NAVAL REACTORS DOE ORDER IMPLEMENTATION BULLETIN NUMBER 433.1-126, REVISION 0

Consistent with the Naval Nuclear Propulsion Program (NNPP) overall concept of operations, the following provides specific implementation guidance for DOE Order 433.1B, MAINTENANCE MANAGEMENT PROGRAM FOR DOE NUCLEAR FACILITIES for those activities under the Director's cognizance. The following guidance takes precedence over DOE Order 433.1 (series) and related guidance found in other DOE documents.

a. In paragraph 3.c(1), the Order recognizes that, consistent with the responsibilities and authorities assigned by Executive Order 12344 (statutorily codified at 50 USC 2406 and 2511) and to ensure consistency throughout the joint Navy/DOE organization of the NNPP, the Director, Naval Nuclear Propulsion Program (Director) will implement and oversee all necessary requirements and practices pertaining to this DOE Order for activities under the Director's cognizance.

b. In paragraph 3.a, the Order specifies that it is applicable to DOE Hazard Category 1, 2, and 3 nuclear facilities per DOE Technical Standard (DOE-STD) 1027, HAZARD CATEGORIZATION AND ACCIDENT ANALYSIS TECHNIQUES FOR COMPLIANCE WITH DOE ORDER 5480.23, NUCLEAR SAFETY ANALYSIS REPORTS. DOE-STD 1027 recognizes that it is necessary to avoid placing excessive requirements on operations co-located with nuclear facilities. As such the requirements contained herein pertain to portions of Naval Reactors DOE sites that meet the Hazard Category 1, 2, or 3 criteria. This includes, but may not be limited to, the S8G Prototype and MARF Prototype at Kesselring Site Operation (KSO), the Expended Core Facility (ECF) and Spent Fuel Packaging Facility at the Naval Reactors Facility (NRF), and portions of the Knolls Atomic Power Laboratory and Bettis Atomic Power Laboratory.

c. In paragraph 4.a, the Order specifies that all hazard 1, 2, or 3 nuclear facilities must conduct maintenance of structures, systems, and components (SSCs) that are part of the safety basis in compliance with an approved nuclear maintenance management program (NMMP). Requirements exist at all NNPP DOE facilities for maintenance and modification to safety-related SSCs. For Naval Reactors Prototypes, these requirements include, but are not limited to, applicable reactor plant manuals, propulsion plant manuals, steam and electric plant manuals, support systems

manuals, the KSO Non-Power Plant Systems Manual, component technical manuals, and the Prototype General Reactor Plant Overhaul and Repair Specification (NAVSEA 0989-049-6000). For Naval Reactors Facility, these requirements include, but are not limited to, the Manual for Control of Refueling, Reactor Installation, Maintenance and Refueling System Specification (RIM-63), Naval Nuclear Quality Assurance Manual for Shipyards and the Naval Reactors Facility (QCM), Nuclear Reactor Servicing Manuals (NRSMs), Equipment Technical Manuals (ETMs), Naval Reactors Facility Procedure 1008.12 (NRF Preventive Maintenance Program), and Naval Reactors Facility Procedure 1663.48 (NRF Essential Support Systems Requirements). For fuel labs at the Atomic Power Laboratories, nuclear safety is maintained through strict controls on the quantity of fissile material on site. Training and operations of laboratory facilities are conducted per LAB-NCS-1000 and KAPL-A-NMP-1, respectively. Radiological release is mitigated via the applicable radiological controls requirements (e.g., LAB-RC-0288). Additional requirements applicable to all Program sites are discussed in Naval Reactors DOE Order Implementation Bulletin 420.1B-81, which implements the requirements of DOE Order 420.1, FACILITY SAFETY. Existing equivalent requirements represent an effective and time-proven NMMP for NNPP facilities and shall continue to be implemented in lieu of the specific requirements of DOE Order 433.1.

d. In paragraph 4.b, the Order states that NMMPs for Government-owned, Contractor-operated (GOCO) facilities must demonstrate compliance with the requirements contained in the associated Contractor Requirements Document and must be approved by the Field Office Manager. As discussed above, existing equivalent maintenance requirements represent the NMMP for NNPP facilities. As such, the specific provisions of the Contractor Requirements Document do not specifically apply. Naval Reactors' alignment with these practices is discussed below. NRHQ is the approval authority for most of the maintenance requirements listed.

e. In paragraph 4.c, the Order states that changes to NMMPs must be reviewed under the unreviewed safety question (USQ) process to ensure SSCs are maintained and operated within the approved safety basis. Changes to most maintenance requirements

for SSCs at NNPP facilities are controlled by the Uniform Technical Requirements System.

f. In paragraph 4.d, the Order states that assessments of NMMP implementation must be conducted at least every three years or less frequent if directed by the Secretarial Officer to evaluate whether all requirements are appropriately implemented. Naval Reactors Headquarters will assess maintenance of SSCs at NNPP facilities during biennial evaluations or more frequently, as required. Naval Reactors Field Office personnel will perform routine monitoring and surveillance of SSC maintenance consistent with current monitor watch requirements.

g. In paragraph 4.e, the Order states that periodic self assessments must be conducted to evaluate the effectiveness of oversight of NMMPs. Self assessments for NNPP facilities will continue to be conducted per current Naval Reactors requirements. PC-SA-1 (Self-Assessment and Continuous Improvement Guidelines for Naval Reactors Prime Contractor Sites) contains applicable Prime Contractor self-assessment requirements. The QCM contains requirements for self-assessment of naval nuclear work.

h. Paragraph 5 of the Order delineates responsibilities for implementation of the Order. Naval Reactors Headquarters is responsible for ensuring appropriate maintenance requirements are invoked for facilities, activities, and programs under the Director's cognizance. Current roles and responsibilities of Naval Reactors Headquarters, Naval Reactors Field Offices, and Prime Contractor organizations remain unchanged.

i. Section 2 of Attachment 2 to the Order provides the specific applicable contractor requirements. As discussed above, existing equivalent NNPP practices shall continue to be implemented in lieu of the specific requirements of DOE Order 433.1. The following list shows how NNPP requirements relate to the specific requirements of the Order.

Attachment 2 Section 2 Attribute	**Naval Reactors Practices**
Integration with Regulations and DOE Orders/Manuals	Overall: Implementation bulletins will be generated for other DOE Directives applicable to the NNPP.

Maintenance Organization Administration	Overall: Naval Reactors invokes requirements for the organizational structure of groups responsible for maintenance and operation of our nuclear facilities (e.g., Naval Reactors Procedure F-10), approves the assignment of personnel to key organizational positions, and approves the budget and overall manpower ceilings.
Master Equipment List	Prototypes: Safety-related SSCs are defined in NAVSEA 0989-049-6000 (Prototype General Overhaul and Repair Specification) and NAVSEA 0989-054-5000 (S8G Prototype Support Systems Manual). NRF and KSO Refueling: NRSMs and ETMs list the Government Furnished Equipment (GFE). These manuals treat all GFE the same, not distinguishing those that are part of the safety basis; however, much GFE includes features that are important to safety. Reactor Servicing Safety Reports (RSSRs) list GFE and Shipyard Furnished Equipment (SFE) and facility systems that are important to preventing criticality and release of fission products from spent fuel. NRF 1663.48 lists NRF SFE and facility systems that are important to mitigating releases of radioactive materials. Laboratories: Nuclear safety is maintained through strict controls on the quantity of fissile material on site. Radiological release is mitigated via the applicable radiological controls requirements (e.g., LAB-RC-0288), which include requirements for equipment used for monitoring and control of radiation and radioactivity.

Planning, Scheduling, and Coordination of Maintenance	Prototypes: Planning, scheduling, and coordination of maintenance is performed in accordance with applicable Reactor Plant Manuals and technical manuals; NAVSEAINST 9210.30 (Procedures for Administration of Nuclear Reactor Plant Preventive Maintenance and Tender Nuclear Support Facilities Preventive Maintenance on Ships); and Naval Reactors Procedures F-10, F-7, and F-4. NRF and KSO Refueling: Planning, scheduling, and coordination of maintenance are performed in accordance with the MCR for GFE and Naval Reactors Facility Procedure 1008.12 (NRF Preventive Maintenance Program) and Naval Reactors Facility Procedure 1663.48 (NRF Essential Support Systems Requirements) for SFE and facility systems. Bettis, KAPL, BPMI, NRF, and KSO assign cognizant engineers for each piece of equipment or system. Laboratories: Nuclear safety is maintained through strict controls on the quantity of fissile material on site. Radiological release is mitigated via the applicable radiological controls requirements (e.g., LAB-RC-0288), which include requirements for equipment used for monitoring and control of radiation and radioactivity.

Types of Maintenance	Prototypes: Types of maintenance (e.g., preventive, corrective, in-service inspection, pre-overhaul testing) are described in the aforementioned manuals. NRF and KSO Refueling: For GFE, the MCR, NRSMs, and ETMs cover preventive and corrective maintenance and the Trouble Record process documents and adjudicates equipment problems during usage. Requirements for rigging are included in the Lifting Standard. Laboratories: Nuclear safety is maintained through strict controls on the quantity of fissile material on site. Radiological release is mitigated via the applicable radiological controls requirements (e.g., LAB-RC-0288), which include requirements for equipment used for monitoring and control of radiation and radioactivity.
Maintenance Procedures	Prototypes: The process for developing maintenance procedures is discussed in COMFLTFORCOMINST 4790.3 REVB (Joint Fleet Maintenance Manual), applicable quality assurance manuals, and local instructions. Specific maintenance procedures are also included in applicable Reactor Plant Manuals and technical manuals. NAVSEA 0989-049-6000 (Prototype General Overhaul and Repair Specification) contains requirements related to alterations, repairs, drawing control, and configuration management for Naval Reactors Prototypes. NRF and KSO Refueling: QCM, NRSMs, and ETMs cover maintenance procedures. Laboratories: Nuclear safety is maintained through strict controls on the quantity of fissile material on site. Radiological release is mitigated via the applicable radiological controls requirements (e.g., LAB-RC-0288), which include requirements for equipment used for monitoring and control of radiation and radioactivity.

Training and Qualification	Prototypes: Training and qualification for personnel involved in maintenance is included in local instructions. The Naval Nuclear Propulsion Program Prototype Training Manual, Naval Reactors Procedure F-10, and the Manual for Control of Testing and Plant Conditions contain overarching training and qualification requirements for personnel involved in operating and maintaining Program prototype facilities. NRF and KSO Refueling: The QCM covers personnel training for performance of maintenance. Laboratories: Nuclear safety is maintained through controls on the quantity of fissile material. Personnel are trained and qualified on the use of special nuclear material accountability systems per LAB-NCS-1000. Applicable radiological controls manuals (e.g., LAB-RC-0288) include requirements for monitoring and control equipment.
Configuration Management	Prototypes: Configuration is maintained via NAVSEA 0989-049-6000 (Prototype General Overhaul and Repair Specification) and applicable drawings. NRF and KSO Refueling: RIM-63 covers configuration management for GFE. Requirements for rigging are included in the Lifting Standard. Laboratories: Nuclear safety is maintained through controls on the quantity of fissile material. Special nuclear material accountability systems control the location and configuration of fissile material. Radiological controls requirements (e.g., LAB-RC-0288) include requirements for equipment used for monitoring and control of radiation and radioactivity.

Procurement	Prototypes: Procurement of parts for maintenance is discussed in NAVSEA 0989-049-6000 (Prototype General Overhaul and Repair Specification) and other applicable instructions. NRF and KSO Refueling: BPMI operating procedures cover procurement management for GFE. The QCM covers procurement management for SFE and facility systems. Laboratories: BMPC procedures cover procurement management for Naval Reactors Laboratories.
Maintenance Tool and Equipment Control	Prototypes: Maintenance tool control, including nuclear test equipment control and calibration is covered via applicable metrology and calibration (METCAL) programs, COMFLTFORCOMINST 4790.3 REVB (Joint Fleet Maintenance Manual), and local instructions. NRF and KSO Refueling: The QCM covers maintenance tool and equipment control. Laboratories: Nuclear safety is maintained through strict controls on the quantity of fissile material on site. Radiological controls manuals (e.g., LAB-RC-0288) include requirements for equipment used for monitoring and control of radiation and radioactivity.
Suspect and Counterfeit Items	Prototypes: The pedigree of spare parts is discussed in NAVSEA 0989-049-6000 (Prototype General Overhaul and Repair Specification) and other applicable instructions, including NAVSEA S9213-45-MAN-000/(N) (Naval Nuclear Material Management Manual). NRF and KSO Refueling: BPMI procurement procedures and Enterprise Business System cover GFE. The QCM covers SFE and facility systems. Laboratories: BMPC procedures address suspect and counterfeit items.

Maintenance History	Prototypes: Maintenance history is documented in accordance with NAVSEAINST 9210.37 (Procedures for Administration of Naval Reactor Plant Material History) and other applicable instructions. NRF and KSO Refueling: The MCR and QCM cover maintenance history. Laboratories: Nuclear safety is maintained through strict controls on the quantity of fissile material on site. Radiological controls manuals (e.g., LAB-RC-0288) include requirements for equipment used for monitoring and control of radiation and radioactivity.
Aging, Degradation, and Technical Obsolescence	Prototypes: This is addressed via the maintenance, material control, material procurement, and in-service inspection requirements contained in the aforementioned manuals. NRF and KSO Refueling: MCR checkout requirements cover aging, degradation, and technical obsolescence for GFE. Requirements for rigging are included in the Lifting Standard. Laboratories: Nuclear safety is maintained through strict controls on the quantity of fissile material on site. Radiological controls manuals (e.g., LAB-RC-0288) include requirements for equipment used for monitoring and control of radiation and radioactivity.

Seasonal Facility Preservation	Prototypes: This is addressed via the preventive maintenance requirements for specific systems and components contained in applicable reactor plant, support system, and technical manuals. NRF and KSO Refueling: The MCR covers equipment preservation for GFE. Requirements for rigging are included in the Lifting Standard. Laboratories: Nuclear safety is maintained through strict controls on the quantity of fissile material on site. Radiological controls manuals (e.g., LAB-RC-0288) include requirements for equipment used for monitoring and control of radiation and radioactivity.
Performance Measures	Prototypes: Deficiencies are tracked via Equipment Status Logs per Naval Reactors Procedure F-10 and other applicable instructions. NRF and KSO Refueling: MCR, NRSMs, and ETMs specify performance measures for GFE and the Trouble Record policy provides feedback. Requirements for rigging are included in the Lifting Standard. Laboratories: Nuclear safety is maintained through controls on the quantity of fissile material. Limits on the type and amount of material are invoked.

Facility Condition Inspection	Prototypes: Inspections and surveillances are conducted per Naval Reactors Procedure F-10 and other applicable instructions. NRF and KSO Refueling: Inspections are covered by the MCR checkout requirements for GFE. Requirements for rigging are included in the Lifting Standard. Laboratories: Nuclear safety is maintained through strict controls on the quantity of fissile material on site. Radiological controls manuals (e.g., LAB-RC-0288) include requirements for equipment used for monitoring and control of radiation and radioactivity.
Post Maintenance Testing	Prototypes: Post-maintenance retests are specified by applicable reactor plant, support system, and technical manuals. In some cases (e.g., post-refueling acceptance testing), testing is conducted via Naval Reactors-approved procedures. The conduct of post-maintenance testing is also covered in the Manual for Control of Testing and Plant Conditions. NRF and KSO Refueling: The MCR checkout requirements cover post-maintenance testing for GFE. Requirements for rigging are included in the Lifting Standard. Laboratories: Nuclear safety is maintained through strict controls on the quantity of fissile material on site. Radiological controls manuals (e.g., LAB-RC-0288) include requirements for equipment used for monitoring and control of radiation and radioactivity.

j. Requests for waivers and exceptions to specific requirements of DOE Order 433.1 or this IB will be submitted to NR Headquarters for review and approval. By 31 December of each calendar year, KAPL (lead), with Bettis and NRF input, shall submit any additions, deletions, or modifications to the list of documents applied at Prime Contractor locations that demonstrate compliance with this Order and associated IB. In addition, KAPL

(lead), with Bettis and NRF input, should provide a consolidated list of hazard category 1, 2, and 3 operations and associated buildings within KAPL, Bettis, NRF, and KSO and update this list annually.