	A death
Major Accident	an occurrence such as a major emission, fire, or explosion resulting from uncontrolled developments in the course of the operation of any establishment covered by these regulations, and leading to serious danger to human health or the environment, immediate or delayed, inside or outside the establishment, and involving one or more dangerous substances.

4 Responsibilities

Environmental and Safety Coordinator (E&SC)

- Identify need for the application of the procedures, on the basis of the interaction with the other members of the organization, results of audits, outcomes of incident investigations, etc
- Gather all the information required for the application of the procedure, liaising with the Document Controller
- Maintain the hazard assessment updated

Head Health and Safety

- Ensures respect of any local regulation in Occupational Health and Safety
- Investigates any reports on safety shortcomings and proposes recommendations and ensures these are carried out.

Safety Representatives (SR):

- Report to the Head Health & Safety and E&SC any shortcoming with respect to safety

Management representative (MR)

- Ensure human and economic resources are dedicated to the application of the procedure, if not, escalate to top management
- Ensure human and economic resources are dedicated to the implementation of the corrective actions proposed by the application of the procedure, if not escalate to top management

Station, Operations and Maintenance Managers

- Coordinate with the E&SC to detect need for the application of the procedures on the basis of the interaction with the other members of the organization, results of audits, outcomes of incident investigations, etc.

Lead auditor

- Carries out audits to determine that procedures are being followed or to check that there are no safety shortcomings. Any non conformities are reported and sent to the section manager to take the necessary action.

5 Frequency

A Hazard Identification shall be initiated or updated:

- Before a new hazard is introduced due to a major change in design stage
- Before a major change in the process, organization or Standard Operating Procedure occurs
- After an incident/accident happened, with or without injuries or damages
- When there are increased trends of accident or incident figures, exceeding internal/external benchmarks
  When there are increased trends in absence and sickness rates, exceeding internal/external benchmarks

The frequency of the work activity needs to be considered prior to the identification:

- Routine: for any task performed which is conducted as part of normal business and has standard operating procedures developed and implemented.
- Non-routine: for any task performed infrequently, may not have pre-existing standard operating procedures or is a new or modified task/activity.

Hazardous non-routine tasks shall always be submitted to a Hazard Identification. Routine tasks must be submitted periodically and at least following legal requirements.

6 Detailed procedural rules

6.1 Hazard identification and risk assessment

6.1.1. Safety Culture

An effective safety culture resembles the process of quality improvement and uses similar techniques, being based on:

- Continual Improvement
- Adaptability
- Involvement and Accountability
- Problem-solving
- Recognition and rewards of best practices and outstanding behaviors

6.1.2. Hazards

This procedure establishes management structures and methods for hazard identification and evaluation. Although the occurrence of Serious Injuries, Fatalities or Major Accidents is rare, due to the nature of the work undertaken at the site there is always the potential for such incidents. There are certain activities which are likely to happen and have a higher potential for resulting in Serious Injuries, Fatalities or Major Accidents. These activities include the following:

1. Work with Hazardous Energies – including moving or rotating machine parts, electricity, pressure, steam systems, line breaking, tasks requiring Lock-out / Tag-out procedures etc;
2. Confined Space Entry – regular maintenance or repair being the cause of entry etc;
3. Lifting Operations – use of cranes, lifting beams, block and tackle etc;
4. Working at Height – use of scaffolds, ladders or fall arrest systems etc;
5. High Risk Contractor & Construction Work – excavations, demolitions, etc;
6. Mobile Equipment / Vehicles – use in operation and interaction with pedestrians, structures etc;
7. Manual Handling – involving considerable weight or highly repetitive movements etc;
8. Exposure to or Release of Flammable Liquids or Gases –in operation or maintenance;
9. Corrosive Liquid Handling – in operation or maintenance and repair etc;
10. Process Instability – in operation or maintenance and repair etc;
11. Unexpected Maintenance – of plant and equipment or systems etc;
12. Unexpected Changes – in plant and equipment or processes etc; and
13. Emergency Shutdown Procedures – due to unforeseen events etc.

Potential major accidents include:

1. Hazardous substance spillage to the seawater
2. Hazardous substance spillage on the ground
3. Hazardous substance release to the atmosphere
4. Pool fire, jet fire, flash fire proceeding from the ignition of hazardous substances
5. Explosion proceeding from the ignition of hazardous substances dispersed in the atmosphere

It should be noted that it is almost impossible to remove these high risk activities from the day-to-day business operations and each are currently controlled by Standard Operating Procedures or Permits to Work. It does mean however that the current control measures can fail in certain circumstances.

6.1.3. Hazard identification

Every site should have an assessment conducted by the concerned department, assisted where necessary by the HSE personnel -to identify and evaluate tasks/activities with incident/ accident potential. The assessment should be done in accordance with the local regulation. Identified tasks/activities should be evaluated to identify and understand human error and equipment failure modes that potentially could cause an unwanted event. Where necessary, external consultants may also be utilised for such hazard identification.

During the assessment all relevant sources of information available, including site injuries, incidents or near-miss reports, existing hazard task evaluations, field observations, interviews, etc. should be gathered an taken into account

6.1.4. Risk Assessment

The risk assessment is not necessary for each individual/specific activity across the site, but should be carried out for all of the activities as a whole (i.e. for entry to a confined space the site should assess this operation as a whole, not each individual entry or each tank etc. that may require entry).

A risk assessment should be documented and at a minimum include the following items:

- **Task/activity** – Task /activity with the potential of having an incident
- **Hazards** – List the likely hazards that may be commonly posed by this activity. Every single hazard associated with each entry does not need to be listed. Purpose is to consider if control measures are suitable for the worst types of hazards that may arise.
- **Consequences** – What are the consequences associated with the listed hazards (i.e. what could actually happen)?
- **People at risk** – The people at risk from the activity including employees, contractors, visitors
- **Worst case scenario** – The risk without any control measures applied
- **Level of control** – The existing control measures that are currently in place to manage the exposure to hazards
- **Corrective actions** – The measure to adopt in order to minimize the consequences or increase the level of control
- **Responsible & Date** – The person responsible for the required actions with agreed completion date.

The reliability of the existing control measures should be considered. The following, non exhaustive list of questions is provided to assist the team when considering the effectiveness of each existing safety control layer in place:

1. Is there a clear and overall approach to the management of the risk?
2. Does the control measure use more than one safety layer?
3. Do control layers follow the hierarchy of control?
4. Is the level of control clearly defined?
5. Are those who designed the control familiar with the risk that it aims to protect against?
6. Have those who will use the control or be protected by it been consulted during design and implementation?
7. Does the control operate as intended?
8. Can it be easily overridden, bypassed, disregarded or ignored?
9. Is it clearly understood by all concerned?
10. Is it used, as intended, by all concerned?
11. Does it apply to all situations, activities, equipment, etc. where the risk may exist?
12. Does it protect or apply to all people who may be harmed by this risk (contractors, employees, others?)
13. Have all necessary people been informed of or trained in the method of control?
14. Is this information/training updated on a regular basis?
15. Has this control measure or similar measures failed in the past?
16. Is the control measure monitored, tested, inspected or audited on a regular and frequent basis to ensure it is operating as designed?
17. Have internal or external audits noted deficiencies of the control measure?

Any negative answer to the listed questions should be corrected through the introduction of additional actions or measures. A responsible person should be appointed for each action.

Qualitative method may be introduced in the future for a proper assessment of the hazards, considering severity and likelihood in order to determine the acceptability of each risk.

6.1.5 Management of change

When a change in process or work task is introduced, a Management of Change (MOC) process should determine whether the applicability of this procedure, in application of the corresponding procedure.

Non-routine work: for any work task performed infrequently, which has no standard operating procedures, or is a new or modified activity, this procedure is applicable prior to the activity starting.

7 Related Documents

Health and Safety manual

MP 6 - Competence Training and Awareness

MP 13 - Major Hazard Identification & MP 14 - Major Accident Risk Assessment

MP 16

Access Control Procedure

Revision list

Revision No.	Description	Written By/Revised By	Date
0	First issue	P. Conti / S.Scicluna	28.07.2016

Written by:	Verified by:	Approved by:
M. Falzon Head Fire, Health and Safety	S. Scicluna Manager QA, RA, EUA and H&S	R. Balzan Divisional Manager Human Resources
E. Magro Health, Safety and Environmental Officer		G. Agius Executive Director Projects, Regulatory Affairs & Corporate Services
P. Conti Environmental & Safety Coordinator		
Assistant Chief Security Officer		

Contents:

1. Aim and Scope

The purpose of this procedure is to establish rules, roles and responsibilities with which Enemalta plc shall manage access control to security guarded Enemalta sites, mainly Delimara Power Station and Marsa Power Station site and oblige them to comply with relevant EMS, SMS and security requirements.

The procedure is applicable to any person entering the facility.

This procedure is also to be followed by third party security personnel manning the other operator's gate within the DPS Facility.

2. References

Not applicable.

3. Terms and Definitions

ENE Enemalta plc

PFSO Port Facility Security Officer

EMS Environmental Management System

SMS Safety Management System - this applies only for Delimara Power Station and related Administration

E&SC Environmental and Safety Coordinator

DPS Delimara Power Station

MPS Marsa Power Station

SOPs Standard Operating Procedures: An established written procedure to be followed by ENE staff, providing technical and organisational requirements to perform a specific activity

Visitor Any person entering the facilities, except ENEMALTA employees at the site and regular authorised contractors with permanent presence at the site

Contractor Any person/s not directly employed by ENEMALTA that are operating on a temporary contract for works specific to their industrial qualification.

4. Responsibilities

Enemalta employees

- Responsible for following this procedure when accessing the site.
- Responsible for following this procedure whenever he /she receives a visitor at the site
- Responsible for escorting the visitor within the site
- Responsible for the observance of security measures affecting the organization and the employees under their supervision, if any
- Responsible for granting access to classified information or material with limitation to those employees who have a need to know and are capable of protecting the information
- Responsible for reporting any breach in security

Security Guard

- Responsible for fence and gate control
- Responsible for checking the identity of the visitor at the gate, as well as informing the visitor about Enemalta Safety and Environmental Policy and about Emergency procedure
- Responsible for granting access to the visitor.
- Informs the employee about the visitor/s, by phone before allowing any visitors inside Enemalta premises. The employee will then indicate if he/she wishes to meet the visitor/s either at the security guard room or refer the visitor/s to his/her office. The employee may wish to speak to the visitor by phone without allowing him/her to visit the office.

PFSO

- Responsible for the upkeep of the SOP in collaboration with the Environmental and Safety Coordinator.

Visitors

- Responsible for following instructions received.

Contractors

- Responsible for following instructions received.

Manager responsible for Security

- Responsible for ensuring human and material resources for a proper security check at the gates and along the perimeter, requesting support from top management if necessary.
- Responsible for controlling and auditing the quality of security checks, in coordination with the site manager.

5. Frequency

Document Use – Applicable for any visitor entering the facilities. Visitors entering the facilities for a second time on the same day of the same week will be treated as new visitors.

Document revision - This document should be reviewed and updated every twenty four (24) months, unless it is deemed necessary that it should be revised prior.

6. Detailed procedural rules

6.1. ID check

For Enemalta employees (or permanent subcontractors):

- check that the company identification passes issued by Enemalta plc are worn at all times;
- ensure that the persons permitted to enter are authorized and are on official duty.
- Contractors who will be working for a predetermine time may also be issued a temporary pass, which constitutes two cards, one red and one green. Upon entering the facility, one of the cards is to be left with the security guards, and another kept at all times by the

For any visitor reporting at the gate, the security guard shall:

- check identification document (ID card, passport),
- register (log in) the personal contact data, date & time of entry, contact person, visitor's tag number and any other required information in the Visitor's log book
- Visitor is to sign this log book.
- call contact person at Enemalta and confirm that the employee would like to meet the visitor:
    - if yes, the employee is requested to meet the visitor at the security gate
    - alternatively, the employee may wish to speak to the visitor by phone without meeting him/her personally.
    - Alternatively, the security guard may instruct the visitor about the path to be followed to reach the contact only within the Administration Building if instructed by the Enemalta contact person to do so.
- supply visitor with briefing document, that is:
    - DOC 11 - MPS Briefing Document for Contractors and Visitors
    - DOC 12 - DPS Briefing Document for Contractors and Visitors
    - DOC 13 - Distribution Briefing Document for Contractors

  These are available on the Enemalta Intranet Portal at location:

  Documents/Environmental Management System (EMS)/DOCs/
- The security guard is to give the visitor a brief on the emergency alarms of the site and advise of hard hat areas.
- supply visitor with the visitor's tag and advise the visitor to have the pass displayed at all times.

For any visitor leaving the site, the security guard shall:

- collect visitor's tag
- log the visitor out from the register

The visitor shall:

- show ID or any other means of identification
- accept Enemalta rules and instructions detailed in the Safety Instruction Card
- sign in the register where required
- Follow instructions received from the Security guard

- Contact any Enemalta employee in case of being lost or return to security at gate

The Enemalta contact person shall:

- Fill the access request form (sample below) and submit it to the security department in advance for all planned visitors.
- Report to the safety guard in case of non expected visitor or unknown visitor
- Wait for the visitor in a place easy to find and out of any hazardous area
- Immediately inform the security guard in case of lost visitor

Company requesting access		**DATE >**	
Request Location Access		**< (DPS or MPS)**	

Name & Surname	Identification (ID or passport)	Staff / Visitor /Contractor SuPplier (S / V / C / P)	Vehicle Reg	Duration	Comments

6.2. Refusal/Unable to produce ID

Any person who fails to provide proper identification or whose details fail to satisfy security personnel will be ordered to leave facility. Such incident should be recorded by the security guard in the Incident Form and referred to their superiors for further action if necessary.

6.3. Refusal to leave

Security personnel may, if required, use any reasonable force to remove any person who fails to or refuse to leave immediately. In such case, the security guard, in consultation with his superior, shall call in the police/emergency services if deemed necessary. The incident should be recorded by the security guard in the Incident Form and referred to their superiors for further action if necessary.

6.4. Visiting Vessels

This section is only applicable to vessels interacting with the DPS terminal. The PFSO is to ensure that a crew list is to be obtained from the vessel or provided by the agent prior to the ship's arrival at the DPS terminal.

Unless otherwise instructed not to allow any crew members to leave the facility, all crew members leaving the ship and exiting/entering through the facility gate are to produce identification, passport or seaman's log book, and are to be checked against the crew list.

6.5. Visitor's Tag

Visitors control and identification within the site will be managed through Visitor's Tag:

- Visitor's Tags are maintained at the security check (main entrance gate)
- Visitor's Tag shall be laminated with tag number and the "visitor" word stamped
- Visitor's Tag must be worn by visitors at all times on the outer garment, above the waist.
- Visitor's Tag should be handed back to the Security Guard at the exit.
- Visitor's Tag should be checked daily. Any missing badge should be reported and never substituted with the same number.

6.6. Restricted Areas

All the premises of the Power Station are restricted unless visitors/contractors are given the necessary authorisation.

Restricted Ares include, but are not limited to:

- Administration Block
- Stores
- Plant Area
- Tank Area
- New Annexe (fuel for Gas Turbine)
- Quay

The following Restricted areas are to be kept locked outside of working hours

- Administration Block
- Stores
- Workshops

Access t6 the Tank Area is prohibited to non employees unless on official business or visit.

1.1 6.7. Access Gates

Access Gates/barriers are to be kept locked when not in use. Open gates are to be manned and all entries controlled.

Emergency gates and secondary gates which are normally closed, but may require to be opened are controlled by the following procedure:

- Keys are to be drawn from the security office and recorded in the key control log book.
- Whilst any emergency or secondary gate is open it is to be attended all the time.
- Keys are to be returned to the security guard room.

7. Related Documents

DOC 11 - MPS Briefing Document for Contractors and Visitors

DOC 12 - DPS Briefing Document for Contractors and Visitors

DOC 13 - Distribution Briefing Document for Contractors

SOP-SEC-16-03-A - Record of Incoming or Outgoing Vehicles

SOP-SEC-16-03-B - Record of Incoming or Outgoing Persons

SOP-SEC-16-07 A - ncident Report Template

MP 17

Stakeholders Co-ordination Procedure

Revision list

Revision No.	Description	Written By/Revised By	Date
0	First issue		06.04.2016

Revised by:	Verified by:	Approved by: Management Representative

Contents:

1 Aim and Scope

The purpose of this procedure is to establish rules, roles and responsibilities with which Enemalta plc shall cooperate with other stakeholders at the site in any issue related to standard operations, emergency, scheduled maintenance and extraordinary works, major projects, contractors and visitors management, risk assessment, safety management and audits, investigation of incidents and any other relevant issues to comply with EMS and SMS requirements.

Besides, the purpose of this procedure is to establish and maintain good relationships and communications with public stakeholders throughout the course of normal business activities and potential emergency events.

The procedure is applicable to all Enemalta staff. The procedure is applicable to the stakeholders at the site, namely D3 and D4, following their endorsement of the procedure.

2 References

Not applicable.

3 Terms and Definitions

ENE Enemalta plc

EMS Environmental Management System

SMS Safety Management System - this applies only for Delimara Power Station and related Administration

E&SC Environmental and Safety Coordinator

SOPs Standard Operating Procedures: An established written procedure to be followed by ENE staff, providing technical and organisational requirements to perform a specific activity

H&S	Health and Safety
DPS	Delimara Power Station
	Stakeholder: other company operating at the Delimara Site, the Government and any other public agency with an interest or concern about the site.
D3	Delimara 3
D4	Delimara 4
Battery limit	Comprises one or more geographic boundaries, imaginary or real, enclosing a plant or unit being engineered and/or erected, established for the purpose of providing a means of specifically identifying certain portions of the plant, related groups of equipment, or associated facilities.

4 Responsibilities

Environmental and Safety Coordinator (E&SC)

- Provides the necessary support and environmental and safety documentation
- Coordinates with stakeholders whenever there is any safety, environmental or security issue.

Lead Auditor

- Defines the need for carrying out crossed audits with stakeholders on management of common areas

Project Manager

- Ensures that all safety and environmental rules and regulations, as well as this procedure, are observed throughout any new project involving a stakeholder

Stakeholders

- Allocate responsibilities within their organization in order to comply with the procedure
- Promote the implementation of the same procedure or a similar one in their Safety Management Systems and Environmental Management Systems
- Promote communication and cooperation within the site, in order to operate it as a whole.
- Co-operate in the communication with public stakeholders
- Are responsible for their contractor and sub-contractors, for their employees and for their process, with reference to their possible interaction with Enemalta employees, assets and operations.

5 Frequency

Document Use – This document needs to be used with the frequency detailed below for each item:

- Standard operations: when defining the mode of operation and communication at interfaces and battery limits.
- Emergency: when defining the cooperation and communication in case of emergency (i.e. when reviewing the Emergency Response Plan).
- Scheduled maintenance: when defining the mode of operation and communication for any regular maintenance task with an impact on operation at interfaces and battery limits (i.e. repair and test of a pressure instrument sending a signal to another stakeholder; sound testing fire alarms).
- Extraordinary works: specifically for each extraordinary work with a direct or indirect impact at interfaces and battery limits.
- Major projects: specifically for each major project with a direct or indirect impact at interfaces and battery limits.
- Contractors and visitors management: when preparing, reviewing or modifying the procedures regarding contractors and visitors management in their corresponding SMS or EMS.

- Risk assessment, safety management and audits, investigation of incidents: when preparing, reviewing or modifying the procedures regarding risk assessment, safety management and audits in their corresponding SMS or EMS.
- Communication with public stakeholders: specifically for each new official communication with an impact on the relationships with the public.

Document revision - This document should be reviewed and updated every twenty four (24) months, unless it is deemed necessary that it should be revised prior.

6 Detailed procedural rules

6.1 Standard operations

Standard operations require coordination between stakeholders at the site in order to ensure common services are delivered by Enemalta to others and natural gas is delivered by EGM to D3 and D4. The following items shall be implemented:

- the technical characteristics of the services delivered, as well as obligations, actions to be taken in case of force majeure and environmental and/or safety relevant issues should be included in a technical document subscribed by both parties;
- periodical meeting between technical representatives of the parties should be held in order to exchange relevant information about ongoing projects and update the operators;
- constant signal supervision at interfaces should be ensured for all relevant process parameters
- constant communication should be ensured between control rooms through walkie-talkies with dedicated common channels. Telephonic communication should also be ensured as a backup, with direct contact between relevant persons of each stakeholder at the site.

6.2. Emergency

Emergency events require immediate coordination and communication with stakeholders at the site in order to minimize the consequences for the employees, the public, the environment and the critical assets.

- A common cooperation policy in case of emergency (namely consolidated Emergency Response Plan) should be agreed, reviewed and maintained by the stakeholders at the site;
- A communication chain in case of emergency, including escalation levels, coordination with security guards and with external emergency services, should be set in place and maintained.
- Periodical meeting should be held between technical representatives of the parties with the purpose of reviewing and maintaining updated the consolidated Emergency Response Plan, the organization and the material resources required in case of emergency.
- Periodical fire drills and emergency practices should be organized in cooperation with the stakeholders at the site; outcomes should be evaluated and corrective measures taken when required.
- Frequency of meeting and fire drills should be defined in the Emergency Response Plan

6.3 Scheduled maintenance

Scheduled maintenance at the interfaces and battery limits requires coordination between stakeholders at the site in order to prevent any possible injury to employees or damage to environment or assets.

- the scheduled maintenance program with any impact on the interfaces, any supply interruption and any environmental and/or safety relevant issues which may arise from them should be included in a technical document subscribed by all parties;
- periodical meeting between technical representatives of the parties should be held in order to exchange relevant information about expected maintenance operation and update the operators;

- constant communication should be ensured between maintenance operators on field and the affected party through walkie-talkies with dedicated common channels. Telephonic communication should also be ensured as a backup, with direct contact between relevant persons of each stakeholder at the site.

6.4 Extraordinary works

Extraordinary works at the interfaces and battery limits requires specific coordination between stakeholders at the site in order to prevent any possible injury to employees or damage to environment or assets.

- A specific meeting between technical representatives of the parties should be held prior to the works starting, in order to exchange relevant information about expected works and evaluate their impact on the operations (i.e. supply interruptions) as well as on safety and environment;
- constant communication should be ensured throughout all the duration of the extraordinary work, using the channels already established for scheduled maintenance.

6.5 Major projects

Major projects at the interfaces and battery limits, as well as into each facility, requires specific coordination between stakeholders at the site in order to prevent any possible injury to employees or damage to environment or assets. Major projects within one facility, without impact on the interfaces may require temporary road closure, emergency routes diversion, extra traffic entering the gate and higher contractors presence at the site.

- A specific meeting between technical representatives of the parties should be held prior to the project kick off, in order to exchange relevant information about expected works and evaluate their impact on the operations (i.e. supply interruptions) as well as on safety and environment;

- constant communication should be ensured throughout all the duration of the field works, using the channels already established for scheduled maintenance.

- MP 15 - General Hazard Identification and MP 18 - Hazard identification for construction, commissioning should be applied.

6.6 Contractors and visitors management

Entrance of contractors and visitors to the site should be managed by Enemalta Security Guards at the site main gate, in cooperation with other stakeholders involved:

Note: D4 shall have a separate entrance that will be managed independently.

- The technical characteristics of the security services delivered, as well as obligations of the parties and information to be exchanged should be included in a technical document subscribed by all parties;

- Constant telephonic communication should be ensured between check point at the gate and stakeholders. Direct phone number of each employee receiving visitors and contractors should be sent and updated periodically by stakeholders to the Security Guards.

- Relevant safety and environmental issues for the contractors should be addressed in a proper Contractor Management Procedure; impact to other stakeholders should be taken into account; contractors should be informed on the organization at the site and the limit of each facility.

- Each stakeholder at the site is responsible for the presence of its contractors and the possible impact on other stakeholders' employees and assets.

- MP 2 - Suppliers and Contractors Management Procedure and MP 16 - Visitors Management Procedure should be applied

  Links :

  MP2

Documents/Environmental Management System (EMS)/Management Procedures/MP2 Suppliers Contractors/view

MP16

To be added once uploaded

6.7 Risk assessment, safety management and audits, investigation of incidents

- The deployment of a common management system and a common safety and environmental policy for the site should be promoted, in cooperation with the other stakeholders;
- Periodical meeting between technical representatives of the parties should be held in order to prepare, updates and review common parts in their EMS and SMS, as well as other technical documents to be subscribed by the parties;
- A specific meeting between technical representatives of the parties should be held for any new risk assessment, preparation of a new procedure, investigation of accidents, incidents, injuries and near misses;
- Constant communication through telephone and e-mail should be ensured between relevant persons at the HSE department of each stakeholder at the site.
- MP 12 - Reporting and investigation of work related injuries, MP 13 - Major Hazard Identification, MP 14 - Major Accident Risk Assessment, MP 15 - General Hazard Identification, MP 18 - Hazard identification for construction, commissioning are applicable.

6.8 Communication with public stakeholders

Enemalta is committed to an active, effective and transparent communication with the public stakeholders such as the Government and other authorities, representing the interest of the general public.

- A specific meeting between technical representatives of the parties should be held for any new relevant and official communication to the authorities, as well as permitting processes within the IPPC framework.
- Constant communication through telephone and e-mail should be ensured between relevant persons at the HSE department and management of each stakeholder at the site.
- MP 10 - Internal and External Communication is applicable

7 Related Documents

MP 2 - Suppliers and Contractors Management Procedure_

MP 15 - General Hazard Identification_

MP 16 - Visitors Management Procedure_

MP 18 - Hazard identification for construction, commissioning_

MP 20

Performance Monitoring Procedure

Revision list

Revision No.	Description	Written By/Revised By	Date
0	First issue		06.04.2016

Written by:	Verified by:	Approved by:

Contents:

1 Aim and Scope

The objective of the procedure is to define responsibilities and detailed rules used by Enemalta plc (ENE) to monitor and improve the performance in the application of the Environmental Management System (EMS) and Safety Management System (SMS) documents and forms and to ensure that effective Document Control is maintained.

The procedure shall apply to all ENE activities within the EMS and SMS scope.

2 References

EN ISO 14001:04, clause 4.4.5

OHSAS 18001:07, clause 4.4.5

LN 179/2015

3 Terms and Definitions

ENE	Enemalta plc
EMS	Environmental Management System
SMS	Safety Management System -
EMS Scope	The procedure is applicable to all ENE activities within the EMS scope.
SMS Scope	The procedure shall apply to activities within the SMS scope. These include Delimara Power Station and related Administration Departments.
RAO	Regulatory Affairs Office
SOP	Standard Operating Procedure: An established written procedure to be followed by ENE staff, providing technical and organisational requirements to perform a specific activity
MP	Management Procedure: A Procedure describing the operations carried out by Management or organisational entities in view of ENE's environmental obligations

4 Responsibilities

Environmental & Safety Coordinator (E&SC)

- Proposes document control rules
- Coordinates with Document Controller to ensure effective document control
- Should always review EMS and SMS related documents and forms
- Propose and promote new objectives in cooperation with other departments
- Responsible for the performance monitoring

Document Controller

- Manages and maintains EMS and SMS documents in EMS/SMS Folders on Enemalta Server
- Manages and maintains hard copies of EMS and SMS documents

Environmental Representative (ER)

- Supports the E&SC in environmental related documentation

Safety Representative (SR)

- Supports the E&SC in safety related documentation

5 Frequency

- Document use – This document should be used every 12 months for the planning of the monitoring activities and when required during the performance monitoring review.
- Document revision - This document should be reviewed and updated every twenty four (24) months, unless it is deemed necessary that it should be revised prior.

6 Detailed procedural rules

6.1 Introduction

Performance monitoring in the Safety Management System within the Seveso III framework is an aim to be reached on the long term and through indirect monitoring of several parameters. According to statistics, a major accident happening during the lifetime of the plant is extremely unlikely, thus, monitoring the compliance with the safety level shall be done indirectly through the compliance with the set objectives, the planning and the continuous improvement in the introduction of a safety culture of the staff. Performance monitoring in the Environmental

Management System should be carried out as per ISO 14001 standard to which Enemalta plc is certified.

6.2 Establishment of objectives

Objectives shall be:

- established each year following the outcome of the internal and external audits, the results of incident and near misses investigations and the taking into consideration ongoing construction projects or changes expected.
- proposed in cooperation with the involved departments of the DPS and/or stakeholders at the site. In order to permeate the safety culture among all the levels of the organization, the objective shall be transversal and engage as many employees as possible within their department.
- evaluated and filtered in terms of economic cost and benefit generated (Cost Benefit Analysis) in order to optimize the investment in Safety, considering the limitations in resources and budget.
- approved, supported and promoted by the management.
- allocated to a safety/environmental representative within the corresponding department for continuous tracking and in order to provide feedback to the Environmental & Safety Coordinator and the management.
- focused on the achievement of a common management system together with the other stakeholders at the site.
- clear, understandable and referenced to at least one of the following items:
    1. Revision or extension of existing procedures;
    2. Preparation of procedures, covering new features, extending the scope of SMS;
    3. Revision or preparation of new SOP and safe methods of work;

4. New inspection tasks on existing critical elements or extension of the critical elements list;
5. Implementation of corrective or preventive measures proposed as a result of the investigation of near misses and incidents or the application of the hazard identification and management process.

The ultimate objective shall be to increase the score obtained from the performance monitoring and the continuous improvement of the own monitoring process.

6.3 Planning

A detailed plan shall be prepared yearly for the achievement of the objectives in due time:

- Fit new objectives into existing tasks, projects and positions, in order to permeate safety-related issues into the day to day operations;
- Subdivide complex objectives with extensive deadline into several effortless tasks with convenient due date;
- Consider a long term plan of more than one year when required, include intermediate milestones every year for more suitable monitoring;
- Avoid amendments or extensions of previous planning.

6.4 Performance monitoring

The performance monitoring process shall check and score the following items:

- TO: Percentage of objectives achieved in total;
- TOT: Percentage of objectives achieved in due time;
- QO (Quality Objective) : Percentage of objective with a quality level better than expected;

- SO (Standard Objective): Percentage of objective with a quality level as expected;
- PO (Poor Objective): Percentage of objective which needs improvement;

A final score can be obtained thought the following formulas:

$$PLA\ (Planning\ compliance)\ =\ TOT\ +\ \frac{(TO - TOT)}{2}$$

$$PER\ (Performance\ compliance)\ =\ SO\ +\ 2QO\ -\ 3PO$$

$$Total\ performance = \frac{(PLA\ +\ PER)}{2}$$

Positive scores shall tend to 100%. Scores exceeding 100% shows a high percentage of Quality Objectives achieved, suggesting that resources may be invested in the achievement of additional objectives or expected quality level has been set low.

6.5 Leading and lagging indicators

Specific leading and lagging indicators are to be defined in future revision of this procedure, starting in a new fiscal year and taking into account indicators such as total investment in Health, Safety and Environmental protection, total number of hours dedicated, total number of training hours delivered to personnel, hours invested in risk assessment, total number of accident, incidents, injuries, near misses, etc. These indicators will be published and included in the reporting and auditing process.

7 Related Documents

Not applicable