

		PMA PI WC PRO 3701		Rev. 1		Preventive Maintenance	
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Use and Application Understandings							
<i>A QA record is a completed document that furnishes evidence of the quality of items and/or activities affecting quality. Only records generated from work activities important to nuclear safety will be maintained as NQA-1-2008 QA Records.</i>							
<i>Records generated or received in the use of performance documents must be submitted to PMA Records Management Document Control for record retention and disposition according to Records Life Cycle and Retrieval. For detailed instruction on receipt and transfer of records to RMDC, see PMA EQ RM PRO 1406, Record Transfer. PMA employees and contractors must not conceal or destroy any information, including non-compliance or potential non-compliance records. (Reference 18U.S.C. 2071, "Concealment removal or mutilation generally")</i>							
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<i>Document Review and Authorization Authenticated By E-Mail (On File)</i>							
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PURPOSE

This procedure provides the methods to identify and manage preventive maintenance for facilities, systems, and equipment applicable to the Portsmouth Mission Alliance, LLC (PMA) Infrastructure Support Services (ISS) contract. This procedure is performed in conjunction with PMA PI WC PRO 3700, *Integrated Work Control*.

SCOPE

This procedure applies to PMA employees and their subcontractors at the Portsmouth Gaseous Diffusion Plant (PORTS).

This procedure applies to installed and non-installed equipment, located at the PORTS site that is applicable to the PMA contract.

This procedure does **not** apply to "project" work, which is performed according to PMA FS FS PRO 4008, *Project Management*, and PMA FS FS POL 4120, *Project Management Overview*.

Vendors, as used in this procedure, is an all-inclusive term including vendors and all subcontractors (see Acronyms/Definitions section). Vendors, subcontractors and all support subcontractors work shall be in accordance with this procedure, with the following exceptions: This procedure does not apply to vendors under shipping and receiving direction, e.g., United Parcel Post (UPS), and FedEx. This procedure does not apply to vendors performing general office work, which is addressed under the general provisions of the PMA ISMS Plan as stipulated in Procurement/Contract documents (e.g. subcontract, purchase requisition).

OTHER DOCUMENTS NEEDED

- PMA EQ RM PRO 1401, *Record Life Cycle and Retrieval*
- PMA EQ EN PRO 1003, *Management of Hazardous Waste in Satellite and 90-Day Accumulation Areas*
- PMA EQ QM PRO 1205, *Control of Non-conforming Items and Services*
- PMA EQ QM PRO 1207, *Control and Calibration of Measuring and Test Equipment*
- PMA EQ QM PRO 1208, *Inspection and Test Control*
- PMA EQ QM PRO 1209, *Incident Reporting and Issues Management Program*
- PMA EQ QM PRO 1211, *Operating Experience/Lessons Learned Program*
- PMA EQ QM PRO 1213, *Design*
- PMA EQ QM PRO 1215, *Graded Approach*
- PMA EQ QM PRO 1217, *Identification, Control and Disposition of Suspect/Counterfeit Items*
- PMA EQ SH PRO 1503, *Instructions for Lockout/Tagout*
- PMA EQ SH PRO 1506, *Hazard Review*
- PMA EQ SH PRO 1507, *Fall Protection*
- PMA EQ SH PRO 1508, *Excavation/Penetration Permit*
- PMA EQ SH PRO 1509, *Hoisting and Rigging*
- PMA EQ SH PRO 1510, *Asbestos and Other Fibrous Materials*

- PMA EQ SH PRO 1511, *Confined Space Program*
- PMA EQ EN PRO 1011, *Management of Wastes*
- PMA PI WC PRO 3700, *Integrated Work Control*
- PMA PI WC PRO 3702, *Conduct of Operations for Projects, Facilities, and Activities*
- PMA PI WC GUI 3750, *Conduct of Operations Matrix*
- PMA FS FS PRO 4005, *Configuration Control*
- PMA EQ SH PRO 1523, *Skill-of- the-Craft Application*
- PMA PI PM POL 0060, *Discipline and Rigor of Operations*
- PMA EQ SH POL 1723, *Fire Protection Program Application*
- PMA PI WC GUI 3751, *Work Category Planning Guide*
- PMA EQ SH FOR 1621, *Pre-Task Hazard Review*
- PMA EQ SH FOR 1649, *Vendor Checklist*
- PMA FS FS FOR 4026, *Pre-Job Briefing Form*
- PMA PI WC FOR 3730, *Preventive Maintenance Request Form*
- PMA PI WC FOR 4065, *Annual PM Task Review and Approval Form*
- PMA PI WC FOR 3736, *Walk-down Checklist*

WHAT TO DO

A. Roles and Responsibilities

Key personnel ensure work is identified, scheduled, controlled, completed and performance attained in a safe and quality manner in accordance with contract requirements (i.e. Quality Assurance Surveillance Plan [QASP] and other requirements) as follows:

Facility Manager/
Planner/Facility
Support Services
Manager/Work
Control Manager/
Supervisor

1) Personnel responsible for performing this procedure:

- ◆ Facility Manager(s)
- ◆ Planner(s)
- ◆ Facility Support Service Manager
- ◆ Work Control Manager
- ◆ Supervisor(s) (Line Manager)

B. Preventive Maintenance Identification

1) Preventive Maintenance (PM) is the activity performed to maintain facilities, systems, and equipment within designed operating conditions or to extend equipment life. Effective PMs are critical to ensuring reliable equipment operation. However, not all equipment requires PM. As such, the goal is to implement the correct PM, at the correct periodicity, on the correct equipment.

2) To determine a PM task, the approach to be utilized includes:

- ◆ Any associated commitments and/or administrative requirements (e.g., safety, quality, performance), such as:
 - Contract requirements

- DOE commitments
- Code requirements
- Occupational Safety and Health Association (OSHA) requirements
- Quality requirements
- Equipment history, including failure trends
- Vendor manual and/or Manufacturer recommendations
- Functional check(s)

- 3) Determine if a PM task is required based on any requirements or commitments.
- 4) If determined that a PM is required, then initiate a PM Request (see Section C.1).

C. Process

All Employees

1) Preventive Maintenance Request/Revision (PMR)

- 1.1. Any employee may initiate a PMR (*Preventive Maintenance Request/Revision*); however, the applicable Facility Manager will perform a technical review and the PMR will go through an approval process.
- 1.2. Use PMA PI WC PRO 3730, *Preventive Maintenance Request/Revision*, form to perform the following:
 - Add new PM tasks
 - Revise an existing PM task
 - Cancellation of a PM task
- 1.3. Initiate PMR by performing the following:
 - Enter name, initials, date in Review and Approval block
 - Enter all known data in appropriate section (*Initiation, Revision/ Cancellation*) of the PMR form.
 - Provide a basis (e.g., safety, quality, performance) for the PM task initiation, revision/cancellation on the PMR form. Include sufficient detail to aid review and approval.

Facility Manager

- 1.4. Forward the PMR to the Facility Manager.
- 1.5. The Facility Manager shall perform a technical review of the PMR to include the following:
 - Ensure the information provided by the initiator is accurate and complete, revise if necessary.

- Provide justification (e.g., safety, quality, performance) for recommendation approval or disapproval of PM task. Reasons to consider:
 - ◆ Manufacturer or vendor recommendations
 - ◆ Plant commitments
 - ◆ Environmental
 - ◆ Plant experience
 - ◆ Usage
 - ◆ Cost effectiveness of performing PM versus “Run to Failure”

- 1.5.1 Determine PM task frequency using all information gathered. Enter frequency on PMR form.
- 1.5.2 Determine PM task grace period. Enter grace period on PMR form (*grace period is typically 25% of the PM task frequency per industry standards*).
- 1.5.3 Determine and document other PM tasks that should be performed in conjunction with this PM task.
- 1.5.4 Determine if the work order “work complete date” is acceptable to use as date to cycle PM. Enter on the PMR form. If “work complete date” is not acceptable, record what date/method shall be used to cycle the PM task.
- 1.5.5 Enter name, initials, and date in Review and Approval block of PMR form.
- 1.5.6 Forward PMR form to Facility Support Services (FSS) Manager.

FSS Manager

- 1.6. The FSS Manager shall review PMR and if acceptable (e.g., safety, quality, performance) enter name, initials, and date in the Review and Approval block of the PMR form. Forward to the Work Control Manager.
- 1.7. If the FSS Manager finds the PMR to be unacceptable, note reason(s) and return to the applicable Facility Manager. The Facility Manager shall work with the FSS Manager to resolve any issues.

Work Control Manager

- 1.8. Once the PMR form has been approved by the FSS Manager, the Work Control Manager shall review the PMR form. If acceptable (e.g., safety, quality, performance), enter name, initials, and date in the Review and Approval block of the PMR form.

- 1.9. If the Work Control Manager finds the PMR to be unacceptable, note reason(s) and return to the applicable Facility Manager. The Facility Manager shall work with the Work Control Manager to resolve any issues.
- 1.10. Once PMR is approved, assign Planner to implement the approved PMR (*Initiate, Revise/Cancel*). Forward the PMR form to the assigned planner.

D. Preventive Maintenance Implementation

- Planner
- 1) The planner shall review (e.g., safety, quality, performance) and implement the PMR into SOMAX.
 - 1.1 If the PMR is a request to add a PM task perform the following:
 - Develop the task in SOMAX by inputting all applicable data from the PMR form.
 - Develop appropriate work documents and hazard analysis, and obtain approvals per the work control process, "Integrated Work Control" procedure, PMA PI WC PRO 3700, *Integrated work Control*.
 - If the same piece of equipment has different tasks with different frequencies, then develop and set-up multiple PM tasks. See the Work Control Manager with any questions.
 - 1.2 If the PMR is a request to revise a PM task in SOMAX, then perform the following:
 - Determine if the proposed revision will be an Intent or Non-Intent change. See Integrated Work Control procedure PMA PI WC PRO 3700 for these criteria.
 - If necessary, revise the appropriate task in SOMAX by referencing all applicable data from the PMR form.
 - If necessary, revise appropriate work documents and hazard analysis, and obtain approvals per the work control process, PMA PI WC PRO 3700, *Integrated Work Control*.
 - 1.3 If the PMR is a cancellation of an approved PM task, then perform the following:
 - Determine appropriate task in SOMAX per the PMR form.
 - Cancel the appropriate task in SOMAX per the PMR form.
 - Ensure that a reason is entered into SOMAX referencing the PM.

2) The planner shall submit the completed PMR form to Records Management Document Control (RMDC), while ensuring the following information is entered into the Completion Section of PMR form:

- Enter applicable SOMAX Master ID.
- Enter applicable equipment ID.
- Ensure PMA PI WC FOR 4065, *Annual PM Task Review and Approval form* has been submitted for proper approvals, as applicable.
- Sign completed PMR form.

E. Grace Period, Delinquent and Deferred Preventive Maintenance

1) PM Tasks in the Grace Period

Planner

1.1 All PM tasks have a scheduled due date. This allows a time frame for the PM to be reviewed and placed properly on the work schedule.

1.2 There are occasions where a PM may need to go past its scheduled due date and enter into its grace period. Reasons for a PM to go past the due date into grace period include, but are not limited to:

- Equipment availability
- Parts/materials availability
- Resources
- Equipment is out of service
- Corrective Maintenance on the equipment

1.3 Verbal approval must be attained from the Facility Support Service Manager for a PM to go into grace period.

1.4 Grace period for a PM is typically 25% of the PM Task frequency (*some code required equipment may have no grace period and are therefore delinquent after their due date*).

1.5 The PM entering grace period shall be a priority on the work schedule to be completed.

NOTE: Delinquent and Deferred preventive maintenance tasks, in the nuclear industry, are typically only associated with safety significant components and configured components/system/equipment. PMA's contract does not contain any PM tasks associated with safety significant components (SSCs) or configured process components/equipment. However, PMA Work Control will specifically integrate this method to enhance the overall rigor of the PM Program.

2) Delinquent PM Tasks

- 2.1 A PM becomes delinquent when it goes past midnight of its final day in grace period.
- 2.2 If a PM is not going to be performed within the grace period, contact the applicable Facility Manager to explain why.
- 2.3 Only the applicable Facility Manager can approve a new deferral date (go to Section 3, *PM Deferral*).
- 2.4 If there is no new deferral date approval from the Facility Manager, then tag the equipment "inoperable" until the preventive maintenance task is complete.

3) Preventive Maintenance Deferrals

- 3.1 A PM deferral is to allow extension of the delinquent date of the associated PM task. Reasons a new delinquent date may be needed include, but are not limited to the following:
 - Waiting on vendor support
 - Waiting on parts/materials
 - Waiting on corrective maintenance
 - Waiting on specific inside or outside temperature
- 3.2 Contact the applicable Facility Manager to request a new deferral date (*Only the applicable Facility Manager can approve a new deferral date*).
- 3.3 The Facility Manager's approval and new date shall be written on the front page of the specific work order for record. The Facility Manager shall initial and date the change and communication with the Work Control Manager.
- 3.4 If the Facility Manager does not approve a new delinquent date, then tag the equipment "inoperable" until the preventive maintenance task is complete.

RECORDS

Records generated or received must be submitted to PMA RMDC for records retention and disposition according to PMA EQ RM PRO 1401, *Record Life Cycle and Retrieval*. PMA employees and contractors must not conceal or destroy any federal records, including non-compliance or potential non-compliance records. (Reference: 18 U.S.C 2071, *Concealment, removal or mutilation generally*.)

SOURCE DOCUMENTS

- DE-EM0004062 *PMA Contract*
- PMA (EQ SH PLA) PORTS-0055, *Integrated Safety Management*

**DEFINITIONS/
ACRONYMS**

System Plan (Including Environmental Management Systems and Worker Safety and Health Protection Program)

- DOE O 422.1, *Conduct of Operations Requirements for DOE Facilities*
- PMA (EQ QM PLA) PORTS-6077, *Quality Assurance Program Plan/Quality Implementation Plan for the Infrastructure Support Services Contract Portsmouth Gaseous Diffusion Plant, Piketon Ohio*
- 10 CFR 851, *Worker Safety and Health Program*

Activity Hazard Analysis (AHA) — A document that lists the sequential steps, hazards, and controls associated with a given task.

AQL — Acceptable Quality Level, A statistical measurement of the maximum number of defective goods considered acceptable in a particular sample size. If the acceptable quality level (AQL) is not reached for a particular sampling of goods, manufacturers will review the various parameters in the production process to determine the areas causing the defects.

CAD — Computer Aided Drafting

Change Control — A formal process used to ensure that changes to a product or system are introduced and documented in a controlled and coordinated manner.

Changing Condition—A situation in which (1) the work scope has been expanded, (2) the method of accomplishment has been altered, (3) an accident or incident has occurred, (4) additional hazards have been encountered, or (5) improvements to existing hazard controls have been identified.

Configuration Control — Technical and administrative direction and surveillance to: (1) identify and document the functional and physical characteristics of a configuration item; (2) control changes to those characteristics; and (3) record and report changes to processing and implementation status.

Craft —Any qualified union personnel.

Deferral — The process of establishing a new delinquent date for a PM that must be approved by the Facility Manager.

Delinquent — *The time after the final day of the approved grace period for a PM. The PM must be deferred or tagged inoperable.*

Discipline and Rigor of Operations — Methods to carry out work in a formal and systematic approach designed to reduce the probability of errors that embodies a commitment both to safety and excellence in operations and to continuous performance improvement [e.g., roles, responsibilities, and accountabilities; planning; communications; training, conduct of work; adherence to procedures and other work documents; change control (documents, drawings, sketches, etc.), oversight, records, feedback].

DOE — U.S. Department of Energy

ESH&Q — Environmental, Safety, Health and Quality

FSS — Facility Support Services

Grace Period— is the time frame between the scheduled date and the delinquent date of a PM. Verbal approval must be obtained from the FSS Manager for a PM to enter a Grace Period.

ISMS — Integrated Safety Management System

ISS — Infrastructure Support Services

Item Status Identification Controls — Items, services and processes requiring examination are clearly marked or tagged to ensure that only those with acceptable test and inspection results are used. Failed or untested items are segregated and/or tagged to preclude their use or the bypassing of required tests.

Line Management/Line Manager — Any manager or supervisor. PMA line managers include all levels of management: Project manager; deputy project manager; department managers; functional managers, leads, coordinators, supervisors, and specialists, and special projects project managers and construction engineers when assigned to specific projects; and subcontractor managers/ supervisors. Line manager denotes the applicable manager in a work organization.

Measuring & Test Equipment (M&TE) — Equipment, devices and systems used for essential measurement related, but not limited to, operational safety requirements; ES&H management evaluations; security, safety and environmental permits; accountability of materials; conformance to customer requirements; monitoring of processes; tests and inspections; and research and development. M&TE typically includes instruments, tools, gauges, reference and transfer standards and nondestructive examination equipment. Calibration requirements are applied to stand-alone instruments and devices, instruments and devices installed within processes or equipment, and permanently installed instrumentation and/or components that perform essential measurements.

Non-routine Work — Maintenance and limited scope non-maintenance activities that are non-repetitive in nature. (Level 2)

NTP — Notice to Proceed

POC — Point of Contact

PMA — Portsmouth Mission Alliance

PORTS — Portsmouth Gaseous Diffusion Plant

Pre-Task Hazard Review (PTHR) — A document that defines the hazards associated with a given task. PTHR's often supplement AHAs.

Preventive Maintenance (PM) — Repetitive work activities periodic inspection, adjusting, minor repair, lubricating, reporting, and data recording necessary to maintain facilities, equipment and utility systems in satisfactory operating condition, and minimize breakdown.

PMR — Preventive Maintenance Request/ Revision

Procedure — Documented, fixed, step by step sequence of activities or course of action to be followed to provide for consistent completion of a task in the desired manner.

QA — Quality Assurance

QASP — DOE Quality Assurance Surveillance Plan for the Infrastructure Support Services Contract at the Formerly Operating Portsmouth Gaseous Diffusion Plant, Piketon, Ohio. QASP Appendix A, Performance Requirements Summary (PRS), identifies nineteen (19) contract line item numbers, exhibit line item numbers, and functional areas (i.e., elements) in the Performance Work Statement (PWS), and an estimated hundred and ninety-five (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.

SSC — Safety Significant Components

SDS — Safety Data Sheet(s)

SOMAX — A computerized maintenance, inventory, and purchasing management information system that is used to track requested and completed work activities at the Portsmouth Gaseous Diffusion Plant.

SOW — Scope of Work or Statement of Work

Subcontractor — 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. This includes any subcontractor(s) that are utilized by prime subcontractor for work scope performed.

Suspect/Counterfeit Items and Defective Items (S/CI-DI) — Suspect: Items are items of questionable manufacture and/or origin (i.e., known to have been previously counterfeited, or having sufficient physical attributes to raise questions as to its acceptability). These include mechanical components (e.g., fasteners, bolts, studs, fittings, valves, flanges, and couplings), and electrical /electronic components (e.g., semiconductors and circuit breakers). Counterfeit: Items are items made of inferior materials and/or that are incorrectly processed, and intentionally marked or labeled to indicate that they comply with appropriate design/technical criteria. Defective: Items are items that have a flaw due to an unintentional error in the manufacturing process.

Test/Inspection Criteria — Applicable codes, regulations, industry standards, specifications, tests, inspections, acceptance methods, criteria for acceptance or rejection of items or service, traceability, special procedures or instructions, required submittals, and any other requirements referenced in the design documents. The testing/inspection process verifies that specified items, services, or processes meet or exceed specified requirements. Administrative controls, including the use of status indicators, are used to preclude inadvertent bypassing of required tests or inspections and inadvertent operation of nonconforming or indeterminate items or processes.

U.S. DOE — United States Department of Energy

Vendor (all-inclusive including Vendors, Subcontractors and any of their subcontractors) — 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.

Work Control — The process by which FSS work is identified, initiated, planned, approved, scheduled, coordinated, performed, and reviewed for adequacy and completeness.



Work Control Documents — Work packages, permits, activity hazard analysis, and procedures. Documents that provide guidelines for performing work and are under configuration control. Procedures may supplement routine and non-routine work packages, if those procedures are required for hands-on usage.



Attachment A

PMA PI WC FOR 3730

Preventive Maintenance Request / Revision

Page 1 of 1

Preventive Maintenance Request/Revision/Deferral

Request Information:

Work Order Number:

PM Frequency:

Equipment Number:

Equipment Description:

Location:

Last Completion Date:

Due Date:

Scheduled Start Date:

Deliquent Date:

Task Description (new PM,revise, cancel or deferral):

Technical Evaluation:

Technical Justifications:

PM Sourcing:

Compensory Actions Required:

Acceptable Completion (Date):

Approval Section

Requestor:

Badge No.

Date:

Facility Manager Signature:

Badge No.

Date:

Facility Support Services Manager Signature:

Badge No.

Date:

Work Control Signature:

Badge No.

Date:

Completion Section

SOMAX PM Master ID:

SOMAX Equipment ID:

Annual PM Task Review and Approval Submitted (Circle One):

YES / NO / NA

Request Completed By:

Date

