



PMA/PORTS-0055/R6

**Integrated Safety Management System Plan
(Including Environmental Management Systems and
Worker Safety and Health Program)
for the Infrastructure Support Services Contract
at the
Formerly Operating Portsmouth Gaseous Diffusion Plant
Piketon, Ohio**

Date Issued — January 2020

Prepared for the
U.S. Department of Energy
Portsmouth/Paducah Project Office

Prepared by:
Portsmouth Mission Alliance, LLC
managing the
Infrastructure Support Services at the
Portsmouth Gaseous Diffusion Plant
under contract DE-EM0004062
for the
U.S. DEPARTMENT OF ENERGY



Contract DE-EM0004062
PMA/PORTS-0055/R6
PMA ISMS WSHP Plan

This page intentionally left blank.



REVISION LOG

**Integrated Safety Management System Plan
(Including Environmental Management Systems and
Worker Safety and Health Program)
for the Infrastructure Support Services Contract
at the
Formerly Operating Portsmouth Gaseous Diffusion Plant
Piketon, Ohio**

January 2020

PMA/PORTS-0055/R6

Revision No.	Effective Date	Sections Affected	Description
0	03/28/16	All	Baseline document.
1	02/01/17	All	Added facilities and activities discussion to reflect current PORTS nomenclature and PMA non-nuclear Other (Standard) Industrial, QL-4/3 facilities and activities (Sect. 2); performance documents (e.g., plans, policies, procedures) references to reflect PMA nomenclature (throughout); current organization chart (Sect. 6); key personnel roles and responsibilities (Sect. 6.2 to 6.8); CAS Crosswalk (Appendix A) to include PMA CAS document; delete or clarify duplicative and ambiguous text; and general editing and formatting, as needed.
2	2/7/17	All	Added definition for subcontractors/vendors, clarified issues management sharing for multi-contractor worksite, referenced latest version of NFPA 70E, included reference to Executive Order 13693 in the EMS.
3	5/2/18	All	General revision throughout.
4	10/12/18	All	Incorporated 10 CFR 851 upgrades.
5	1/11/19	All	Incorporated NFPA 70E 2018 references to supersede NFPA 70E 2015 references.
6	1/31/20	All	Updated organizational chart, revised Section 9 Environmental Management System (EMS) Program Elements



Contract DE-EM0004062
PMA/PORTS-0055/R6
PMA ISMS WSHP Plan

This page intentionally left blank.



APPROVALS

**Integrated Safety Management System Plan
(Including Environmental Management Systems and
Worker Safety and Health Program)
for the Infrastructure Support Services Contract
at the
Formerly Operating Portsmouth Gaseous Diffusion Plant, Piketon,
Ohio**

PMA/PORTS-0055/R6

January 2020

Damon A. Detillion, Project Manager
Portsmouth Mission Alliance, LLC

2/11/2020
Date

Matthew J. Miller, ESH&Q Manager
Portsmouth Mission Alliance, LLC

2/11/2020
Date



Contract DE-EM0004062
PMA/PORTS-0055/R6
PMA ISMS WSHP Plan

This page intentionally left blank.

CONTENTS

FIGURES.....	vi
TABLES.....	vi
ACRONYMS.....	vii
1 SCOPE	1
2 INTRODUCTION.....	2
3 ISMS GOALS, OBJECTIVES, AND PERFORMANCE INDICATORS.....	4
4 PMA COMMITMENT TO INTEGRATED SAFETY MANAGEMENT	4
5 FOUR LEVELS OF ISMS IMPLEMENTATION.....	5
6 RIGHTS, ROLES, AND RESPONSIBILITIES.....	6
6.1 THE EMPOWERED WORKER	7
6.1.1 Worker Rights	7
6.1.2 Worker Responsibilities.....	8
6.2 PROJECT MANAGER AND DEPUTY PROJECT MANAGER OR DESIGNEE.....	9
6.3 DEPARTMENTS AND FUNCTIONS.....	10
6.4 LINE MANAGEMENT	11
6.5 ESH&Q DEPARTMENT.....	12
6.6 HR FUNCTION.....	14
6.7 TRAINING PROGRAMS FUNCTION.....	15
6.8 FACILITY MANAGER	15
7 ISMS GUIDING PRINCIPLES	15
7.1 LINE MANAGEMENT RESPONSIBILITY FOR SAFETY	15
7.2 CLEAR ROLES AND RESPONSIBILITIES.....	16
7.3 COMPETENCE COMMENSURATE WITH RESPONSIBILITY	16
7.3.1 Training and Information - All Employees	16
7.3.2 Training – Employees with Special Responsibilities	17
7.4 BALANCED PRIORITIES	18
7.4.1 Baseline	18
7.4.2 Procurement.....	18
7.4.3 Scheduling Work.....	19
7.5 IDENTIFICATION OF SAFETY STANDARDS AND REQUIREMENTS	19
7.6 HAZARD CONTROLS TAILORED TO WORK BEING PERFORMED	22
7.7 OPERATIONS AUTHORIZATION	22
7.8 WORKER INVOLVEMENT	23
7.8.1 Job Planning	24
7.8.2 Employee Concerns.....	24
7.8.3 Worker Safety Committee	25
8 CORE FUNCTIONS	25

8.1	DEFINE THE SCOPE OF WORK	25
8.1.1	Translate the Contract Scope into Work	26
8.1.2	Set Expectations	26
8.1.3	Prioritize Tasks.....	26
8.1.4	Allocate Resources	27
8.2	ANALYZE HAZARDS	27
8.3	DEVELOP AND IMPLEMENT HAZARD CONTROLS.....	28
8.3.1	Identify Controls to Mitigate or Prevent Hazards.....	28
8.3.2	Establish Controls	28
8.4	PERFORM WORK WITHIN CONTROLS.....	29
8.5	FEEDBACK AND IMPROVEMENT	29
8.5.1	Assessments	30
8.5.2	Issues Management.....	31
8.5.3	Operating Experience/Lessons Learned.....	31
8.5.4	Trend Analysis	31
9	EMS PROGRAM ELEMENTS	31
9.1	GENERAL EMS REQUIREMENTS	33
9.2	ENVIRONMENTAL POLICY	33
9.3	PLANNING	34
9.3.1	Environmental Aspects.....	34
9.3.2	Compliance Obligations	34
9.3.3	Objectives and Programs	35
9.4	IMPLEMENTATION AND OPERATION.....	35
9.5	CHECKING.....	36
9.6	MANAGEMENT REVIEW	36
10	WSHP ELEMENTS	37
10.1	MULTI-CONTRACTOR WORKSITE	37
10.2	QUALIFIED WORKER SAFETY AND HEALTH STAFF.....	37
10.3	RECORDKEEPING AND REPORTING	38
10.3.1	Records Management	38
10.3.2	Other Protected Information	38
10.3.3	Reporting	39
10.4	QA	39
10.5	CONDUCT OF OPERATIONS.....	39
10.6	PROCEDURES	39
10.7	OCCUPATIONAL AND ENVIRONMENTAL RADIATION PROTECTION	39
10.8	CONSTRUCTION SAFETY	40
10.9	EMERGENCY MANAGEMENT AND FIRE PROTECTION.....	40
10.10	FIREARMS SAFETY	40
10.11	EXPLOSIVES SAFETY	40
10.12	PRESSURE SAFETY	41
10.13	ELECTRICAL SAFETY.....	41
10.14	INDUSTRIAL HYGIENE	41
10.15	OCCUPATIONAL MEDICINE	41
10.16	BIOLOGICAL SAFETY	42
10.17	MOTOR VEHICLE SAFETY	42

11 DEFINITIONS.....42

APPENDIX A: CONTRACTOR ASSURANCE SYSTEM (CAS) CROSSWALK WITH THE CAS
[PMA (EQ QM PLA) PORTS 17-6106, Sect. 1-9] QAP/QIP [PMA (EQ QM PLA)
PORTS 16-6077, SECT. 1-10], ISMS PLAN [PMA (EQ SH PLA) PORTS-0055,
This Document, Sect. 1-10], AND VPP Tenets..... A-1

FIGURES

Figure 1. Excerpt from PMA EQ SH POL 1721, Safety Policy	5
Figure 2. PMA Organization Chart	6

TABLES

Table 1. Required Regulations and Standards for PMA	20
Table 2. ISMS Integration with VPP and QA	25
Table 3. Integration of the PMA EMS with ISMS	32
Table 4. Implementing Procedure and Program Types of Records	38

ACRONYMS

ACGIH	American Conference of Government Industrial Hygienists
AHA	Activity Hazard Assessment
AHJ	Authority Having Jurisdiction
ALARA	As Low As Reasonable Achievable
ANSI	American National Standards Institute
AQL	Acceptable Quality Level
ASME	American Society of Mechanical Engineers
BOD	Board of Directors
CAA	Clean Air Act
CAIRS	Computerized Accident Incident Reporting
CAS	Contractor Assurance System
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLIN	Contract Line Item Number
CO	Contracting Officer
CTS	Commitment Tracking System
D&D	Decontamination and Decommissioning
DEAR	Department of Energy Acquisition Regulation
DLS	Directives, Laws, and Standards
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U. S. Department of Energy
DPM	Deputy Project Manager
DPO	Differing Professional Opinion
EIC	Environmental Information Center
ELIN	Exhibit Line Item Number
EmM	Emergency Management
EM	Environmental Management
EMP	Emergency Management Plan
EMS	Environmental Management System
ERPP	Environmental Radiation Protection Program
ES&H	Environmental, Safety, and Health
ESH&Q	Environmental, Safety, Health and Quality
FBP	Fluor-BWXT Portsmouth LLC
FUEF	Former Uranium Enrichment Facilities
FY	Fiscal Year
GAO	Government Accountability Office
GET	General Employee Training
GFS&I	Government Furnished Services and Items
HR	Human Resources
ICA	Independent Conformity Assessment
IG	Inspector General
IH	Industrial Hygiene
IOP	Integrated Oversight Program

ACRONYMS (cont.)

ISMS	Integrated Safety Management System
ISO	International Organization for Standardization
ISS	Infrastructure Support Services
IT	Information Technology
LEARN	Local Education Administration Requirements Network
MC&A	Materials, Control and Accountability
MCA	Management Conformity Assessment
MPR	Monthly Progress Report
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NPDES	National Pollutant Discharge Elimination System
NTS	Noncompliance Tracking System
NWS	Nuclear, Worker Safety and Health, and Security
OA	Oversight Activity
OELL	Operating Experience/Lessons Learned
ODS	Ozone-Depleting Substances
ORPS	Occurrence Reporting and Processing System
OSHA	Occupational Safety and Health Act
P&I	Performance & Integration
P2	Pollution Prevention
PD	Position Description
PF	Protective Force
PM	Project Manager
PMA	Portsmouth Mission Alliance, LLC
PMB	Performance Measurement Baseline
PMCP	Project Management Cost Processor
POC	Point of Contact
POMC	Performance Objectives, Measures, and Commitments
PORTS	Formerly Operating Portsmouth Gaseous Diffusion Plant
PPE	Personal Protective Equipment
PPPO	Portsmouth/Paducah Project Office
PRS	Performance Requirements Summary
PTHR	Pre-task Hazard Review
PWS	Performance Work Statement
QA	Quality Assurance
QAP/QIP	Quality Assurance Plan/Quality Implementation Plan
QASP	Quality Assurance Surveillance Plan
RFP	Request for Proposal
RMDC	Records Management and Document Control
RPP	Radiation Protection Program
RRAL	Roles, Responsibilities, Authorities and Lines of Communication
SAT	Systematic Approach to Training
SBD	Safety Basis Documents
SCWE	Safety Conscious Work Environment
SI	Standard Industrial
SMA	Subject Matter Area

ACRONYMS (cont.)

SME	Subject Matter Expert
SRB	Senior Review Board
TLV	Threshold Limit Values
TPD	Training Position Description
USW	United Steelworkers
VPP	Voluntary Protection Program
WBS	Work Breakdown Structure
WIN	Worker Involvement Network
WSHP	Worker Safety and Health Program

This page intentionally left blank.

1 SCOPE

Portsmouth Mission Alliance, LLC (PMA) performs the primarily fixed price Infrastructure Support Services (ISS) scope of work at the U. S. Department of Energy (DOE) Portsmouth Gaseous Diffusion Plant (PORTS) in Piketon, Ohio in accordance with the terms and conditions of DOE prime Contract No. DE-EM0004062. PMA is responsible for ensuring compliance with all applicable laws, regulations, and other requirements as defined in the contract. This Integrated Safety Management System (ISMS) Plan describes how PMA ensures that all work is performed safely.

Directives, laws, and standards (DLS) and PMA implementing performance documents (e.g., policies, procedures, plans) are referenced in this document as follows:

- The latest revision [i.e., change (Chg.)] of DLS is shown when first referenced (e.g., DOE O 414.1D, Chg. 1), and inferred thereafter.
- Performance document revision numbers are not referenced, but the latest as of the issue date of the ISMS Plan is inferred. Performance document numbering nomenclature is explained in Sect. 11, Definitions.

PMA is composed of North Wind Solutions, LLC and Swift and Staley, Inc., with contract named major subcontractor services provided by Leidos Inc. Key elements of the scope of work include, but are not limited to [as assigned by DOE Contracting Officer (CO)], the following: Environmental, Safety, Health and Quality (ESH&Q) Program; Engineering; Project Management; Property Management; Safeguards and Security; Computing, Telecommunications, and Cyber Security; Operations and Management of Assets (e.g., Maintenance Management); Facility Services (e.g., Grounds Maintenance); Records Management and Document Control (RMDC); Mail, Shipping, and Receiving Services; Environmental Information Center (EIC) Operations; and Training Services.

Specific contract requirements to accomplish the scope of work are identified in the DOE Quality Assurance Surveillance Plan (QASP) (Attachment J-11 to DE-EM0004062). The QASP Appendix A, Performance Requirements Summary (PRS), identifies 19 contract line item numbers (CLINs), exhibit line item numbers (ELINs), and functional areas (i.e., elements) in the Performance Work Statement (PWS), and 195 performance standards to meet the elements, which encompass the Contract Scope of Work. For each performance standard, the Acceptable Quality Level (AQL) is identified.

PMA manages the ISS scope primarily through self-performance, with a small portion of its scope through minor (non-contract named) subcontracts. Work determined to be “project work” may require a specialized subcontractor. All subcontractors (major and minor) must function within the PMA ISMS structure, while performing work in accordance with specific subcontract scope, requirements, and terms. This ISMS Plan is a mandatory subcontractor document.¹

¹ Subcontractors shall follow this ISMS Plan, but may follow their own lower level environmental, safety, and health programs if approved to do so by PMA.

The PMA ISMS is not applicable to work performed by other DOE Prime Contractors, their subcontractors, or other site tenants. PMA will communicate with other site residents, as appropriate, to ensure coordination of safe work activities.

2 INTRODUCTION

This ISMS Plan describes the philosophy, implementation, and integrating methods PMA will use to ensure a safe workplace. DLS promulgated in the PMA contract through Department of Energy Acquisition Regulation (DEAR) 970.5204-2, *Laws, Regulations, and DOE Directives*, establish basic requirements for facilities and activities with the potential to cause harm; ensure that risks and environmental impacts are minimized; and ensure that safety, reliability, and performance are maximized with effective management systems. This ISMS Plan describes how PMA will comply with ISMS core functions and principles required by DOE O 450.2, Chg. 1, *Integrated Safety Management*; and DOE P 450.4A, Chg. 1, *Integrated Safety Management Policy*; DOE Acquisition Regulation 970.5223-1, *Integration of Environmental, Safety, and Health (ES&H) into Work Planning and Execution*; and integrates the Worker Safety and Health Program (WSHP) requirements of 10 Code of Federal Regulations (CFR) 851, *Worker Safety and Health*. It integrates the Environmental Management System (EMS) in accordance with DEAR 952-223-78, *Sustainable Acquisition Program*; DEAR 970.5223-2, *Affirmative Procurement Program*; and DOE O 436.1, *Departmental Sustainability*, to provide for managing facilities in an environmentally preferable and sustainable manner that will protect the natural environment and the health and well-being of employees and service providers. Throughout this plan, the acronym ISMS also includes the EMS and WSHP.

The ISMS Plan integrates key portions of PMA (EQ QM PLA) PORTS 16-6077, *Quality Assurance Program Plan and Quality Implementation Plan (QAP/QIP)*; PMA (EQ QM PLA) PORTS 17-6106, *Contractor Assurance System (CAS)*; and the DOE Voluntary Protection Program (VPP) tenets, in accordance with:

- QAP/QIP – DOE O 414.1D, Chg. 1, Attachment 2, Sect. 2 a(4)(a) and (b), and Sect. 4.1.1.2 of DOE G 414.1-2B, *Quality Assurance Program Guide*
- CAS – DOE O 226.1B, *Implementation of DOE Oversight Policy*
- VPP – DOE VPP Manual

This integration is described in the QAP/QIP, CAS, and VPP application, and as shown in Appendix A, CAS Crosswalk with the CAS, QAP/QIP, ISMS Plan (this document), and VPP tenets.

The ISMS plan, QAP/QIP, and CAS provide the underlying programs and processes to implement, monitor, oversee, and report to DOE successful performance of the QASP.

PMA implements the requirements of these and other contract documents using a graded approach in accordance with EQ QM PRO 1215, *Graded Approach*. The graded approach is the process by which the extent (level of rigor) of application of control is determined, based on the importance of the activity or scope of work relative to public and worker safety, potential for

environmental releases, working within facility performance boundaries, and achieving programmatic mission objectives. A graded approach is applied to meet customer expectations and regulatory compliance in a cost-effective manner. More rigor is applied to work where more complex and hazardous activities are identified, versus routine work.

PMA managed and occupied facilities plus related work activities that comprise the contract scope of work have been previously evaluated in the development of PORTS site safety basis documents by past and present contractors, including the current decontamination and decommissioning (D&D) contractor Fluor- BWXT Portsmouth LLC (FBP).

PMA managed facilities (i.e., X-112 Data Processing Center, X-152J Data Center, X-540 Telephone Building, X-744B Salt Storage Building, X-744K Warehouse, X-751 Mobile Equipment Garage, X-1000 Administration Building, X-3000 Engineering and Procurement Center) are below threshold values in the PORTS site safety basis documents hazard analysis, and were screened out of the analysis as Standard Industrial (SI; i.e., hazards commonly found in industrial facilities). PMA applies the ISMS program to managed facilities to ensure job hazards are not outside the established safety envelope.

PMA occupies office (e.g., records, maintenance) and shop areas (e.g., painting, carpentry) in two FBP Former Uranium Enrichment Facilities (FUEF) Category 2 facilities (X-700 Converter Shop and Cleaning Building and X-720 Maintenance and Stores Building), and performs work in FBP SI facilities (e.g., X-735A Landfill Utility Building, XT-801 Southwest Office Building, X-1020 Emergency Operations Center), but these activities are also SI. PMA personnel work under the umbrella of the PORTS site safety basis documents (SBDs) and other requirements as enforced by the FBP Facility Managers assigned to these facilities, and apply the ISMS program to ensure job hazards are not outside the established safety envelope. PMA personnel following authorized work practices do not affect the safety basis in their minor interaction with these facilities and activities.

The integration of EMS into the ISMS provides a unified strategy for implementation of environmental management, environmental protection, environmental compliance, pollution prevention, resource conservation, and waste minimization into management and work practices at all levels so that work is performed in a compliant manner that is protective of the worker, public, and environment.

The EMS is based upon the elements of the International Organization of Standardization 14001:2015 as incorporated in PMA EQ EN MAN 1056, *Environmental Management System Manual*. The EMS promotes the long-term stewardship of PORTS natural and cultural resources through careful screening of all activities with the potential to affect these resources to ensure there will be no impacts or that the impacts are mitigated. The EMS incorporates practices that strive to meet sustainability goals. Various techniques, including segregation and substitution, re-use, recycling, sustainable development, and procurement of environmentally preferable products and services are utilized in support of site sustainability. The program has procedures in place to ensure early identification of and appropriate response to potential adverse environmental impacts associated with PMA operations, including pre-operational characterization and assessment, and effluent and surveillance monitoring, as required. Environmental aspects and impacts are evaluated each year and objectives are developed to reduce or eliminate potential environmental harm.

The WSHP provides a framework to achieve greater worker protection through the application of performance based standards and regulations. This approach allows PMA to customize its WSHP to the needs of its scope and workforce. The WSHP includes many elements of a successful safety program such as: management commitment, worker involvement, safety training, accident investigation, and recordkeeping.

In addition to these program elements, there are ten specific safety and health emphasis areas required in 10 CFR 851. Seven of these are applicable to the current PMA scope, which are discussed in more detail in Sect. 10, WHSP Elements. Areas included are: construction safety, fire protection, pressure safety, electrical safety, industrial hygiene (IH), occupational medicine, and motor vehicle safety. Biological safety, firearms safety, and explosives safety are currently not applicable.

Further details of the EMS and WSHP are provided in Sects. 9 and 10 of this plan, respectively.

The majority of implementation of ISMS is accomplished through PMA's performance documents (policies, directives, programs, and procedures). This plan is updated annually by the ESH&Q Department. When significant changes are made, it is submitted to the head of the DOE Field Element for review and approval.

3 ISMS GOALS, OBJECTIVES, AND PERFORMANCE INDICATORS

The objective of this ISMS plan is to systematically integrate ES&H, sustainability, and Quality Assurance (QA) into management and work practices at all levels so that workers, the public, and the environment are protected while PMA missions are accomplished. Through this integration, workers are empowered to “do work safely” in concert with “doing work correctly,” and fostering a “no fault” attitude toward the identification and reporting of deficiencies.

PMA annually establishes performance indicators to measure the effectiveness of this plan in response to DOE program and budget execution guidance. The Fiscal Year (FY) 2020 Performance Objectives, Measures, and Commitments (POMC) were comprised of DOE and Portsmouth/Paducah Project Office (PPPO) mandated injury goals as well as programmatic leading indicators. Identified goals and performance indicators are approved by the Senior Review Board (SRB), as described in PMA EQ QM PRO 1216, *Senior Review Board*, with concurrence from the United Steelworkers (USW) Safety Representative. Achievements relative to the performance indicators are shared with the DOE/PPPO and PMA Line Managers. Summary reports are generated quarterly and prominently displayed in PMA facilities.

4 PMA COMMITMENT TO INTEGRATED SAFETY MANAGEMENT

The PMA Mission, Vision, Values states: *Our mission is to provide exceptional products and services to our customers embodying the principle where safety leads, performance follows. Our vision is to constantly and consistently exceed customer expectations. Our values are: Safety (Demonstrates Our Ownership), Performance (Demonstrates Our Reliability, and to Innovate and continuously Improve Our Products), Customer Service (Demonstrates Our Responsiveness), Integrity (Demonstrates Our Character), and Community (Demonstrates Our Compassion).*

PMA has established a safety policy to serve as a summary of the ISMS philosophy and dedication to performing work safely. PMA policy, PMA EQ SH POL 1721, *Safety Policy*, states:

Portsmouth Mission Alliance, LLC (PMA) is committed to ensuring a safe and healthful workplace, free from recognized hazards. No schedule or milestone is worth placing the safety and health of our employees at risk. Whether employed by PMA or a subcontractor, each employee has an individual responsibility to understand and support our environmental, health, and safety policies and to actively participate in the program to ensure our goals are achieved.

Employees are expected to comply with all federal and state regulations, DOE directives, and PMA policies and procedures. Line Managers will support this commitment to safety and will be responsible for the safety of their employees.

PMA believes that every employee must be involved in managing the workplace safety process. Work planning, hazard recognition, effective hazard controls, performance within those controls, and continuous feedback are essential elements to a successful safety program. Through employee commitment and participation, PMA will continue to be a leader in worker safety and environmental compliance.

Damon Detillion
PMA Project Manager

Figure 1. Excerpt from PMA EQ SH POL 1721

PMA conveys this commitment to quality and safety through the safety slogan “Where Safety Leads, Performance Follows.”

5 FOUR LEVELS OF ISMS IMPLEMENTATION

PMA approaches work performance in four levels:

- The contract or company level establishes controls for the company.
- The facility level defines controls based on the hazards present in the facility or surrounding area.
- The subcontract level addresses controls at a level needed to award a subcontract and to assign specific task orders.
- The activity or worker level ensures that controls are in place at the point where work is performed.

Throughout this ISMS Plan, the guiding principles and core functions are discussed in terms of these four levels of implementation. These levels define development of work scope, identification of hazards, and implementation of controls.

6 RIGHTS, ROLES, AND RESPONSIBILITIES

The PMA organizational chart and Line Management Roles, Responsibilities, Authorities, and Lines of Communication (RRAL) Matrix (PMA EQ QM GUI 1334) depict organizational RRAL. This section discusses the ISMS related roles, rights, and responsibilities of key positions and organizations.

Work organizational interrelationships are included in the PMA Organization Chart (see Fig. 2). The Organization Chart depicts the Board of Directors (BOD), Project Manager (PM), Deputy Project Manager (DPM), Departmental Manager, and Functional Manager levels of the organization.

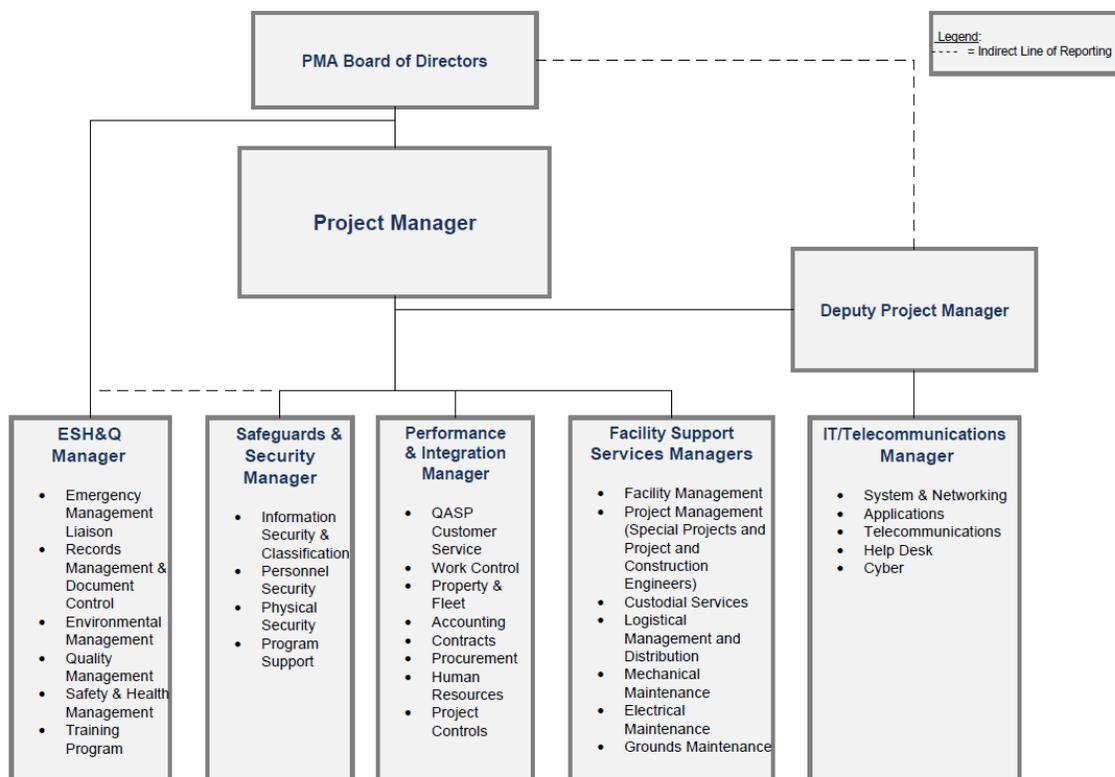


Figure 2. PMA Organization Chart

In the PMA organization, Line Management (including the PM, departmental managers, and functional managers, leads, coordinators, supervisors, specialists, and special projects project manager and construction engineers when assigned to special projects) has the responsibility and accountability for the scope and implementation of the ISMS as it applies to their department, function, and project responsibilities. Line management delegates responsible and accountable backup personnel for their positions when they are not on plant site in accordance with PMA PI PM POL 0061, *Delegation of Authority*.

Line management is responsible and accountable for flowing down and implementing the ISMS through DLS compliant programs, processes, and associated deliverables; staffing, direction, training, mentoring, oversight, and planning; and budgeting, scheduling, and providing resources for effective project execution.

The Departmental managers report directly to the PM, DPM or designee, with the exception of the ESH&Q Manager who has dotted line reporting to the PM, DPM or designee, and direct line reporting to the BOD for independence. Functional managers, leads, coordinators, supervisors, specialists, and special projects project manager and construction engineers when assigned to special projects, report directly to departmental managers, with the exception of the ESH&Q Functional managers who also have an independent line of reporting to the BOD, PM, and/or DPM for independence. Other organizational personnel report directly to Functional managers, leads, coordinators, supervisors, and specialists.

6.1 THE EMPOWERED WORKER

All employees and subcontractors, including managers and supervisors, are empowered to suspend or stop work any time an unsafe condition exists. This information is communicated in PMA PI HR GUI 3340, *PMA Employee Handbook*, as well as in General Employee Training (GET) and publicized on posters throughout plant site.

6.1.1 Worker Rights

Workers have the right to a workplace free from job-related safety and health hazards and to have a voice in the safety of their workplace. Many of these worker rights are detailed in the DOE Safety and Health poster, which is posted at different PMA work locations. In addition, workers have the right to:

- Exercise Stop Work Authority in accordance with PMA EQ SH PRO 1512, *Suspension/Stop Work*.
- Receive notification when overexposed to hazardous materials.
- Observe monitoring of hazardous agents and receive results of their own monitoring.
- Have an employee representative accompany the DOE Director of EM or authorized personnel during inspections to aid the inspection. If a representative is not available, the Director may consult with employees directly.
- Request and receive results of accident investigations.
- Express potential concerns related to ESH&Q issues without fear of reprisal.
- Participate in ESH&Q related activities described in this plan on official time.
- Access information relevant to the WSHP and EMS including: DOE safety and health publications, this ISMS Plan, standards, procedures, controls applicable to the workplace, the DOE safety and health poster, accident recordkeeping information including the Occupational

Safety and Health Act (OSHA) 300 log and DOE Form 5484.3, or equivalent, environmental noncompliance(s), and EMS objectives. Many of these documents are available on the PMA intranet site. Documents that are not available on the website may be obtained by contacting a Line Manager or a member of ESH&Q Department.

6.1.2 Worker Responsibilities

Each employee, as an empowered worker, holds the key to the success of ISMS. Whether employed by PMA or a subcontractor, each employee's abilities and commitment to execute activities in a safe, environmentally sound, and correct manner form the basis for PMA's safety culture. PMA is committed to all employees being trained and qualified commensurate with their duties and responsibilities.

During the hiring process, potential employees are first introduced to the philosophy of personal responsibility for safety and protection of the environment. Each employee's job description includes a responsibility to demonstrate a personal commitment to safety, environmental protection, and quality. Each worker has the responsibility and accountability to:

- Participate in hazard assessments and improvement activities, as appropriate. Such activities include job walkdowns, pre- and post-job briefings, and issues/concerns reporting processes.
- Comply with company safety rules; workers who fail to follow the established rules are subject to PMA disciplinary policies, or the policy of their company, if a subcontractor.
- Do not conceal or destroy any information concerning noncompliance or potential noncompliance with the requirements of this plan.
- Understand the concept of ISMS and how the five core functions apply to his/her specific work activities.
- Make safety a personal value and accept responsibility for personal safety.
- Report any ESH&Q concerns and unsafe practices or conditions observed to supervisors, a member of ESH&Q, and/or an appropriate bargaining unit representative.
- Use Stop Work Authority to suspend/stop work when necessary to protect the worker, other co-workers, or the environment.
- Immediately report all injuries, accidents, illnesses, or near misses to supervision or a member of ESH&Q.
- Attend scheduled training and maintain qualifications to perform the work tasks assigned.
- Attend and participate in safety meetings and, as requested, participate on safety committees.
- Participate in incident investigations and assessments when requested.
- Provide performance feedback upon completion of activities.

6.2 PROJECT MANAGER AND DEPUTY PROJECT MANAGER OR DESIGNEE

The PMA PM reports directly to the Corporate BOD and to DOE/PPPO. The PM is responsible for the day-to-day leadership, management, administration, and oversight of project execution in accordance with the PMA contract federal, state, and local directives, laws and standards, and associated contract deliverables.

The DPM or designee reports directly to the PM, and is responsible and accountable to the PM in implementing the role, responsibilities, and authority for effective project execution. The DPM assumes authority and directs Line Management as delegated by the PM to effectively accomplish project execution. The DPM is also the Performance and Integration Departmental Manager, and provides management oversight of the Information Technology (IT; including Telecommunications and Cyber) Department.

The PM is responsible and accountable for:

- Establishing company's mission, vision, and values to provide customers with the highest standards of performance;
- Establishing safety, environmental, and quality cultures and communicating the importance of ISMS, EMS, and WSHP;
- Organizational structure, roles and responsibilities, and levels of authority;
- Business systems and performance objectives;
- Providing systematic planning and integrated execution of an EMS for public health, environmental protection, sustainability, and compliance with environmental protection requirements;
- Ensuring that all PMA personnel are informed of communication channels available to them for addressing concerns;
- Providing the necessary financial resources for development and implementation of the ESH&Q program;
- Ensuring that ISMS field evaluations are included in management assessments, scheduled, and performed;
- Ensuring ESH&Q performance is included in periodic performance reviews and annual appraisals of all Line Managers; and
- Ensuring that Line Managers are held accountable for safety performance in their respective organizations.

6.3 DEPARTMENTS AND FUNCTIONS

The PMA organization is further defined by Departments and their Functions including:

- **ESH&Q**. RMDC, ESH&Q, and Training. ESH&Q also facilitates Emergency Management (EmM) through liaison interaction with the FBP EmM Manager;

Safeguards and Security. Program Management Operations and Support, Information Security (including Classification), Personnel Security (including Foreign Visits and Assignments), and Physical Security (including Locksmiths). Also, the Safeguards and Security Manager oversees Protective Force (PF) and Nuclear Materials, Control and Accountability (MC&A) performed by the D&D Contractor.
- **Performance & Integration (P&I)**. QASP Customer Service, Work Control, Property and Fleet, Accounting, Contracts, Procurement, Human Resources (HR), and Project Controls. The P&I Manager is also the DPM;
- **Facility Support Services**. Project Management (Special Projects, Engineering, and Construction Oversight), Facility Management, Custodial Services, Logistics Management and Distribution, Facility Maintenance - Mechanical, Facility Maintenance - Electrical, and Grounds Maintenance;
- **Information Technology (IT, including Telecommunications and Cyber)**. Systems and Networking, Applications, Telecommunications, Helpdesk, and Cyber.

Departmental and Functional Managers are responsible and accountable for:

- Embracing and championing the company safety and quality vision into the organizations they manage in order to empower themselves and workers to operate at the highest standards of performance;
- Ensuring that self-performed and subcontract work activities and initiatives are consistent with the PMA ISMS and Quality programs;
- Ensuring ISMS-related criteria are included in management self-assessment activities;
- Establishing mechanisms to encourage PMA and subcontractor employee communication of ESH&Q related issues and for resolution of employee concerns;
- Ensuring that Line Management has the training and the information necessary to understand ESH&Q compliance issues;
- Ensuring ESH&Q performance is included in periodic performance reviews and annual appraisals of personnel; and
- Ensuring that facilities, equipment, procedures, and programs are maintained to provide continuing quality of ESH&Q controls.

6.4 LINE MANAGEMENT

Line Management (including the PM or designee, Departmental Managers, Functional Managers, Leads, Coordinators, Supervisors, Specialists, special projects project manager and construction engineers when assigned to special projects, and corresponding subcontractor positions) has a vital role in the safe execution of work within the ISMS framework. All personnel are held directly responsible and accountable for the safety and quality of their work, with Line Management having final responsibility and accountability for the achievement of safety and quality. Line Management works as a team to ensure compliance with requirements, allocation of resources, and integration of work execution and support. Line Management is responsible and accountable for:

- Embracing and championing the company safety and quality vision into the organizations they manage in order to empower themselves and workers to operate at the highest standards of performance and cultivate a safety conscious work environment (SCWE);
- Ensuring appropriate investigation of all accidents, illnesses, injuries, and near miss incidents;
- Understanding PMA ISMS and implementing the five Core Functions, seven Guiding Principles, and worker involvement within assigned areas of responsibility;
- Understanding and implementing the five VPP tenets to sustain “Star” status in recognition of exemplary ISMS implementation through workforce commitment and integration of safety into all operations;
- Understanding and promoting the principles of the EMS program as applied to their assigned areas of responsibility;
- Ensuring personnel in jobs with the potential to impact the environment are trained to identify activities with the potential for significant environmental impacts; to manage, control, and mitigate the impact of these activities; and to assess performance and implement corrective actions where needed;
- Requesting prompt medical attention for workers, preserving any evidence of an accident scene, and initiating appropriate corrective actions in response to ESH&Q related incidents;
- Ensuring that personnel assigned to his/her organization are instructed in and comply with ESH&Q requirements;
- Ensuring that personnel are informed of potential hazards (including environmental hazards) and the means to mitigate them through Hazard Review processes, Operating Experience/Lessons Learned (OELL), and necessary ESH&Q measures and precautions;
- Providing for worker participation in hazard analysis activities;
- Notifying Line Manager and ESH&Q of all accidents and incidents;
- Ensuring that necessary personal protective equipment (PPE) and clothing are provided, properly used, and maintained;

- Ensuring that employee ESH&Q concerns receive prompt attention and response;
- Ensuring that responses and input from workers are listened to, that follow ups are conducted, and responses (action or no-action) are communicated to employees in a timely manner;
- Ensuring workers with the best knowledge and experience of actual job-site conditions provide input on work packages (task plan, procedures, hazard analysis, work permits, equipment and materials, and the expected results at the end of the work);
- Ensuring that employees attend safety meetings;
- Holding periodic meetings with workers to stress the importance of ESH&Q;
- Instructing each employee to immediately notify applicable Line Management of any accident, illness, injury, or near miss incident;
- Ensuring that all workers for which they are responsible are qualified to perform their job functions prior to being assigned work;
- Communicating effectively with workers regarding information related to ESH&Q awareness in the workplace; and
- Designating individuals for participation in ESH&Q related activities such as inspections, safety committees, and investigations.

Before personnel changes and during succession planning, Line Management must make planned efforts to effectively identify and transfer worker critical knowledge to other personnel (new or existing) who will be assuming roles and responsibilities in accordance with PMA PI PM PRO 0001, *Personnel Knowledge Transfer*.

6.5 ESH&Q DEPARTMENT

The PMA ESH&Q Department provides direct support and oversight for PMA work activities. Key programs and processes include, but are not limited to: ISMS plan, QAP/QIP, CAS, VPP, ISMS and QA declaration, occupational safety, performance documents, environmental protection, sustainability, waste management, occupational medicine, OELL, issues management, QA, and training. Emergency management, fire protection, IH, radiation protection, and PPE (including respiratory) services are coordinated through the Safety and Health Function, but are government furnished services and items (GFS&I) provided through the D&D Contractor, FBP.

The ESH&Q Department plays a key role in the integration of ISMS. Responsibilities and accountabilities include:

- Maintaining the PMA ISMS Plan, including EMS and WSHP;
- Maintaining the PMA QAP/QIP and CAS;

- Evaluating feedback data to determine effectiveness of safety management programs and overall ISMS implementation and integration;
- Providing quarterly reviews of ISMS performance metrics;
- Planning and integrating ISMS improvements;
- Championing and mentoring managers and workers on safety and quality principles and practices to operate at the highest standards of performance;
- Advocating and mentoring the workforce in the five VPP tenets to sustain “Star” status through workforce commitment and exemplary performance of the ISMS;
- Providing trained and qualified ESH&Q professionals to support the contract’s Statement of Work;
- Maintaining performance documents, development/revision support, writing, validation support, review and approval, WEB access, configuration management, and history files;
- Screening OELL, distributing, development support, issuing; monitoring feedback, searching, and trending;
- Developing and implementing the PMA Oversight Plan to evaluate performance and continuous improvement;
- Developing and implementing incident, nonconformance, occurrence, and enforcement [Nuclear, Worker Safety and Health, and Security (NWS)] reporting processes;
- Screening assessment findings, observations, proficiencies and results of corrective actions for effectiveness, and to establish company-wide priorities;
- Developing measurable environmental and sustainability goals and objectives annually;
- Minimizing energy and water consumption, reducing or eliminating the generation of waste, the release of pollutants to the environment, and the use of Class I ozone-depleting substances (ODS) by advocating source reduction including: segregation and substitution, re-use, recycling and sustainable development, and procuring environmentally preferable products and services;
- Reviewing Request for Proposal (RFP) for subcontracts to ensure identification of applicable standards and flow down of requirements;
- Reviewing purchase requisitions for ESH&Q considerations by providing specifications, inspection requirements, alternatives, and recommendations for ensuring ISMS compliance;
- Assessing applicability of and interpreting regulations, standards, and DOE orders;

- Coordinating services with FBP for Site Emergency Plan (including Emergency Readiness Assurance Plan), Emergency Planning Hazard Surveys and Hazards Assessments, Site Continuity of Operations Plan, Emergency Response Organization, and Emergency Public Information (FBP provides as GFS&I);
- Coordinating services with FBP for Fire Protection Design and Engineering, Inspection and Test Services, Smoking Policy, Emergency Response, Mobile and Portable Extinguishing Equipment, and Fixed Detection and Suppression Systems (FBP provides as GFS&I);
- Coordinating services with FBP for Site Radiological Services (FBP provides as GFS&I);
- Coordinating services with FBP for Industrial Hygiene support and respiratory protection services (FBP provides as GFS&I);
- Conducting hazard analyses and recommending hazard controls;
- Conducting inspections and assessments; and
- Administering Commitment Tracking System (CTS) management for all DOE deliverables and assurance system activities (incidents, assessments, etc.) issues and corrective actions input, tracking, reporting, closure, and trending.

6.6 HR FUNCTION

The PMA HR Function is responsible for the performance of all HR functions necessary to maintain positive employee relations and a stable and productive workforce. HR is responsible and accountable for:

- Developing and implementing employee disciplinary policies;
- Maintaining “information” copies of employee medical records supplied by the medical provider in accordance with PMA EQ RM PRO 1402, *Maintaining Privacy Act Records*;
- Maintaining current job descriptions for each employee;
- Managing the performance evaluation process;
- Ensuring safety performance is included in the job description and performance evaluation for each employee;
- Ensuring that the job description and performance evaluations establish that Line Managers are responsible for safety; and
- Maintaining the Employee Concerns Program and facilitation of the DOE Differing Professional Opinion (DPO) program.

6.7 TRAINING PROGRAMS FUNCTION

The PMA Training Programs Function is responsible and accountable for:

- Coordinating with Line Managers the development of training plans for personnel;
- Developing and providing contract, regulatory, and standard driven training;
- Maintaining training records; and
- Notifying PMA personnel of upcoming training requirements.

6.8 FACILITY MANAGER

PMA's procedure, PMA FS FS PRO 4003, *Facility Management*, assigns the Facility Manager responsibility to review and authorize all work in PMA managed areas, regardless of the performer. To achieve this, the Facility Manager is assigned "landlord"-like authority, which is communicated to tenants and others through building postings and other methods as appropriate.

The Facility Manager is responsible and accountable for:

- Overseeing all facility operations and delegating, in writing, the succession to this responsibility during any absences.
- Reviewing proposed facility activities, including maintenance and tests for safety and regulatory compliance.
- Coordinating activities and requests with multiple occupants and ensuring requests are properly handled according to existing agreements with tenants and lessees.
- Conducting facility assessments to determine facility condition and identify maintenance repairs.

7 ISMS GUIDING PRINCIPLES

7.1 LINE MANAGEMENT RESPONSIBILITY FOR SAFETY

Line Management is responsible for the safe and efficient conduct of work to ensure protection of the public, the workers, and the environment. PMA Line Management includes the PM and DPM or designee, Departmental Managers, and Functional Managers, Leads, Coordinators, Supervisors, and Specialists, special projects project manager and construction engineers when assigned to special projects, and corresponding subcontractor positions. This ISMS plan clearly defines that Line Management is responsible and accountable for the safety of all activities performed within their departments, functions, and facilities. This concept is further enforced in procedures such as PMA PI WC PRO 3700, *Integrated Work Control*, PMA EQ SH PRO 1506, *Hazard Review*, and specific PMA safety and health programs and procedures. Each Line Manager's job description establishes responsibility and accountability for safety.

7.2 CLEAR ROLES AND RESPONSIBILITIES

Clear and unambiguous RRALs for ensuring safety are established and maintained at all organizational levels. The PMA Organizational Chart and RRAL Matrix depict these attributes for Line Management. Section 6 of this plan, “Rights, Roles, and Responsibilities,” lists the ISMS responsibilities of each organizational level from the worker to the PM. Additionally, employee job descriptions describe the roles and responsibilities of each position.

7.3 COMPETENCE COMMENSURATE WITH RESPONSIBILITY

Line Managers are responsible for ensuring that personnel possess the experience, knowledge, skills, and abilities necessary to discharge their responsibilities. Line Managers issue work restrictions in accordance with PMA EQ TR PRO 1806, *Work Restrictions*, for employees who have not completed or renewed required training or medical qualifications. Support organizations such as Training, ESH&Q, Security, IT/Telecommunications, and HR assist Line Managers in identifying the training requirements for a particular position.

Procedure PMA EQ TR PRG 1880, *Training Program*, defines the process for training and qualifying PMA personnel. Procedure PMA PI WC PRO 3700, *Integrated Work Control*, requires the assignment of qualified personnel to perform activities.

Selected personnel may be recognized as a Subject Matter Expert (SME) for a Subject Matter Area (SMA) or other assignment by their Line Manager, and listed on the SMA/SME/Standards Matrices (PMA EQ QM GUI 1342 and PMA EQ QM GUI 1343, respectively) maintained by Quality. An SME is defined as an employee who is knowledgeable about the professional standards, requirements, and practices used within the discipline he/she represents. The recognition of an SME is solely based on line manager discretion and recorded in accordance with PMA PI PM PRO 0000, *Control of Subject Matter Area Designations and Subject Matter Expert Assignments*. These lists facilitate the assignment and involvement of the proper personnel in work planning, execution, and follow-up needs. SMEs are points of contact (POCs) for monitoring standards, flow down of standards to performance documents, interpreting requirements, inter-departmental communications, answering questions, exchanging information, coordinating activities, reviewing documents, screening lessons learned, etc.

7.3.1 Training and Information - All Employees

Personnel qualifications and competencies are derived from regulatory requirements and the identified scope of work and associated hazards or potential hazards. The resulting requirements are communicated in the PMA training and qualification program described in PMA EQ TR PRG 1880, *Training Program*.

PMA training is based on both the DOE Systematic Approach to Training (SAT) as well as a graded approach to ensure that PMA employees and subcontractors are trained and qualified commensurate with their responsibilities. Line Management, with the assistance of the HR function, determines individual Position Descriptions (PDs), and with the assistance of the Training function, Training Position Descriptions (TPDs) for PMA and ISS contract named subcontractors responsible for managing, planning, performing, controlling, and overseeing work. PDs are administered by the HR function and include roles and responsibilities, education, experience, skills, and qualification (e.g., registration, certification, regulatory compliance) criteria,

and expected work locations (e.g., facility, other) and physical requirements (as applicable). TPDs are administered by the Training function and include company, function, position, and project and facility specific training requirements (i.e., training courses/modules, required reading) that achieve PD criteria. This ensures competency is maintained commensurate with the responsibilities and potential hazards of the assigned position. Training is documented and tracked in the Local Education Administrative Network (LEARN), the PMA Learning Management System training database. The database is used to track periodic re-training due dates. Training requirements must be fulfilled at or before the time of initial job assignment. Work restrictions are issued for delinquent training in accordance with the Work Restrictions Matrix maintained by the Training Function. Until the delinquent training requirements are satisfied, the employee is not authorized to perform duties associated with the delinquent training. Line Management has the responsibility of ensuring that employees attend training, maintain qualifications, and do not perform work unless trained and/or authorized.

TPDs are used to document the following for a specific job position or assignment:

- required company training,
- required facility specific training, and
- task/activity level training.

On a scheduled basis or when an employee changes jobs or the conditions of a job change, Line Management, with the assistance of the HR function, re-evaluates and modifies the PD, as necessary, and with the assistance of the Training function, the same is completed for the TPD.

In addition to formal training, information is communicated through pre-job briefings, All-Hands Safety Meetings, OELL, PMA newsletter (Pulse), and weekly safety bulletins (Headliners, Extra Mile, Safety At Home).

Subcontractors are responsible for ensuring that their employees meet all training requirements commensurate with the responsibilities and potential/hazards exposures of their positions. Subcontractor employee training is verified by Line Management through work control, or on larger scopes of work through readiness review.

Visitors and subcontractors, who are typically on site for short durations, are escorted while on site by a GET trained escort. Longer-term visitors/subcontractors obtain DOE security badges and site access authorization. The process is described in PMA EQ TR PRO 1800, *Site Access*. Additionally, on-site subcontractors work under work packages that describe safety requirements or receive a one-time contractor safety briefing to orient them to site hazards and PMA requirements, as appropriate.

7.3.2 Training – Employees with Special Responsibilities

Workers who have ESH&Q program responsibilities, such as members of the ESH&Q Department and Line Managers, receive additional ESH&Q training to maintain certifications, qualifications, and competency for their positions.

Workers whose jobs have the potential to affect significant environmental aspects receive additional training regarding the environmental protection functions related to their job.

7.4 BALANCED PRIORITIES

Resources are effectively allocated to address safety, programmatic, and operational considerations. Protecting the workers, the public, and the environment is a priority whenever activities are planned and performed.

PMA, through its employees, programs, and procedures, seeks to meet its mission and customer expectations while ensuring adequate protection of the worker, the public, and the environment; however, mission and customer expectations must yield if adequate safety cannot be achieved.

7.4.1 Baseline

PMA and DOE jointly use a risk-based prioritization method for determining the overall lifecycle sequence of work to be performed under the prime contract. Risk-based prioritization assists Line Management in balancing priorities and in allocating resources to risk reduction activities. Once the work definition is understood and the project data developed, it is then loaded into a performance management system and managed under configuration control.

The PMA Project Controls and Accounting and Contracts Functions ensure the following cost and performance controls are achieved: Work Breakdown Structure (WBS), scope definition, performance milestones, organizational breakdown structure, planning assumptions, cost estimate, budget, risk-based prioritization, critical path schedule, charge code structure, funds management, and baseline change control. These controls are integrated in the contract Performance Measurement Baseline (PMB) and serve as the Project Execution Plan.

As projects evolve and additional scope is defined or changes in conditions are identified, PMA will process, when appropriate, Baseline Change Proposals through the change control process for incorporation of scope, schedule, and budget. This process identifies project risk and documents, contract, and baseline change. Changes are reported through DOE/PPPO. Baseline change in excess of defined thresholds is further processed to the Headquarters level consistent with the requirements of DOE O 413.3B, Chg. 5, *Project Management for the Acquisition of Capital Assets*. Priorities, milestones, and assumptions are developed and agreed to by PMA and DOE, with input from regulators and stakeholders. The PMB is maintained under revision control via the PMA baseline change control process. This process is described in PMA PI PC PRO 3401, *Baseline Management and Change Control*.

7.4.2 Procurement

The PMA Business Management (Procurement) Function provides systems for acquiring the goods, services, and support needed to address a specific scope of work.

Procurement systems support ISMS functions for scope definition and implementation of controls to mitigate hazards. Procurement systems also support communication between PMA and its subcontractors. The primary means through which the procurement processes implement ISMS are:

- Maintenance of subcontract Terms and Conditions,
- Consultation with PMA SMEs for subcontract requirements,
- Preparation and/or organization of all exhibits in RFPs,

- Establishment of the evaluated supplier list (maintained by Quality),
- Evaluation and administration of subcontracts, and
- PMA Procurement System.

Procurement promotes the principles of EMS through implementation of PMA PI BM POL 3224, *Sustainable Environmental Business Practices*, which includes the Pollution Prevention (P2) process, recycling systems, the purchase of energy saving and energy compliant equipment, and the purchase of environmentally preferable products and post-consumer (recycled) material content products and promotion of DOE's sustainability goals and objectives.

7.4.3 Scheduling Work

Procedure PMA PI WC PRO 3700, *Integrated Work Control*, describes how work packages are prioritized in terms of safety or programmatic urgency. The hierarchy for scheduling is:

- safety,
- maintenance priority,
- regulatory requirements,
- availability of resources,
- requested due dates, and
- order of receipt.

7.5 IDENTIFICATION OF SAFETY STANDARDS AND REQUIREMENTS

At the contract level, PMA complies with the standards and requirements identified in Section J, Attachment J-1, "List A" (Applicable Laws and Regulations) and Section J, Attachment J-2 "List B" (Applicable DOE Directives) of the PMA prime contract with DOE. List A and List B consist of applicable laws, regulations, DOE Directives, and consensus standards. PMA must also comply with any compliance order issued by the Secretary of Energy issued under 10 CFR 851. Lists A and B are maintained current through PMA EQ QM GUI 1343, *Standards Management Responsibility Matrix by Department and Function*. The matrix identifies the SMEs assigned to the standards for monitoring changes and flow down to performance documents. The PMA Procurement Function subscribes to a service that monitors standards changes, and when identified conveys these changes to the assigned SME for action, as appropriate. The SME evaluates the applicability and impact and reports on actions and resources needed, and oversees the implementation of the new requirement.

Table 1 lists the regulations and standards that PMA is required to follow under 10 CFR 851, and their primary implementing mechanisms.

Table 1. Required Regulations and Standards for PMA

Regulation/Standard	Implemented Primarily By
(1) Title 10 CFR 850, "Chronic Beryllium Disease Prevention Program"	FBP-IH-PDD-00005, <i>Chronic Beryllium Disease Prevention Program</i>
(2) Title 29 CFR, Parts 1904.4 through 1904.11, 1904.29 through 1904.33; 1904.44, and 1904.46, "Recording and Reporting Occupational Injuries and Illnesses"	PMA EQ SH PRO 1520, <i>Accident/Incident Reporting and Recordkeeping</i>
(3) Title 29 CFR, Part 1910, "Occupational Safety and Health Standards," excluding 29 CFR 1910. 96, "Ionizing Radiation"	Various PMA procedures, worker safety training, task specific activity hazard assessment (AHAs), Pre-task Hazard Reviews (PTHR), and this ISMS Plan.
(4) Title 29 CFR, Part 1915, "Shipyard Employment"	Not applicable to PMA operations
(5) Title 29 CFR, Part 1917, "Marine Terminals"	Not applicable to PMA operations
(6) Title 29 CFR, Part 1918, "Safety and Health Regulations for Longshoring"	Not applicable to PMA operations
(7) Title 29 CFR, Part 1926, "Safety and Health Regulations for Construction"	PMAEQ SH PRG 1740, <i>Construction Safety Program and the Contractor Safety Handbook</i>
(8) Title 29 CFR, Part 1928, "Occupational Safety and Health Standards for Agriculture."	Not applicable to PMA operations
(9) American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values (TLV) for Chemical Substances and Physical Agents and Biological Exposure Indices" (2016) when the ACGIH TLV are lower (more protective) than permissible exposure limits in 29 CFR 1910. When the ACGIH TLVs are used as exposure limits, contractors must nonetheless comply with the other provisions of any applicable expanded health standard found in 29 CFR 1910	Industrial Hygiene services are furnished to PMA through the D&D contractor as a Government Furnished Service. PMA EQ SH PRO 1524, <i>Occupational Noise Exposure and Hearing Conservation Program</i>
(10) American National Standards Institute (ANSI) Z88.2, "American National Standard Practices for Respiratory Protection," (2015) see § 851.27 (b) (1)	PMA EQ SH PRO 1525, <i>Respiratory Protection Program</i>
(11) ANSI Z136.1, "American National Standard for Safe Use of Lasers," (2014) see § 851.27 (b) (2)	Not applicable to PMA operations
(12) ANSI Z49.1, "Safety in Welding, Cutting and Allied Processes," sections 4.3 and E4.3 (2012) see § 851.27 (b) (3)	FBP-FP-PRO-00072, <i>Welding and Burning and Hot work</i>
(13) National Fire Protection Association (NFPA) 70, "National Electrical Code," (2017) see § 851.27 (b) (4)	PMA EQ SH PRO 1505, <i>Electrical Safety Program (Rev.2)</i> PMA EQ SH PRO 1504, <i>Overhead Hazards</i>
(14) NFPA 70E, "Electrical Safety in the Workplace," (2018) for labeling. Most current version used for training.	PMA EQ SH PRO 1505, <i>Electrical Safety Program (Rev.2)</i> PMA EQ SH PRO 1504, <i>Overhead Hazards</i> PMA EQ SH PRO 1503, <i>Instructions for Lockout/Tagout</i>
(15) American Society of Mechanical Engineers (ASME) Boilers and Pressure Vessel Code, sections I through XII including applicable Code Cases (2015) See § 851.27 (b) (7)	PMA EQ SH PRG 1741, <i>Pressure Vessel Safety Program</i>
(16) ASME B31 (ASME Code for Pressure Piping) See § 851.27 (b) (8)	PMA EQ SH PRG 1741, <i>Pressure Vessel Safety Program</i>

Table 1. Required Regulations and Standards for PMA

Regulation/Standard	Implemented Primarily By
(17) DOE O 231.1B, Chg. 1. Environment, Safety, and Health Reporting, November 28, 2012 See § 851.27 (b) (9)	PMA EQ SH PRO 1520, <i>Accident Reporting and Recordkeeping</i> , CAIRS database, and PMA CTS
(18) DOE O 440.1B, Chg. 2. Worker Protection Program for DOE (Attachment 1.4) Explosives Safety, DOE-STD -1212, Explosives Safety	Not applicable to PMA operations

PMA performance documents (e.g., plans, programs, policies, procedures) also provide specific requirements for performing company-wide work safely. Performance documents are primarily maintained for ready access by users in an electronic database entitled PROC under strict configuration control in accordance with PMA EQ QM PRO 1221, *Performance Document Process*. Selected performance documents designated by Line Management owners for sharing with other PORTS contractors (i.e., D&D Contractor) are maintained in a companion database to PROC, entitled *Shared PROC*. These documents automatically populate the other contractor's performance document database for user's access, and are always the most up-to-date version. Controlled copies of documents that are not accessible through Shared PROC are made available through the controlled documents process (PMA EQ RM PRO 1403, *Controlled Documents*).

At the subcontract level, safety standards and requirements are provided to potential subcontractors through subcontract terms and conditions in the bidding stages of a subcontract. These standards consist of a set of flow-down requirements applicable to all subcontracts as well as specific standards and requirements based on the statement of work for the subcontract or activity. PMA PI WC PRO 3700, *Integrated Work Control*, facilitates the establishment of safety, operating, and interface expectations and requirements for subcontractors.

At the activity level, the Activity Hazard Assessment (AHA) and Pre-task Hazard Review (PTHR) communicate applicable safety hazards, controls, and requirements derived from the contract, company and/or subcontract level regulations, standards, and DOE orders.

When purchasing items, ESH&Q reviews each requisition in the Automated Maintenance Management System, SOMAX, to ensure that purchases:

- Meet applicable requirements/specifications;
- Are evaluated for opportunities to purchase sustainable and environmentally preferred items such as energy efficient, water efficient, or those containing recycled content;
- Apply the IH hierarchy of controls to eliminate hazards or substitute less hazardous materials;
- Identify quality level and specify inspection, certification, and documentation requirements for receipt of items;
- Screen against facility hazard inventory requirements; and
- Identify subcontractor safety assurance requirements.

7.6 HAZARD CONTROLS TAILORED TO WORK BEING PERFORMED

Controls to prevent and mitigate hazards are integrated and tailored to the work and associated hazards.

At the facility level, PMA applies PMA FS FS PRO 4003, *Facility Management*, to analyze facility specific hazards.

PMA EQ SH PRO 1506, *Hazard Review*, is the primary document that ensures hazard controls are tailored to the work. It is applied at the activity level, in conjunction with PMA EQ EN PRO 1002, *National Environmental Policy Act (NEPA) Implementation Procedure*, which evaluates environmental hazards and controls. PMA PI WC PRO 3700, *Integrated Work Control*, establishes the fundamental work control requirements at the company level for preventive and corrective maintenance and other work activities. Preventive maintenance is further addressed in PMA PI WC PRO 3701, *Preventive Maintenance*. Work Control requirements for work defined as a distinct project under the PMA contract are addressed in PMA FS FS PRO 4008, *Project Management*.

7.7 OPERATIONS AUTHORIZATION

At the contract level, operations are authorized by the DOE CO and CO Representative through approval of the PMA contract baseline and through contract extensions and modifications.

PMA Facility Support Services authorize operations in facilities through the Facility Manager. The Facility Manager oversees activities performed in facilities and ensures those activities are conducted in a safe manner and within the safety basis of the facility in accordance with PMA FS FS PRO 4003, *Facility Management*.

PMA authorizes fieldwork at the activity level through its work control procedure, PMA PI WC PRO 3700, *Integrated Work Control*, or through PMA FS FS PRO 4008, *Project Management*. These performance documents describe the process Line Managers must use to authorize work from establishing a statement of work, ensuring financial resources are available, assigning labor resources, performing pre-job walkdowns, analyzing hazards, establishing controls and briefing workers, to ultimately releasing the work package or providing authorization to proceed.

For work that is more complex, or involves construction or facility modifications, a readiness evaluation is conducted by the SRB as described in PMA EQ QM PRO 1216, *Senior Review Board*, and PMA EQ QM PRO 1212, *Readiness Reviews for Radiological, Non-Nuclear, and Other Industrial Facilities/Activities*. The process outlined in PMA EQ QM PRO 1212 verifies the completion of appropriate pre-job activities. The rigor of this review increases for activities that are more hazardous. Typical issues and questions addressed as part of a readiness evaluation are as follows:

- Is the task clearly defined?
- Have applicable OELL been identified and utilized to prevent recurrence of known incidents?
- Is the activity within the approved safety basis?

- Have all the hazards been identified and controls implemented?
- Are the appropriate work authorizations in place [environmental permits, state approval, work permits, NEPA, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), etc.]?
- Are the appropriate procedures in place?
- Are the proposed control measures adequate and appropriate?
- Does the work affect subcontractors, other prime contractors, or other site residents? If so, what measures have been taken to coordinate the work and limit the effect?
- Are all personnel trained and qualified?
- Are the necessary materials and equipment on site?
- Has all equipment been inspected (as required)?
- Do workers understand their Suspend/Stop Work authority?

PMA authorizes subcontractor work through various means. For subcontractors who were pre-selected in the contract proposal and those subcontractors whose contracts were assigned at contract transition, the terms and conditions are in place. A requisition, which includes a statement of work, is generated in SOMAX and approved by the applicable Line Manager. For services provided by other DOE prime contractors at the site, a Master Agreement for Services is in place. Individual work authorizations are developed by the PMA Procurement Function based on the statement of work provided by the requesting Line Manager. The service provider furnishes a quotation and other requested information. PMA PI WC PRO 3700, *Integrated Work Control*, facilitates the establishment of safety, operating and interface expectations and requirements for subcontractors. The work authorization is approved by the requesting Line Manager and PMA PM.

When a relationship does not exist with a potential subcontractor or for new work, PMA develops an RFP with input from affected organizations. The RFP includes ESH&Q requirements and flow-down requirements, such as specific procedures, and the ISMS Plan. The safety performances (OSHA statistics) of subcontractors are evaluated to select the best value subcontractors most closely meeting ISMS objectives. Once a subcontractor is selected, the subcontractor must successfully complete a readiness evaluation and receive authorization to proceed with the SRB as described in PMA EQ QM PRO 1212, *Readiness Reviews for Radiological, Non-Nuclear, and Other Industrial Facilities/Activities*.

7.8 WORKER INVOLVEMENT

Worker Involvement is not cited in DOE G 450.4-1C, *Integrated Safety Management Guide*, as a Principle, but is unofficially designated by PMA as an *honorary principle* due to the importance of worker involvement to effective hazard identification and control. At PMA, employee input and

feedback is strongly encouraged so safety and health deficiencies can be identified and corrected as they arise. Employees are involved in the safety program by participating on pre-job walkdowns, safety teams, and facility inspections.

7.8.1 Job Planning

Workers are included in the planning and analysis of work activities. The respective craft personnel are included in the pre-job walkdown and hazard evaluation. Craft personnel make recommendations on the most efficient and safest way to complete a project. If, during a job, it is recognized that a change is made in the equipment used, method of accomplishment, materials required, etc., workers must contact their Line Manager to re-evaluate the activity. In cases where an activity or process has imminent life-threatening implications, jeopardizes personnel or public safety, health, or the environment, or has significant technical or quality issues, workers are authorized to exercise Suspend/Stop Work Authority in accordance with PMA EQ SH PRO 1512, *Suspension/Stop Work*.

7.8.2 Employee Concerns

Employees are encouraged to report safety concerns directly to their Line Manager or to a member of ESH&Q. Employees may also report concerns through the PMA employee safety committee, the Worker Involvement Network (WIN). The WIN program provides a process by which employees, subcontractors, and visitors can submit suggestions, near misses, and concerns relating to safety, health, and environmental issues to PMA. The program is administered in accordance with procedure PMA EQ SH PRO 1519, *Safety Concerns/Worker Involvement Network*.

Another reporting avenue utilized by PMA is the nonconformance report process. The process is described in PMA EQ QM PRO 1205, *Control of Nonconforming Items and Services*. This process is used to identify adverse technical and/or quality conditions and/or potential concerns for evaluation when an item or service: fails to satisfy technical or quality requirements; has documentation deficiencies (i.e., missing, incomplete, illegible, or damaged documents; improper revisions; or documents having unauthorized changes) that do not support quality requirements; leads to a malfunction in equipment; and prevents a necessary verification activity

PMA also utilizes the incident report process. This process, described in PMA EQ QM PRO 1209, *Incident Reporting and Issues Management Program*, allows for quick, no-fault, reporting of events of ESH&Q, operational, or quality significance, such as injuries, near misses, potential violations, and quality issues. Incident reports regarding PMA operations can be initiated by any PMA or other contractor worker. As information is gathered on the event, Line Management and Quality personnel determine if the event requires further investigation, notification, additional reporting, or follow-up action. Occurrence and Enforcement NWS noncompliance(s) are reported in accordance with PMA EQ QM PRO 1206, *Occurrence Notification and Reporting*, and PMA EQ QM PRO 1214, *NWS Noncompliance Determination and Reporting*, respectively. The SRB-NWS Subcommittee meets as needed to review and approve NWS noncompliance(s) for entry in DOE Noncompliance Tracking System (NTS) or other applicable system. The subcommittee chair is generally the NWS Coordinator and members include Line Management and SMEs.

If the issue cannot be resolved through normal channels, the Differing Professional Opinion process or the DOE Employee Concerns Program may be utilized. All concerns are tracked through closure.

7.8.3 Worker Safety Committee

The WIN committee is PMA’s safety committee. The Committee is comprised of volunteers from both salary and bargaining unit personnel. Responsibilities include: advocate fellow employee’s concerns, participate in facility inspections, organize wellness events, and promote safety awareness. Committee members receive additional training in hazard recognition (OSHA 10 Hour), and are afforded the opportunity to attend safety conferences and seminars. The WIN committee meets monthly.

Safety issues/concerns may be submitted verbally or in writing. Issues are entered into a database and tracked through completion. Safety issues that cannot be resolved by the WIN committee are forwarded to management for resolution. Concerns, which are beyond the jurisdiction of the committee, are forwarded to the appropriate contractor or tenant for disposition.

PMA EQ SH CHA 1750, *WIN Committee Charter*, describes the committee purpose, responsibilities, and protocols.

8 CORE FUNCTIONS

8.1 DEFINE THE SCOPE OF WORK

The first step in the PMA ISMS process is defining the work scope, including translating the contract scope of work into a specific program baseline document, setting expectations, and prioritizing tasks and allocating resources. This core function is closely aligned with ISMS Principles 1-5, and PMA honorary 8; VPP tenets 1 and 3; and QA criteria 1, 2, and 4-10 (Table 2).

Table 2. ISMS Integration with VPP and QA	
ISMS Functions (F)	ISMS Principles (P) – P1 - Line Management Responsibility For Safety, P2 - Clear Roles and Responsibilities, P3 - Competence Commensurate With Responsibility, P4 - Balanced Priorities, P5 - Identification of Safety Standards and Requirements, P6 - Hazard Control Tailored to Work Being Performed, P7 - Operations Authorization, P8 (PMA Honorary) - Worker Involvement
	VPP Tenets (T) – T1 - Management Leadership, T2 - Employee Involvement, T3 - Worksite Analysis, T4 - Hazard Prevention and Control, T5 - Safety and Health Training
	QA Criteria (C) – C1 - Program, C2 - Personnel Training and Qualification, C3 - Quality Improvement, C4 - Documents and Records, C5 - Work Processes, C6 - Design, C7 - Procurement, C8 - Inspection and Acceptance Testing, C9 - Management Assessment, C10 - Independent Assessment
F1 – Define the Scope Of Work	ISMS P1 through P5, and PMA Honorary P8; VPP T1 and T3; QA C1, C2, and C4 through C10

Table 2. ISMS Integration with VPP and QA	
F2 – Analyze the Hazards	ISMS P4, P5, and P6, and PMA Honorary P8; VPP T3; QA C4 through C10
F3 – Develop and Implement Hazard Controls	ISMS P5 and P6, and PMA Honorary P8; VPP T4; QA C2, and C4 through C7
F4 – Perform Work Within Controls	ISMS P7; VPP T4; QA C4, C5, and C7 through C10
F5 – Provide Feedback and Improvement	ISMS P6, and PMA Honorary P8; VPP T1 and T2; QA C3 through C5, and C8 through C10

8.1.1 Translate the Contract Scope into Work

Within the baseline, work packages for operational and maintenance activities are further developed for field execution. These packages include more detail and serve as the basis for performance measurement development. SOMAX supplements the Project Management Cost Processor (PMCP) by providing integrated work planning, scheduling, and coordination capabilities for performance of project activities. These planning packages are utilized for the execution of preventive and corrective maintenance and other work. A detailed scope of work identifies the necessary resources required to execute the work.

Work scopes are entered into the work control system and managed in accordance with governing PMA or subcontractor procedures. The implementing organization is responsible for translating the scope of work into field activities.

8.1.2 Set Expectations

PMA’s approach to effective work control involves the establishment of performance metrics for all aspects of project performance. Multiple systems and processes are utilized to measure, control, and improve project performance. These include, but are not limited to, the ISMS, Oversight Plan, monthly Contract Performance [DOE QASP self-assessment, monthly progress report (MPR)], Quarterly Performance Analysis and Recurring Events, Customer Service Satisfaction Surveys, OELL, Cost Management and Reporting, Baseline Control, PMCP, PMA CTS, Occurrence Reporting and Processing System (ORPS), NTS, and SOMAX.

In addition, Quality Control Inspection and Testing Schedules are developed for significant subcontracted work (e.g., roadway paving, culvert repair) to ensure work is completed in accordance with the applicable requirements. The schedules describe what feature of work is covered by the inspection activity, what activity is conducted, how the activity is conducted, when and how often the activity is conducted, who conducts the activity, and how the activity is documented. The schedules hold subcontractors accountable and provide a roadmap to PMA Construction Engineers managing and overseeing work.

8.1.3 Prioritize Tasks

As stated in PMA PI WC PRO 3700, *Integrated Work Control*, work activities are prioritized in order of:

- Safety,
- maintenance priority,
- regulatory requirements,
- availability of resources,
- requested due dates, and
- order of receipt.

8.1.4 Allocate Resources

At the company level, resources are allocated to organizations based on the contract scope of work. Support and operations organizations have the needed resources to accomplish their respective responsibilities.

At the task level, PMA PI WC PRO 3700, *Integrated Work Control*, specifies that maintenance work is prioritized based on the availability of resources. The work package identifies the needed resources to complete a particular work package. These are communicated daily in planning meetings, and are shown on the Daily Communications and Teamwork Meeting Packet and Work schedule.

At the project level, PMA utilizes PMA FS FS PRO 4008, *Project Management*, to identify resources.

8.2 ANALYZE HAZARDS

The second step in the PMA ISMS process is to identify the hazards. PMA EQ SH PRO 1506, *Hazard Review*, identifies the process for analyzing hazards for both self-performed and subcontracted work at the activity level. Hazards are identified during the pre-job walkdowns and controls implemented prior to the task being performed. Pre-job briefings are conducted to communicate hazard assessment information. Worker involvement and review of OELs are crucial elements of assuring that hazards have been adequately analyzed. This core function is closely aligned with ISMS Principles 4, 5, and 6, and PMA honorary 8; VPP tenet 3; and QA criteria 4-10 (see Table 2).

Hazards for some activities are analyzed against specific technical procedures when warranted. For example, IH services that are furnished to PMA through the D&D contractor as GFS&I assess workplace exposures to chemical, physical, and biological hazards; PMA EQ SH PRO 1505, *Electrical Safety Program*, provides requirements and guidance for working on or near energized equipment; PMA EQ SH PRO 1507, *Fall Protection*, is used to analyze specific work situations involving elevated work; and PMA EQ EN PRO 1002, *NEPA Implementation Procedure*, is used to evaluate specific environmental hazards. Hazard analysis often requires the involvement of personnel with expertise in specific disciplines such as IH, health physics, or an Authority Having Jurisdiction (AHJ) for electrical safety. It is the Line Manager's responsibility to integrate these disciplines into the hazard review process.

Hazards are also identified through quarterly facility inspections. A team of hourly and salary personnel randomly select a facility and inspect it for safety hazards and/or maintenance items that could create an unsafe condition. Work orders are generated for those items easily abated.

Hazards requiring additional attention are entered into the work control process for resolution. Fixed hazards are documented on a facility hazard map and posted on the exterior of the facility to assist employees with hazard recognition. All hazards are recorded in the Hazard Tracking database and tracked through resolution.

At the subcontract level, safety standards and requirements are provided to potential subcontractors through subcontract terms and conditions in the bidding stages of a subcontract. These standards consist of a set of flow-down requirements applicable to all subcontracts as well as specific standards and requirements based on the statement of work for the subcontract or activity. PMA PI WC PRO 3700, *Integrated Work Control*, facilitates the establishment of safety, operating and interface expectations and requirements for subcontractors.

At the facility level, hazards are analyzed as described in PMA FS FS PRO 4003, *Facility Management*.

PMA FS FS PRO 4008, *Project Management*, requires that PMs include ISMS in planning and executing design and construction projects (including new facility construction and existing facility modifications).

8.3 DEVELOP AND IMPLEMENT HAZARD CONTROLS

The third step in the PMA ISMS process is to develop and implement hazard controls. After hazards are identified, necessary controls are implemented to protect workers, the public, and the environment from harm. PMA subdivides this process into four distinct steps: (1) identify the standards and requirements associated with the work to be performed, (2) determine options for hazard mitigation, (3) choose the best option for eliminating or mitigating the hazard, and (4) establish and implement selected controls. This core function is closely aligned with ISMS Principles 5 and 6, and PMA honorary 8; VPP tenet 4; and QA criteria 2, and 4-7 (see Table 2).

8.3.1 Identify Controls to Mitigate or Prevent Hazards

Work planning includes a systematic review of how the activity will be performed, which hazards are involved, and which controls are needed to eliminate or mitigate identified hazards. Controls to mitigate hazards are identified through safety basis documents, permits, regulatory requirements, procedures, and training. The types of controls used to mitigate or preclude all identified hazards are documented on the associated hazard analysis. All aspects of the proposed controls must be adequate to protect workers, other site personnel, the public, and the environment from the consequences of normal operations, accidents, or releases to the environment. Controls must be selected based on the following hierarchy:

- Elimination or substitution of the hazards, where feasible and appropriate;
- Engineering controls, where feasible and appropriate;
- Work practices and administrative controls that limit worker exposures; and
- PPE.

8.3.2 Establish Controls

Controls are established for both worker and facility safety and for protecting the public and the environment. Engineering controls are put in place when feasible to protect workers, the site, and

the adjacent environment. Administrative controls are tailored to the specific activity and task. Details are included in procedures and work process documentation.

At the activity level, controls are identified through a hazard evaluation as outlined in PMA EQ SH PRO 1506, *Hazard Review*. Based on this analysis, administrative, engineering, or process controls are implemented to mitigate each hazard identified. Activity sequences, prerequisites, and hold points are documented in the work package or project plan. If work conditions change, work is suspended or stopped, hazards are reviewed, and when needed, the existing ESH&Q controls are modified with Line Management concurrence. Controls are also established in the facility safety basis or other work-controlling documents to ensure that site personnel, the public, and the environment are protected from unacceptable ESH&Q consequences due to accidents.

8.4 PERFORM WORK WITHIN CONTROLS

The fourth step in the PMA ISMS process is to perform work within controls. The work control system, as described in PMA PI WC PRO 3700, *Integrated Work Control*, and PMA FS FS PRO 4008, *Project Management*, provides processes to convert the task level scope of work into a working level document that is easy for the workers to understand and use. The P&I Manager through the Work Control Manager is responsible for developing and maintaining the work control processes, which supports all five ISMS core functions. Working level documents that identify controls include work packages, project execution plans, PTHR, AHAs, and supplemental procedures, permits, or instructions, as appropriate. This core function is closely aligned with ISMS Principle 7, VPP tenet 4, and QA criteria 4, 5, and 7-10 (see Table 2).

During work activities, workers must perform the identified scope of work within the established controls. If conditions change, workers are instructed to suspend/stop work, contact their supervisor, and re-evaluate the activity. Changed conditions are situations in which:

- the work scope has been expanded,
- the method of accomplishment has been altered,
- an accident or incident has occurred,
- additional hazards have been encountered, or
- improvements to existing hazard controls have been identified.

The re-evaluation must be documented and have at least the same level of review and participation as the original review.

Subcontractors performing fieldwork must follow the work control system that implements the work control requirements contained in their subcontract.

8.5 FEEDBACK AND IMPROVEMENT

The fifth and last step in the PMA ISMS process is to provide feedback and improvement. PMA uses a variety of mechanisms to gather performance feedback and generate continuous improvement. These include morning briefings, post-job feedback forms on work packages, monthly safety meetings, SRB, nonconformance reports, assessments, and management meetings. In addition to these items, PMA utilizes employee surveys to collect feedback for future improvements. At the beginning of each calendar year, PMA distributes a safety survey to show

the effectiveness of the safety program and identify areas for improvement. Another tool used is the Customer Satisfaction Survey whereby feedback is solicited from counterparts in other companies as to their satisfaction with PMA services. This core function is closely aligned with ISMS Principles 6, and PMA honorary 8; VPP tenets 1 and 2; and QA criteria 3-5, and 8-10 (see Table 2).

8.5.1 Assessments

An assessment of ISMS is accomplished through an Integrated Oversight Program (IOP) that integrates the requirements of this ISMS Plan, QAP/QIP, and CAS to provide an overarching framework for ensuring compliance with contractual and regulatory requirements, while providing performance feedback for the continuous improvement of PMA and subcontracted work activities. The IOP applies a graded (risk based - probability and consequence) approach to oversight through three tiers of internal and external oversight activities. Stronger emphasis is placed on oversight activities (OAs) for facilities, processes, and products with regulatory drivers (environmental, etc.), and significant risks to worker safety and health.

OAs include walkdowns, inspections, surveillances, reviews, evaluations, and other types of OA, which generally evaluate processes, products, and facilities over varying time intervals. Collectively, these OAs are designated internal, external (including third party), graded, management conformity assessments (MCAs), and independent conformity assessments (ICAs). Graded assessments are generally OAs of limited extent, level or degree, rate activity (i.e., acceptable, other), and generally include walkthroughs, walkdowns, walkarounds, and inspections. Generally, MCAs have shorter time intervals from start to completion than ICAs. ICAs are generally overall programmatic reviews performed by qualified lead assessors. The degree of independence of the assessment team (free of direct responsibility in the area assessed and carried out without a vested interest in the result) is the primary differentiator from MCAs. Third party reviews, although commonly associated with ICAs, are performed by external organizations not associated with the DOE Field Unit or PMA, and may be performed as ICAs or MCAs.

The first (lowermost) tier of the IOP consists of department, function, and project OA conducted or led by Line Management, or by personnel on behalf of Line Management. The second tier consists of OA conducted or led by the Quality Function and other personnel not associated with the department, function, or project being assessed. The third tier consists of external OA conducted by organizations external to PMA [e.g., parent companies, DOE project and field office, Inspector General (IG), Government Accountability Office (GAO), Defense Nuclear Facilities Safety Board (DNFSB), state regulatory agencies, including those addressed in the QAP/QIP in accordance with contract clause E1, "Inspection of Services," and C.2.8 "Environmental, Safety, Health, and Quality Program"].

The IOP is used to evaluate the adequacy and effectiveness of management control systems. While retaining overall responsibility for the assessment process, the PM, DPM, and/or designee require Line Managers at all levels to assess the performance of the activities assigned to their Departments and Functions. Periodically, the PM, DPM, and/or designee reviews and evaluates data from external and internal sources, including knowledge based on their own experience, to identify problems that hinder the organization's ability to achieve its mission performance objectives. The schedule for proposed OA is published annually in the PMA Oversight Plan.

8.5.2 Issues Management

PMA issues are identified through external assessments, internal assessments, nonconformance reports, NWS noncompliance determinations, incident reports, occurrence reports, and trend analysis. Investigations of accidents, employee concerns, incidents, environmental releases or noncompliance(s), near misses, radiological events, and property damage may also result in issues being identified. Once identified, issues and corrective actions are tracked in the PMA CTS. When the issue is significant, a root cause is determined in accordance with PMA EQ QM PRO 1210, *Causal Analysis*. The PMA issues management process is defined in procedure PMA EQ QM PRO 1209, *Incident Reporting and Issues Management Program*.

8.5.3 Operating Experience/Lessons Learned

OELL from the DOE complex and other government or commercial operations are the key to reviewing site and complex-wide health and safety experience information. OELL provide a proactive approach to prevention of issues and continuous improvement opportunities. OELL are identified and communicated to all affected employees and organizations, and relative information is included in work packages. The OELL Program, as described in procedure PMA EQ QM PRO 1211, *Operating Experience/Lessons Learned Program*, is an integral part of the PMA ISMS. PMA has expanded the program to include relevant OELL in the monthly newsletter.

8.5.4 Trend Analysis

The ESH&Q Manager coordinates the annual development and quarterly reporting of ISMS Performance Metrics to PMA Line Management and DOE. PMA trend information includes, but is not limited to, ISMS, Monthly Contract Performance (QASP, MPR), Quarterly Performance Analysis and Recurring Events, Customer Service Satisfaction Surveys, OELL, Cost Management and Reporting, Baseline Control, PMCP, CTS, ORPS, SOMAX, and NTS reports. PMA uses this information to initiate program improvements and establish focus areas for ESH&Q evaluations.

9 EMS PROGRAM ELEMENTS

The purpose of this section is to describe the PMA EMS and to document the processes and systems developed to implement and deliver the environmental policy.

The EMS is an integral element of PMA ESH&Q management system. PMA EMS is integrated in each work activity through the ISMS. EMS oversight and assessment activities are implemented through PMA Oversight Plan. PMA assessment programs ensure that procedures/ processes for the protection of environmental resources have been implemented to address all major environmental laws, regulations, and DOE Orders, including DOE O 436.1, *Departmental Sustainability*.

The PMA EMS reflects the elements and framework found in the International Organization for Standardization (ISO) 14001 International Standard and is implemented through PMA EQ EN MAN 1056, *PMA Environmental Management System*. It includes policies, procedures, and training to identify operations and activities with environmental aspects and impacts; to manage,

control, and mitigate the impacts of these operations and activities; and to assess performance, implement corrective actions where needed, and ensure continual improvement.

The EMS is founded in the five core elements of the ISO 14001, which parallel the five core functions of the ISMS (Table 3). The major elements of an effective EMS include policy, planning, implementation and operation, checking and corrective action, and management reviews.

Table 3. Integration of the PMA EMS with ISMS		
	ISMS	EMS
Policy	Define Work	Policy
Plan	Analyze Hazards	Planning
	Identification of Safety Hazards and Requirements Analyze Hazards Safety Standards and Requirements Balanced Priorities Line Management Responsibility Clear Roles and Responsibilities	Environmental Aspects Determine Significant Aspects Compliance Obligations Measurable Environmental Objectives EM Programs
Do	Develop & Implement Hazard Controls/Perform Work	Implementation & Operation
	Hazard Controls Tailored to Work Perform Work Within Controls Clear Roles and Responsibilities Competence Commensurate with Responsibilities	Structure and Responsibility Training, Awareness and Competence Communication Document EMS Document Control Operational Control Emergency Preparedness and Response
Check	Provide Feedback & Continuous Improvement	Checking & Corrective Action
	Provide Feedback on Adequacy of Controls Continuous Improvement in Defining and Planning Work	Monitoring and Measurement Non-conformance Corr./Prev. Action Records EMS Audit Management Review Continuous Improvement
Act	Annual ISMS Review	Management Review
	Continuous Improvement	Continuous Improvement

Through implementation of the ISMS, effective protection of workers, the surrounding communities, and the environment can be achieved while meeting operating objectives to comply with compliance obligations.

9.1 GENERAL EMS REQUIREMENTS

The PMA EMS as described in PMA EQ EN MAN 1056, *Environmental Management System Manual* provides a comprehensive system for achieving and demonstrating sound environmental performance by controlling the impacts of activities, products, and services on the environment consistent with defined environmental policy and compliance obligations. PMA strives to cost effectively meet or exceed compliance with applicable environmental, public health, and sustainability requirements. These goals include environmental aspects, energy and water conservation, sustainability, and environmental objectives that are reviewed annually, updated as appropriate, and contribute to achieving DOE sustainability goals found in DOE Order 436.1, *Departmental Sustainability*. These objectives also reflect the requirements of Executive Order 13834, *Efficient Federal Operations*.

9.2 ENVIRONMENTAL POLICY

PMA is committed to achieving the highest standards of environmental quality in the performance of work, while providing a safe and healthful workplace for employees and subcontractors and documents this in *PMA EQ EN POL 1060, PMA Environmental Policy*. PMA senior management firmly believes in, and is dedicated to environmental protection, pollution prevention, and monitoring and improving environmental performance of PMA ISS activities. To minimize environmental impacts, PMA and its subcontractors will:

- Comply with all environmental regulations and incorporate sustainability, waste reduction, and pollution prevention into daily ISS operations at the lowest possible life-cycle cost.
- Evaluate operations and projects using up-front job hazard and risk analyses to consider the environmental impacts and sustainability of procurements, activities, and products at all life cycle stages – from acquisition to construction, use, and final disposition.
- Minimize waste generated through effective management, focusing on a waste management hierarchy of source reduction, reuse, and recycling.
- Involve workers in the development, training, and execution of environmental management programs and objectively and fully communicate sustainability and environmental information to DOE, employees, contractors and subcontractors, stakeholders, and the public.
- Conserve natural resources and energy usage by reusing and recycling materials where feasible and by purchasing and using environmentally preferable products, especially in electronics acquisition and management.
- Protect and conserve air, land, water, and cultural resources of the PORTS site and surrounding community while performing ISS operations and projects.
- Set environmental objectives and continuously improve EMS through annual evaluation and performance review.

The environmental policy is communicated to employees through various methods. The PMA PM reviews and communicates the commitments in the policy to PMA Line Management. The PMA PM assigns Line Managers with implementing the commitments through the line organizations. The policy is further disseminated to all employees through company-wide communications, EMS awareness training, and publications. The policy is posted in key buildings at PMA areas of operation. The procedures and processes for implementing the commitments in the environmental policy are described in PMA EQ EN MAN 1056, *PMA Environmental Management System*, as well as in the documents referenced herein. Conformance with the EMS is evaluated through the compliance monitoring and EMS assessments described in the PMA Oversight Plan. In addition, a formal audit is typically conducted every three years through DOE by a qualified party outside the control or scope of the EMS.

9.3 PLANNING

Section 8.2 of this plan discusses ISMS Core Function 2, Analyze Hazards. The process described in this section is also utilized to analyze environmental hazards (or aspects and impacts). PMA EQ EN PRO 1002, *NEPA Implementation Procedure*, and PMA EQ EN PRO 1001, *Environmental Management System Maintenance*, are the primary procedures that describe the process by which environmental aspects and impacts are identified and screened for significance. From this, environmental objectives are established to reduce the risk of significant environmental aspects.

9.3.1 Environmental Aspects

PMA evaluates its activities, products, and services to identify the environmental aspects that have the potential to affect the environment, the public, or result in a noncompliance with regulatory requirements. Work activities with environmental aspects are identified in the Environmental Aspects/Impacts and Environmental Objectives register, which is maintained by the PMA Environmental Manager, or designee. The Environmental Aspects/Impacts and Environmental Objectives register include matrices that correlate environmental aspects determined to be significant with work activities, specific hazards associated with each environmental aspect, and detailed information concerning PMA actions to reduce the potential to significantly impact the environment.

The information in the Environmental Aspects/Impacts and Environmental Objectives register is communicated to affected personnel through training developed for personnel whose actions could result in a significant environmental impact (see Sect. 7.3).

The Environmental Aspects/Impacts and Environmental Objectives register is updated annually to reflect changes in site operations and activities.

9.3.2 Compliance Obligations

PMA activities are subject to contract requirements, laws, regulations, and other requirements. Compliance Obligations are described in Sect. 7.5 of this plan. Implementing procedures for the EMS are listed in Sect. 9.4 of this plan.

9.3.3 Objectives and Programs

PMA establishes environmental objectives through PMA EQ EN PRO 1001, *Environmental Management System Maintenance*. Objectives are goals established to reduce risk to the environment (e.g., reduce air emissions). The PMA Environmental Manager working with the Line Managers, identifies objectives specific to their facilities and/or programs while considering the significant environmental aspects of work activities for their site area. A review is conducted on an annual basis and objectives are updated as appropriate.

The status of objectives is updated quarterly. When appropriate, objectives are modified to adjust to circumstances such as a modification in strategic direction, operation, or funding.

9.4 IMPLEMENTATION AND OPERATION

Sections 6, 7.1, 7.2, 7.3, 8.2, and 8.3 of this plan identify how the EMS is implemented and operated properly. These include PMA's organization, structure, key responsibilities, the training of personnel commensurate with their responsibilities, the development and implementation of controls, how PMA communicates relevant information to the workforce and the public, the PMA document control system, and emergency response processes. The following procedures are the key EMS implementing documents that define the day-to-day management aspects and requirements of the program:

- PMA EQ EN PRO 1000, *Identification of Environmental Requirements and Compliance Obligations*
- PMA EQ EN PRO 1001, *Environmental Management System Maintenance*
- PMA EQ EN PRO 1002, *NEPA Implementation Procedure*
- PMA EQ EN PRO 1003, *Management of Hazardous Waste in Satellite and 90-Day Accumulation Areas*
- PMA EQ EN PRO 1004, *Discharge of Accumulated Water*
- PMA EQ EN PRO 1005, *Compliance with NPDES*
- PMA EQ EN PRO 1006, *Clean Air Act (CAA) Compliance Program Description*
- PMA EQ EN PRO 1010, *Universal Waste*
- PMA EQ EN PRO 1011, *Management of Wastes*
- PMA EQ EN PRO 1013, *Waste Identification*

9.5 CHECKING

Section 9.5 of this plan describes the company processes to check or monitor performance, track and correct deficiencies, and take preventive actions for the EMS. Records are managed as required by PMA EQ RM PRO 1401, *Record Life Cycle and Retrieval*.

On behalf of DOE/PPPO, the D&D contractor implements a comprehensive environmental monitoring program to measure emissions and effluents, ambient air, surface and groundwater, drinking water, soils, and biota. The environmental monitoring programs include environmental data collection for routine compliance monitoring and environmental surveillance of PMA and D&D contractor activities. General categories of environmental monitoring performed include:

- Compliance Monitoring Programs – drinking water, ambient air, liquid effluent, and groundwater to comply with the Safe Drinking Water Act, Clean Water Act, and Clean Air Act (CAA), negotiated permits with the State of Ohio, and DOE O 436.1.
- Environmental Surveillance Programs – air, surface water runoff, soil, biota, and direct radiation to comply with DOE O 436.1.
- Operational monitoring – process air emissions monitoring and process liquid effluent monitoring.

In addition to the compliance monitoring performed by the D&D contractor, PMA controls and monitors emissions from air point sources, fugitive sources, and liquid effluent sources for which it is operationally responsible.

Monitoring results are recorded in the PORTS Annual Site Environmental Report generated by the D&D contractor with input from PMA. PMA also provides input into the reports on air emissions for PORTS.

PMA evaluates its environmental performance and the effectiveness of the EMS utilizing management assessments and self-assessments, oversight assessments, internal and external audits, an independent triennial external audit, and the management review process.

9.6 MANAGEMENT REVIEW

Top management reviews the EMS at least once a year to ensure its continuing suitability, adequacy, and effectiveness.

The Environmental Manager compiles information on the status of EMS goals and initiatives, programs, and relevant changes to applicable orders and presents the information to management for review. The SRB team consists of PMA top management and others as appropriate. The SRB makes recommendations, if needed, to ensure that the EMS achieves the desired level of environmental performance. The management assessment process documents the results of the review in the *SRB Subcommittee Review Approval*.

In addition to the annual EMS Management Review, PMA:

- Reports progress at PORTS Site Sustainability Team meetings.

- Reports progress quarterly in the Environmental Program Management Report and Performance Assurance Measures report.
- Distributes periodic management review information packages throughout the year via email to minimize the amount of material for management to evaluate at one time.

Records of management reviews are retained in PMA's records management system in accordance with PMA EQ RM PRO 1401, *Record Life Cycle and Retrieval*.

The areas for improvement identified during management reviews include any decisions and actions related to possible changes to environmental policy, objectives, and other elements of the EMS, consistent with the commitment to continual improvement.

10 WSHP ELEMENTS

10.1 MULTI-CONTRACTOR WORKSITE

Contractors, DOE, and other site tenants have established a shared site process to address activities and work that may affect one another. The shared site process establishes a formal notification and approval mechanism by which companies can notify others of work that may affect them. In addition, the ES&H site managers meet monthly to share information and discuss safety concerns.

Contractors and site tenants each utilize a facility management process to schedule and authorize work in their respective spaces. Under this system, work performed by another company is evaluated for impacts. At the same time, important information regarding the facility status, planned testing, outages, and other critical information is communicated to the guest company to ensure the safety of their personnel.

Each contractor and site tenant has an incident reporting and issues management program designed to identify, assign responsibility, and track to closure issues identified by the workforce. PMA utilizes PMA EQ QM PRO 1209, *Incident Reporting and Issues Management Program*, which allows for quick, no-fault reporting of events of ESH&Q, operational, or quality significance, such as injuries, near misses, potential violations, and quality issues. PMA and FBP reporting programs provide for informal reciprocal agreements to report issues verbally or by email to any POC for input into the other's program. In this manner, issues are resolved regardless of their source. Such agreements with other Contractors will be made as appropriate to the PMA scope of work. Relevant information is disseminated through daily safety meetings and incorporated in work packages. This sharing of information helps increase safety awareness and reduces the chances of reoccurrence.

10.2 QUALIFIED WORKER SAFETY AND HEALTH STAFF

PMA ESH&Q organization is staffed with qualified worker safety and health professionals. The contract statement of work was used to identify the staffing levels and qualifications to successfully support work activities. The staff includes professionals knowledgeable in relevant safety and health disciplines including IH, and Occupational Safety. Senior professionals

generally have advanced degrees and maintain professional certifications in their fields. PMA recognizes that on-going professional development is important to maintain competency and to keep abreast of changes in workplace safety and health standards and worker protection methods. Professionals stay informed on worker safety and health issues relevant to the DOE complex through attendance at customer sponsored workshops and membership in professional organizations. Professional development activities are funded in the ESH&Q organization budget.

10.3 RECORDKEEPING AND REPORTING

10.3.1 Records Management

The PMA Records Management Program establishes controls and protocols for the creation, identification, control, and management of classified and unclassified records. Program guidelines are provided in PMA EQ RM PRO 1401, *Record Life Cycle and Retrieval*.

10.3.2 Other Protected Information

Records that include Privacy Act information are managed in accordance with PMA EQ RM PRO 1402, *Maintaining Privacy Act Records*.

Records are generated relating to hazard inventories, hazard assessments, and personal exposure monitoring and controls. Table 4 lists the implementing procedures pertaining to these records and examples of the types of records generated. Each PMA performance document requires that records are managed according to PMA EQ RM PRO 1401, *Record Life Cycle and Retrieval*.

Table 4. Implementing Procedure and Program Types of Records	
Procedure	Examples of records generated
PMA EQ SH PRO 1525, <i>Respiratory Protection Program</i>	Exposure assessments
PMA EQ SH PRO 1507, <i>Fall Protection</i>	Fall Protection Plans, Fall Hazard Analysis
PMA EQ SH PRO 1511, <i>Confined Space Program</i>	Confined Space Entry Permits
PMA EQ SH PRO 1510, <i>Asbestos and Other Fibrous Materials</i>	Locations of asbestos in facilities
Industrial Hygiene services are furnished through the D&D contractor as GFS&I.	Personal exposure results
PMA EQ SH PRO 1506, <i>Hazard Review</i>	PTHR, AHA
PMAEQ SH PRO 1508, <i>Excavation/Penetration</i>	Excavation/Penetration Permits
PMAEQ SH PRO 1520, <i>Accident/Incident Reporting and Record Keeping</i>	Supervisor Incident Reports, OSHA 300 Logs, Accident Investigations, CAIRS reports
FBP-FP-PRO-00072-F01, <i>Welding/Burning/Hot Work</i>	Hotwork permits
PMA EQ SH PRO 1517, <i>Hazard Communication</i>	Safety Data Sheets, Chemical Inventories
PMA PI WC PRO 3700, <i>Integrated Work Control</i>	Work Packages

10.3.3 Reporting

Work-related injuries and illnesses of workers and subcontractors are investigated, recorded, and reported according to the requirements established in DOE O 231.1B, *Environment, Safety and Health Reporting*, and DOE Order 225.1B, *Accident Investigations*. PMA utilizes the Computerized Accident Incident Reporting System (CAIRS) database to collect and analyze injuries and illnesses. Summary reports are provided to DOE quarterly. These requirements are further detailed in PMA EQ SH PRO 1520, *Accident/Incident Reporting and Record Keeping*.

Procedure PMA EQ QM PRO 1206, *Occurrence Notification and Reporting*, describes the means and criteria to report certain types of accidents in the DOE ORPS (DOE O 232.2A, Chg. 1).

10.4 QA

PMA QAP/QIP [PMA (EQ QM PLA) PORTS 16-6077] and CAS [PMA (EQ QM PLA) 17-6106] provide the primary requirements for the integration of quality functions into all aspects of PMA activities. The QAP/QIP and CAS are fully integrated with this ISMS Plan as this ISMS Plan is with the QAP/QIP, and CAS. The alignment of the CAS criteria of DOE O 226.1B with this ISMS Plan, QAP/QIP, CAS, and DOE VPP tenets is shown in Appendix A of this plan.

10.5 CONDUCT OF OPERATIONS

The *Conduct of Operations* program ensures that facility operations are managed, organized, and conducted in a manner that assures an appropriate degree of rigor in performance and, therefore, contributes to safe and reliable operations. The program is based on DOE Order 422.1, Chg. 3, *Conduct of Operations*. The process for implementing *Conduct of Operations* at PMA is described in PMA PI WC PRO 3702, *Conduct of Operations for Projects, Facilities, and Activities*, and associated PMA PI WC GUI 3750, *Conduct of Operations Matrix*, and subject matter specific performance documents.

10.6 PROCEDURES

The PMA performance document process establishes requirements for performance documents (e.g., plans, programs, policies, procedures) used to establish company expectations, and control processes, activities, and operations.

Specific document types and the process for generating a new or revising a performance document are contained in PMA EQ QM PRO 1221, *Performance Document Process*.

10.7 OCCUPATIONAL AND ENVIRONMENTAL RADIATION PROTECTION

Radiation protection site services [including a documented and DOE approved Radiation Protection Program (RPP)/Environmental Radiation Protection Program (ERPP), dosimetry, reporting, work permits, work controls/monitoring, plans, and procedures] are furnished to PMA through the D&D contractor, with input to revisions provided by PMA. PMA is responsible for and provides GET and Radiation Worker training for all persons entering PORTS controlled areas. PMA works in a coordinated manner with the D&D contractor to ensure occupational and environmental radiation exposure remain as low as reasonably achievable (ALARA).

10.8 CONSTRUCTION SAFETY

Safety performance is evaluated to select the best contractor most closely meeting the ISMS objectives. Safety requirements are flowed down to potential subcontractors through the statement of work, terms and conditions, site-specific training and hazard analyses. Safety expectations are further emphasized during readiness reviews and the contractor safety briefings, which are provided prior to the start of work. PMA safety professionals provide project oversight.

Construction is defined as fabrication, demolition, and repair including modifications. The requirements for construction activities are outlined in PMA EQ SH PRG 1740, *Construction Safety Program*, and applicable subparts of 29 CFR 1926.

10.9 EMERGENCY MANAGEMENT AND FIRE PROTECTION

PMA EQ EM PRO 1100, *Emergency Management Program Description*, sets forth the roles and responsibilities of individuals and organizations in implementing the Emergency Management Program (EMP) within PMA. Site emergency services are provided by the D&D contractor through contractually established GFS&I agreements with DOE. PMA ESH&Q Department is responsible for coordinating with FBP to establish an EMP that works within the framework of the PORTS EMP, for participating in drills, and staffing the Emergency Operations Center Cadre.

The EMP directs response to emergency and off-normal conditions. It focuses on identifying hazards, planning for response to the hazards identified, communicating the appropriate response to the workforce, training individuals and organizations to mitigate the hazards, stabilize an emergency condition, and return the facility/activity to a safe condition. The EM hazards assessment process and consequence analyses are coordinated with the safety basis development process to assure an integrated and consistent approach.

PMA ESH&Q Department through the Safety and Health Function is responsible for coordinating with FBP to establish the Fire Protection Program consisting of policies, procedures, and personnel designed to minimize the potential for: (1) the occurrence of a fire or related event; (2) a fire that causes an unacceptable release of hazardous or radiological material that will threaten the health and safety of employees, the public, or the environment; (3) vital DOE programs being delayed as a result of fire and related hazards; and (4) excessive property losses resulting from fires and related events. FBP provides fire protection expertise for day-to-day activities including inspection of areas and equipment and the application of the NFPA, DOE, and OSHA rules. DOE, through a GFS&I agreement with the D&D contractor, provides the maintenance, testing, and inspection of the installed fire suppression systems in PMA managed areas.

10.10 FIREARMS SAFETY

Reserved - Not applicable to current PMA operations.

10.11 EXPLOSIVES SAFETY

Reserved - Not applicable to current PMA operations.

10.12 PRESSURE SAFETY

PMA oversees safety of pressure systems and equipment under PMA EQ SH PRG 1741, *Pressure Vessel Safety Program*. PMA does not design pressure vessels. All new pressure vessels shall be designed, installed, tested, inspected, and operated in accordance with applicable codes and sound engineering principles by qualified and trained personnel. Non-code pressure vessels that do not need to be stamped, shall conform with the ASME code to the maximum extent possible. For non-code vessels, the Pressure Safety AHJ shall review and approve the specifications and drawings prior to acquisition. Compliance with pressure safety requirements for PMA maintained systems is evaluated annually through PMA's Oversight Plan.

10.13 ELECTRICAL SAFETY

The electrical safety program applies to all PMA and subcontractor operations. It is intended to provide a consistent approach to safe electrical work. The program applies to work on or near energized electrical equipment or systems operating at 50 volts or more. Implementing procedures for the electrical safety program are: PMA EQ SH PRO 1505 (Rev.2), *Electrical Safety Program*; PMA EQ SH PRO 1503, *Instructions for Lockout/Tagout*, and PMA EQ SH PRO 1504, *Overhead Hazards*.

PMA has appointed an AHJ for electrical safety. The AHJ provides electrical program oversight, reviews work packages, recommends work practices, and provides code interpretation as it applies to PMA electrical safety.

Labeling requirements for arc flash and shock hazards are conducted in accordance with NFPA 70E "Electrical Safety in the Workplace" (2018). The most current version of NFPA 70 E is used for employee training.

10.14 INDUSTRIAL HYGIENE

IH services are furnished to PMA through the D&D contractor as GFS&I.

10.15 OCCUPATIONAL MEDICINE

PMA EQ SH PRG 1722, *Occupational Medicine Program*, establishes qualifications for medical providers, recordkeeping, and describes provider/company interfaces designed to foster a proactive medical and wellness program. The purpose of this program is to ensure that employees are physically and psychologically capable of performing assigned work duties and are protected from hazards that may result in adverse health effects. This program provides comprehensive occupational health services for all PMA employees. Occupational Medical services are obtained through a service agreement. Responsibilities include:

- Fitness for duty (including general health, physical, and psychological capacity to perform work);
- Exposure monitoring;
- Worker medical qualification;

- Wellness screenings;
- Random drug testing;
- Diagnostic, urgent, emergency, and follow-on care for workplace injuries and illnesses; and
- Termination examinations.

10.16 BIOLOGICAL SAFETY

Reserved - Not applicable to current PMA operations.

10.17 MOTOR VEHICLE SAFETY

PMA EQ SH PRO 1501, *Motor Vehicle Safety and Management Program*, is designed to control the risks associated with the operation of motor vehicles and to protect the safety of all drivers and passengers in government, company-owned, or leased motor vehicles including utility-type vehicles such as golf carts, gators, or mules during the performance of work.

Specialized equipment, such as powered industrial trucks, is addressed in separate procedures or through manufacturer's recommendations.

11 DEFINITIONS

Line Management/Line Manager — Line management includes the Office of the Project Manager, Department, and Function levels of management: Project Manager; Deputy Project Manager; Department Managers; Functional Managers, Leads, Coordinators and Supervisors; and corresponding contract named subcontractor positions. Line Manager denotes the applicable manager in a work organization.

Performance Documents Nomenclature — performance documents (e.g., plans, policies, procedures) numbers include identifiers for *company, department, function, type, and unique number sequence*. *Departments* include: Environmental, Safety, Health, and Quality (EQ), Facility Support Services (FS, has no functions), Information Technology (IT, including Telecommunications and Cyber), Performance and Integration (PI), and Safeguards and Security (SS). *Functions* include, but are not limited to: Accounting (AC), Business Management (BM), Cyber Security (CS), Emergency Management (EM), Environmental (EN), Human Resources (HR), Information Security (IS), Personnel Security (PE), Physical Security (PH), Procurement (PR), Project Controls (PC), Project Management (PM), Property and Fleet (PF), Quality Management (QM), Records Management (RM), Safety and Health (SH), Security Program Management (PG), Training (TR), Work Control (WC). *Types* include: Charter (CHA), Directive (DIR), Form (FOR), Guide (GUI), Manual (MAN), Plan (PLA), Policy (POL), Procedure (PRO), Program (PRG). *Number sequences* are specific to Departments and Functions.

Subcontractors (all-inclusive including subcontractors and their subcontractors, and vendors) — A subcontractor is a firm that has sole contractual responsibility for execution of defined work related to an activity or project, and for compliance with all safety, health, and environmental

codes, standards, and regulations. A vendor is a subcontractor that sells a commercially available product or service that may include installation, warranty service, trouble-shooting, repair, stocking, and re-stocking. ESH&Q requirements will differ depending on the scope of work and whether on-site or off-site work is performed.

APPENDIX A

CONTRACTOR ASSURANCE SYSTEM (CAS) CROSSWALK WITH THE CAS [PMA (EQ QM PLA) PORTS 17-6106, SECT. 1-9] QAP/QIP [PMA (EQ QM PLA) PORTS 16-6077, SECT. 1-10], ISMS PLAN [PMA (EQ SH PLA) PORTS-0055, THIS DOCUMENT, SECT. 1-10], AND VPP TENETS

CAS Crosswalk Matrix							
PMA CAS, QAP/QIP, ISMS Plan, and VPP Tenets	DOE 226.1B, Implementation of Department of Energy Oversight Policy (i.e., CAS), Contractors Requirements Document, Requirements/Mechanisms (X is primary location in PMA documents)						
	Assignment of Management Responsibilities and Accountabilities - evidence work is being performed safely, securely, and in compliance with requirements - risks identified and managed - systems of control are effective and efficient	Validating the Effectiveness of Processes (e.g. audits, reviews, assessments, certification)	Self-assessment and Feedback and Improvement Activities - risk-informed - documented	Issues Management System - documented and readily available - program and performance deficiencies - timely reporting - compensatory corrective actions - categorize significance - higher significance (causal factors, corrective actions address cause(s), effectiveness review, documentation, communication for informed decisions)	Communication to the Contracting Officer (as requested, e.g. corrective action plans)	Continuous Feedback and Improvement - worker feedback mechanisms - work planning and hazard identification - lessons learned	Metrics and Targets to Assess Effectiveness
PMA (EQ QM PLA) PORTS 17-6106, Contractor Assurance System (CAS)							
1. Introduction	X						
2. Purpose	X						
3. Scope	X						
4. Maintenance and Implementation	X						
5. Assignment of Management Responsibilities, Accountabilities and Communications to the Contracting Officer, Other DOE Personnel, and PORTS Contractors Customers	X				X	X	
6. Validating the Effectiveness of Processes and Self-Assessment Activities		X	X (Self-Assessment)	X		X	X
7. Issues Management System		X		X			
8. Continuous Feedback and Improvement			X			X	
9. Metrics and Targets to Assess Effectiveness		X		X			X
PMA (EQ QM PLA) PORTS 16-6077, Quality Assurance Plan/Quality Implementation Plan (QAP/QIP; Sects. 1-10)							
1. Program	X	X	X	X	X	X	X
2. Personnel Training and Qualification	X	X	X			X	X
3. Quality Improvement	X	X	X	X	X	X	X
4. Documents and Records	X		X		X	X	
5. Work Processes	X	X	X	X	X	X	X
6. Design	X	X	X			X	
7. Procurement	X	X	X			X	
8. Inspection and Acceptance Testing	X	X	X	X		X	

CAS Crosswalk Matrix							
PMA CAS, QAP/QIP, ISMS Plan, and VPP Tenets	DOE 226.1B, Implementation of Department of Energy Oversight Policy (i.e., CAS), Contractors Requirements Document, Requirements/Mechanisms (X is primary location in PMA documents)						
	Assignment of Management Responsibilities and Accountabilities - evidence work is being performed safely, securely, and in compliance with requirements - risks identified and managed - systems of control are effective and efficient	Validating the Effectiveness of Processes (e.g. audits, reviews, assessments, certification)	Self-assessment and Feedback and Improvement Activities - risk-informed - documented	Issues Management System - documented and readily available - program and performance deficiencies - timely reporting - compensatory corrective actions - categorize significance - higher significance (causal factors, corrective actions address cause(s), effectiveness review, documentation, communication for informed decisions)	Communication to the Contracting Officer (as requested, e.g. corrective action plans)	Continuous Feedback and Improvement - worker feedback mechanisms - work planning and hazard identification - lessons learned	Metrics and Targets to Assess Effectiveness
9. Management Assessment	X	X	X	X	X	X	X
10. Independent Assessment	X	X	X	X	X	X	
PMA (EQ SH PLA) PORTS-0055, Integrated Safety Management System (ISMS) Plan (This Document; Sects. 1-10)							
1. Scope	X						
2. Introduction	X		X				X
3. ISMS Goals, Objectives, and Performance Indicators	X	X			X	X	X
4. PMA Commitment To Integrated Safety Management	X				X	X	
5. Four Levels of ISMS Implementation	X					X	
6. Rights, Roles, and Responsibilities	X	X	X	X	X	X	X
7. ISMS Guiding Principles	X		X	X	X	X	
8. Core Functions	X	X	X	X		X	X
9. Environmental Management System (EMS) Program Elements	X	X	X	X	X	X	X
10. Worker Safety and Health (WSHP) Program Elements	X	X	X	X		X	X
Voluntary Protection Program (VPP) Tenets							
1. Management Leadership	X	X	X		X	X	X
2. Employee Involvement		X	X	X		X	X
3. Worksite Analysis		X	X	X		X	X
4. Hazard Prevention and Control		X	X	X		X	
5. Safety and Health Training	X					X	