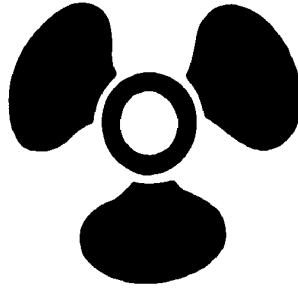


CHAPTER 51



MACHINIST'S MATE, NUCLEAR POWER (MMN)

NAVPERS 18068F-51G
Change 92

Updated: October 2022

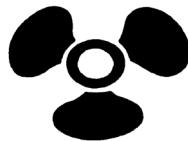
MACHINIST'S MATE, NUCLEAR POWER (MMN)
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NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

MACHINIST'S MATE, NUCLEAR POWER (MMN)



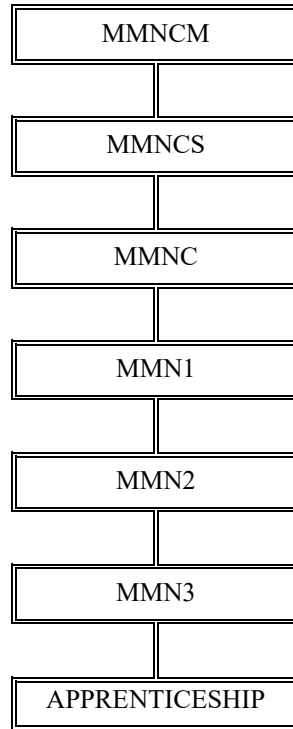
SCOPE OF RATING

Machinist's Mates, Nuclear Power (MMN) operate and maintain Naval Nuclear propulsion plants and associated equipment; supervise and administer Naval nuclear propulsion plant operations; apply reactor, electrical, and mechanical theory involved in the operation of the nuclear reactor, steam plant, propulsion plant, and auxiliary equipment; operate and repair systems associated with reactor plants, propulsion plants, and auxiliary support systems (air compressors, freshwater production plants, steam turbines, shaft line components, air conditioning equipment, feed and condensate, steam, hydraulic, seawater systems, air, potable water, lubricating oil and oil purification, reactor auxiliary and support systems pumps, valves, and heat exchangers); perform tests, transfers, and inventories of lubricating oils, fuels, and water; and maintain records and reports on both submarine and surface ships.

This Occupational Standard is to be incorporated in Volume I, Part B, of the Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards (NAVPERS 18068F) in Chapter 51.

GENERAL INFORMATION

CAREER PATTERN



Normal path of advancement to Chief Warrant Officer and Limited Duty Officer categories can be found in OPNAVINST 1420.1.

For rating entry requirements, refer to MILPERSMAN 1306-618.

SAFETY

The observance of Operational Risk Management (ORM) and proper safety precautions in all areas is an integral part of each billet and the responsibility of every Sailor; therefore, it is a universal requirement for all ratings.

Job Title**Propulsion Plant Mechanical Operator****Job Code****003781****Job Family**

Life, Physical, and Social Science

NOC

TBD

Short Title (30 Characters)

PROPULSION PLANT MECH OP

Short Title (14 Characters)

PPM OPERATOR

Pay Plan

Enlisted

Career Field

MMN

Other Relationships and Rules

NECs NXXX series and other NECs as assigned

Job Description

Propulsion Plant Mechanical Operators operate and perform basic preventive maintenance on propulsion plant mechanical systems, support systems, turbines, pumps, and valves; operate reactor plants, propulsion plants, and auxiliary support systems; monitor operations of the shutdown reactor and propulsion plant; repair and maintain equipment; and perform work critical to the movement of Naval tactical and strategic forces.

DoD Relationship**O*NET Relationship****Group Title**

Nuclear Power

DoD Code

166100

Occupation Title

Nuclear Technicians

SOC Code

19-4051.00

Job Family

Life, Physical, and Social Science

Skills*Quality Control Analysis**Equipment Maintenance**Operation Monitoring**Repairing**Operation and Control**Systems Analysis**Reading Comprehension**Writing**Speaking**Coordination***Abilities***Written Comprehension**Manual Dexterity**Problem Sensitivity**Written Expression**Arm-Hand Steadiness**Oral Expression**Deductive Reasoning**Finger Dexterity**Visual Color Discrimination**Extent Flexibility***ENGINEERING MANAGEMENT****Paygrade**

E4

Task Type

CORE

Task Statements

Maintain small valve maintenance documentation

LABORATORY MANAGEMENT**Paygrade**

E4

Task Type

CORE

Task Statements

Analyze water chemistry samples

E4

CORE

Disestablish radiological controls

E4

CORE

Establish radiological controls

E4

CORE

Grant access to radiological controlled areas

E4

NON-CORE

Maintain chemistry analysis equipment

E4

CORE

Maintain radiological controlled area records

E4

CORE

Maintain water chemistry

E5

NON-CORE

Repair chemistry analysis equipment

E4

CORE

Survey radiological controlled areas

QUALITY MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Adjust pump packing
E4	CORE	Adjust reducing valve set points
E4	CORE	Adjust relief valve set points
E4	CORE	Adjust valve packing
E4	NON-CORE	Calibrate mechanical gauges
E4	CORE	Clean propulsion plant systems and components
E4	NON-CORE	Fabricate emergency repair materials (e.g., drill press, lathe, etc.)
E4	CORE	Lubricate propulsion plant systems and components
E4	CORE	Maintain air compressors
E5	CORE	Maintain air condition systems
E4	CORE	Maintain air systems
E4	CORE	Maintain bilge and oily water systems
E4	CORE	Maintain condensate and feed systems
E4	CORE	Maintain demineralized water systems
E4	CORE	Maintain emergency fill systems
E4	CORE	Maintain fresh water cooling systems
E4	CORE	Maintain fresh water production units
E4	CORE	Maintain fuel oil systems
E4	CORE	Maintain hydraulic systems
E4	CORE	Maintain lube oil purification systems
E4	CORE	Maintain lube oil systems
E4	NON-CORE	Maintain machinery repair equipment (e.g., drill press, lathe, etc.)
E4	CORE	Maintain non-nuclear mechanical components (e.g., compressors, turbines, pumps, valves, etc.)
E4	CORE	Maintain nuclear mechanical systems
E4	CORE	Maintain potable water systems
E4	CORE	Maintain seawater cooling systems
E5	CORE	Maintain shaft line components
E5	CORE	Maintain shielding systems
E4	CORE	Maintain steam generation systems
E4	CORE	Maintain steam systems
E4	CORE	Maintain steam turbines
E4	CORE	Perform lockout tag out procedures
E5	CORE	Repair air compressors
E5	CORE	Repair air condition systems

QUALITY MAINTENANCE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Repair air systems
E5	CORE	Repair bilge and oily water systems
E5	CORE	Repair condensate and feed systems
E5	CORE	Repair demineralized water systems
E5	CORE	Repair emergency fill systems
E5	CORE	Repair fresh water cooling systems
E5	CORE	Repair fresh water production units
E5	CORE	Repair fuel oil systems
E5	CORE	Repair hydraulic systems
E5	CORE	Repair lube oil purification systems
E5	CORE	Repair lube oil systems
E5	NON-CORE	Repair machinery repair equipment (e.g., drill press, lathe, etc.)
E5	CORE	Repair non-nuclear mechanical components (e.g., compressors, turbines, pumps, valves, etc.)
E5	CORE	Repair nuclear mechanical systems
E5	CORE	Repair potable water systems
E4	CORE	Repair propulsion plant systems and components
E5	CORE	Repair seawater cooling systems
E5	CORE	Repair shaft line components
E5	NON-CORE	Repair shielding systems
E5	CORE	Repair steam generation systems
E5	CORE	Repair steam systems
E5	CORE	Repair steam turbines
E5	CORE	Replace pump packing
E5	CORE	Test non-nuclear systems (e.g., freshwater distribution, freshwater circulation systems, high pressure air and service air systems, etc.)
E5	CORE	Test nuclear systems
E5	CORE	Troubleshoot non-nuclear mechanical components (e.g., compressors, turbines, pumps, valves, etc.)

SYSTEMS OPERATIONS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	NON-CORE	Adjust electric plant lineups
E4	CORE	Align air compressors (e.g., startups, shutdowns, normal and casualty operations)
E4	CORE	Align air condition systems (e.g., startups, shutdowns, normal and casualty operations)
E4	CORE	Align air systems (e.g., change reducer settings, system lineup alterations, etc.)
E4	CORE	Align bilge and oily water systems (e.g., pumping bilges, overboard discharge, and casualty operations)

SYSTEMS OPERATIONS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Align condensate and feed systems (e.g., startups, shutdowns, normal and casualty operations)
E4	CORE	Align demineralized water systems (e.g., startups, shutdowns, tank fills, casualty operations, etc.)
E4	CORE	Align emergency fill systems (e.g., startups, shutdowns, normal and casualty operations, etc.)
E4	CORE	Align fresh water cooling systems (e.g., startups, shutdowns, cooling adjustments, normal and casualty operations)
E4	CORE	Align fresh water production units (e.g., startups, shutdowns, etc.)
E4	CORE	Align fuel oil systems (e.g., startup, shutdown, normal and casualty operations)
E4	CORE	Align hydraulic systems (e.g., normal and casualty operations)
E4	CORE	Align lube oil purification systems (e.g., purifier startups, purifier shutdowns, lineups to purify, etc.)
E4	CORE	Align lube oil systems (e.g., startups, shutdowns, normal, and casualty operations)
E4	CORE	Align nuclear mechanical systems (e.g., startup, shutdown, normal and casualty operations, etc.)
E4	CORE	Align potable water systems (e.g., startups, shutdowns, tank fills, water treatment, etc.)
E4	CORE	Align seawater cooling systems (e.g., startups, shutdowns, cross-connects, normal and casualty operations)
E4	CORE	Align shaft line components (e.g., startup, shutdown, normal and casualty operations)
E4	CORE	Align shielding systems (e.g., normal and casualty operations)
E4	CORE	Align steam generation systems (e.g., startups, shutdowns, samplings, blowdowns, etc.)
E4	CORE	Align steam systems (e.g., startups, shutdowns, cross-connects, normal and casualty operations)
E4	CORE	Align water sampling systems (e.g., normal and casualty operations)
E4	CORE	Analyze plant system and component parameters
E4	CORE	Analyze shutdown reactor plant trends
E4	CORE	Draw lube oil sample
E4	CORE	Inspect plant system and component parameters
E4	CORE	Perform main engine throttle operations
E4	CORE	Perform radiological valve operations

Job Title**Propulsion Plant Mechanical Supervisor****Job Code****003789****Job Family**

Production

NOC

TBD

Short Title (30 Characters)

PROPULSION PLANT MECH SUP

Short Title (14 Characters)

PPM SUPERVISOR

Pay Plan

Enlisted

Career Field

MMN

Other Relationships and Rules

NECs NXXX series and other NECs as assigned

Job Description

Propulsion Plant Mechanical Supervisors perform advanced mechanical systems operations; apply advanced level maintenance practices to propulsion plant mechanical systems, support systems, turbines, pumps, and valves; supervise operations, advanced maintenance, advanced testing, and training for personnel assigned to machinery divisions; draft correspondence; develop administrative programs; perform risk management; repair and maintain equipment; and perform work critical to the movement of Naval tactical and strategic forces.

DoD Relationship**Group Title**

Nuclear Power

DoD Code

166100

O*NET Relationship**Occupation Title**

Nuclear Power Reactor Operators

SOC Code

51-8011.00

Job Family

Production

Skills*Complex Problem Solving**Troubleshooting**Coordination**Operation Monitoring**Management of Personnel Resources**Judgment and Decision Making**Systems Evaluation***Abilities***Deductive Reasoning**Inductive Reasoning**Oral Expression**Written Comprehension**Problem Sensitivity**Information Ordering**Near Vision***ENGINEERING MANAGEMENT****Paygrade**

E6

Task Type

CORE

Task Statements

Supervise propulsion plant maintenance operations (e.g., electrical, mechanical, reactor control, etc.)

E6

CORE

Supervise propulsion plant watch section operations

LABORATORY MANAGEMENT**Paygrade**

E5

Task Type

NON-CORE

Task Statements

Troubleshoot chemistry analysis equipment

QUALITY MAINTENANCE**Paygrade**

E5

Task Type

CORE

Task Statements

Troubleshoot air compressors

E6

CORE

Troubleshoot air condition systems

E5

CORE

Troubleshoot air systems

E6

CORE

Troubleshoot bilge and oily water systems

E6

CORE

Troubleshoot condensate and feed systems

E5

CORE

Troubleshoot demineralized water systems

E6

CORE

Troubleshoot emergency fill systems

E6

CORE

Troubleshoot fresh water cooling systems

E6

CORE

Troubleshoot fresh water production units

QUALITY MAINTENANCE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E6	CORE	Troubleshoot fuel oil systems
E6	CORE	Troubleshoot hydraulic systems
E5	CORE	Troubleshoot lube oil purification systems
E6	CORE	Troubleshoot lube oil systems
E6	NON-CORE	Troubleshoot machinery repair equipment (e.g., drill press, lathe, etc.)
E6	CORE	Troubleshoot nuclear mechanical systems
E5	CORE	Troubleshoot potable water systems
E6	CORE	Troubleshoot seawater cooling systems
E6	CORE	Troubleshoot shaft line components
E5	CORE	Troubleshoot shielding systems
E6	CORE	Troubleshoot steam generation systems
E6	CORE	Troubleshoot steam systems
E6	CORE	Troubleshoot steam turbines

SYSTEMS OPERATIONS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Offload fuel oil systems
E5	CORE	Offload lube oil tanks
E5	CORE	Onload fuel oil systems
E5	CORE	Onload lube oil tanks
E6	CORE	Oversee radiological valve operations

Job Title**Propulsion Plant Mechanical Manager****Job Code****003797****Job Family**

Production

NOC

TBD

Short Title (30 Characters)

PROPULSION PLANT MECH MGR

Short Title (14 Characters)

PPM MANAGER

Pay Plan

Enlisted

Career Field

MMN

Other Relationships and Rules

NECs NXXX series and other NECs as assigned

Job Description

Propulsion Plant Mechanical Managers manage operations, maintenance, and training for personnel assigned to machinery divisions and engineering and reactor departments; review divisional and departmental administrative correspondence; perform divisional/departmental program and training audits; perform risk management; repair and maintain equipment; and perform work critical to the movement of Naval tactical and strategic forces.

DoD Relationship**Group Title**

Nuclear Power

DoD Code

166100

O*NET Relationship**Occupation Title**

First-Line Supervisors of
Production and Operating Workers

SOC Code

51-1011.00

Job Family

Production

Skills*Quality Control Analysis**System Evaluation**Coordination**Systems Evaluation**Critical Thinking**Judgement and Decision Making**Management of Material Resources**Monitoring**Operation Monitoring***Abilities***Problem Sensitivity**Near Vision**Deductive Reasoning**Inductive Reasoning**Information Ordering**Selective Attention**Visualization**Written Comprehension***ENGINEERING MANAGEMENT****Paygrade**

E7

Task Type

NON-CORE

Task Statements

Administer continuous training exams

E7

CORE

Audit engineering and reactor department records

E7

CORE

Manage equipment modifications and modernization

E7

CORE

Verify plant system and component parameters

LABORATORY MANAGEMENT**Paygrade**

E7

Task Type

CORE

Task Statements

Audit chemistry records

E7

CORE

Verify radiological controlled area records

E7

CORE

Verify radiological controlled areas

QUALITY MAINTENANCE**Paygrade**

E7

Task Type

CORE

Task Statements

Inspect shaft line components