

ENVIRONMENTAL QUALIFICATION REPORT  
FOR  
SAFETY-RELATED MECHANICAL EQUIPMENT

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Millstone Nuclear Power Station - Unit 3

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## SUMMARY

This report provides a documented environmental review of safety-related mechanical equipment located in a harsh environment at the Millstone Nuclear Power Station - Unit 3. Each component included in the scope of this review was analyzed to determine the potential impact of the normal and accident environment on the required equipment functions.

This review has determined that the nonmetallic materials used in the safety-related mechanical equipment will not degrade when subjected to the postulated harsh environment to the extent that the safety-related functions of the equipment would be affected.

The few outstanding items which have not been evaluated or demonstrated to be environmentally acceptable are discussed in Section 3. The results of this evaluation, to be documented at a later date, will become part of this report.

## SECTION 1

### INTRODUCTION

#### 1.1 PURPOSE

This report provides a documented review and analysis of the nonmetallic materials used in safety-related mechanical equipment. It demonstrates that the environmental effects due to plant operation and postulated accident would not degrade these materials to the extent of preventing this equipment from performing its intended safety functions.

#### 1.2 SCOPE

This report details the environmental design conformance review of safety-related mechanical equipment located in the harsh environments identified by the environmental conditions provided in FSAR Section 3.11. The review program evaluates nonmetallic subcomponents of mechanical equipment. Equipment reviewed includes: pumps, fans, motor-operated valves (valve only), manual valves, air-operated valves, safety and relief valves, check valves, hydraulic snubbers, dampers, nonmetallic expansion joints and gaskets, mechanical penetration sealings, lubricants, and hydraulic fluids. Excluded from this review are electrical items such as: solenoid valves, motor operators, electrical penetrations, motor drives, etc. These items have been reviewed in the Millstone 3 Electrical Equipment Environmental Qualification Program.

#### 1.3 BACKGROUND

General Design Criterion Four (GDC-4) requires that plant equipment be designed to accommodate the effects of and be compatible with the environmental conditions associated with normal operation, maintenance, testing, and where applicable, postulated accidents including loss-of-coolant accidents.

The procurement of specified and qualified mechanical equipment is part of the overall procurement program for the Millstone Nuclear Power Station - Unit 3. Mechanical equipment specifications were, in general, based on the environmental conditions in Section 3.11 of the FSAR. The process fluid temperature and radiation condition are also considered whenever they exceed the general area environmental conditions.

Mechanical equipment is usually not as sensitive to radiation exposure as electrical components. Metallic portions of equipment are particularly resistant to radiation. Nonmetallic parts of mechanical equipment, while more sensitive to radiation and temperature, are generally utilized in the equipment in such a manner that the degradation of mechanical properties will not substantially affect the required safety function of the

component. However, to clearly demonstrate the acceptability of safety-related mechanical equipment, all applicable equipment has been reviewed and this qualification report has been prepared.

## SECTION 2

### PROGRAM DESCRIPTION

The Safety-Related Mechanical Equipment Environmental Qualification review and documentation consist of the following:

- Identification of safety-related mechanical equipment
- Identification of design environmental conditions
- Identification of environmentally-sensitive nonmetallic subcomponents
- Identification of environmentally sensitive subcomponent material capabilities
- Aging analysis
- Evaluation of environmental effects
- Acceptance criteria
- Documentation description

#### 2.1 IDENTIFICATION OF SAFETY-RELATED MECHANICAL EQUIPMENT

Safety-related mechanical equipment is procured for Millstone 3, using equipment procurement specifications. The Specification Index was reviewed and relevant specifications were identified. A master list of selected specifications containing QA Category I safety-related mechanical equipment was prepared and is included in this report. Each of the specifications was reviewed and those which met the following criteria were selected for detailed review and evaluation:

- a. Equipment located in a potentially harsh environment
- b. Equipment which includes nonmetallic subcomponents
- c. Equipment not qualified under IEEE Qualification Program

#### 2.2 IDENTIFICATION OF DESIGN ENVIRONMENTAL CONDITIONS

The environmental conditions used for the review of mechanical equipment were those presented in the Millstone 3 FSAR, Section 3.11.

Regarding environmental conditions (temperature, pressure, humidity, and radiation), only radiation and temperature were considered in the review. Pressure and humidity were not considered relevant since the design of nonmetallic portions of

mechanical equipment for these parameters is governed by system process conditions which already have been addressed in the appropriate specification.

For equipment directly exposed to process radioactive fluid, the radiation level due to the process fluid was used, whenever it was found higher than the general area environmental conditions as defined in FSAR, Section 3.11.

For conservative initial screening, the maximum predicted accident temperatures and the total integrated normal plus the area accident radiation doses were utilized. Where further evaluation was deemed necessary, time temperature profiles and location specific doses were utilized to more closely evaluate the environmental condition. Identical equipment in a group were evaluated to the most severe environmental zone that any single member would be exposed. Spare equipment was evaluated as a minimum to the most severe environmental zone applicable to the group to which they were procured, so that they may be used to replace any of the original components (unless otherwise stated in the data package).

### 2.3 IDENTIFICATION OF ENVIRONMENTALLY SENSITIVE NONMETALLIC SUBCOMPONENTS

Specifications with equipment located in a harsh environment and containing nonmetallic subcomponents were selected for further evaluation.

The latest revision of the manufacturer's drawing (containing bills of materials, vendor manuals, and vendor drawings) was reviewed. Where necessary, additional information was obtained from the spare parts documentation or from the equipment vendor for identification of specific trade name materials, or to further clarify material identification.

All environmentally-sensitive equipment subcomponents were identified and tabulated on the Subcomponent Data Sheet (SDS), along with the material composition. Environmentally-sensitive subcomponents include those which are made up of nonmetals (such as gaskets and seals). The SDS are identified by the specification under which the equipment was purchased.

Lubricants and hydraulic fluids used in the equipment were evaluated for sensitivity to the environment to which they are exposed.

### 2.4 IDENTIFICATION OF ENVIRONMENTALLY SENSITIVE SUBCOMPONENT MATERIAL CAPABILITIES

Each material identified, as discussed in Section 2.3, was examined to determine the effect of the environmental conditions on the material properties. Threshold radiation level and



maximum service temperature were conservatively used for initial screening. Threshold radiation level is the lowest radiation exposure at which a property change in the material is documented. Maximum service temperature is the maximum steady state temperature a material can be subjected to without loss of function. These values were obtained through a compliance review of general industry test data as well as from generally recognized materials publication.

Additional data were also collected documenting varying degrees of material degradation with more severe environmental conditions. These data were used only if the initial screening procedure determined that the subcomponent material required further evaluation.

## 2.5 AGING ANALYSIS

In addition to the evaluation for material acceptability at the maximum calculated environmental temperature, thermal aging calculations were performed for plastics and elastomers used in harsh thermal environments. Calculations were done using the Arrhenius method to determine the decrease in useful life for materials due to accident temperature conditions. This reduction in material life was then used to determine the useful life of the material at normal design area temperatures.

Metallic and mineral based materials are not considered to be sensitive to thermal aging during the design life of the plant.

### Buna-N Subcomponents

The review of the various materials used in subcomponents has identified the use of Buna-N typically as oil seals in pumps, O-rings on pumps and valves, and as diaphragm in air actuators/valves. IE Bulletin No. 78-14 discusses the limitations of Buna-N. Where Buna-N is used in harsh environments, thermal aging calculations have been performed to determine useful material life in lieu of using the specific general life span information in IE Bulletin No. 78-14.

## 2.6 EVALUATION OF ENVIRONMENTAL EFFECTS

The evaluation of environmental effects was performed for the predicted component environments as follows:

### a. Temperature and Radiation

Temperature and radiation levels were evaluated by an initial screening, comparing the component/material capabilities (threshold radiation level and maximum service temperature) as determined under Section 2.4, with the postulated harsh environmental conditions. If the threshold radiation values and the maximum service

temperature were above the maximum postulated environmental conditions, then the material is considered "Acceptable by Comparison." Where this comparison by itself was not sufficient to demonstrate qualification, further evaluation was performed which considered:

1. Location specific radiation dose
2. Time dependent temperature profile
3. Degree of functional degradation
4. Material properties affected
5. Failure modes and effects
6. Predicted safety impact

b. Service Life

Subcomponents were found qualified for 40 years of plant operation, including 1 year of post-accident environment, unless otherwise stated in Section 3 and/or in Appendix A (i.e., in Data Packages).

## 2.7 ACCEPTANCE CRITERIA

In order to be considered qualified, it was demonstrated that the safety function of the component is not compromised by the maximum postulated harsh environmental conditions. The following specific guidelines were utilized in determining whether the acceptance criteria were met:

- a. Radiation threshold level and maximum service temperature were not exceeded by environmental conditions.
- b. A degree of degradation of many nonmetallic subcomponents was tolerated without loss of safety function. However, in certain circumstances, such as where negligible leakage must be maintained through a valve or seal, the materials were not accepted if a slight change in material properties substantially increases leakage.
- c. Air operators which fail to their safety-related position on loss of air or failure of any nonmetallic subcomponent were considered qualified.
- d. Maximum service life due to thermal aging (as calculated under Section 2.5) was considered acceptable if it resulted in reasonable maintenance intervals.

- e. Components that could not be qualified either to the design specification or by analysis were identified as outstanding. Recommendations were made on the outstanding components for additional investigation such as: 1) possible shielding afforded by a metal housing, 2) alternate acceptable replacement materials as recommended by the manufacturers, 3) possible relocation of equipment, or 4) data not available and being researched.

## 2.8 DOCUMENTATION DESCRIPTION

### A. Data Packages

The documentation of the review is contained in the Documentation Data Packages. A Data Package was prepared for each specification that required evaluation. The Data Package provides the complete documentation of the review of vendors' equipment and is numbered with the contract number (specification number). Each Data Package contains the following documents.

#### a. Cover Sheet

This sheet serves as a Table of Contents for the package, identifying all contained sections.

#### b. Introduction Sheet

The Introduction Sheets list the equipment included in the data package and also summarize the result of the evaluation.

#### c. Conformance Review Sheets (CRS)

The Conformance Review Sheets serve as summary for the qualification effort and status. These sheets include equipment identification, location zone, and environmental qualification status. The status codes used are as follows:

##### AC - Acceptable by Comparison

Both the harsh environmental temperature and radiation dose are below the material's predicted properties change starts.

##### AE - Acceptable by Evaluation

Some changes in material properties due to environmental conditions is anticipated but further evaluation has been completed which



demonstrates the components capability of performing the intended safety function.

Q - Qualified

All the subcomponents is in the equipment which are evaluated are acceptable either by AC or AE.

O - Outstanding

Either the current available documentation does not clearly demonstrate material acceptability and/or further evaluation is required.

d. Subcomponent Data Sheets (SDS)

The Subcomponent Data Sheets list the environmentally-sensitive subcomponents, their materials of construction, the material threshold radiation value, and maximum service temperature values. Also listed are the harsh environmental radiation and temperature exposure and the predicted service life by thermal aging calculation when applicable.

e. Engineering Analysis Sheets

The Engineering Analysis Sheets document the review of the effect of environmental conditions on the subcomponent and determines the subcomponents acceptability.

f. Materials Data Sheets and Thermal Aging Data Sheets

The material sheets provide the documentation of the material threshold radiation and temperature limits. Thermal Aging Sheets (when applicable) provide the expected age due to temperature conditions.

B. Reference Library

Supplemental Reference Material and Calculations files are maintained separately from the data package.

## 2.9 PREVENTIVE MAINTENANCE PROGRAM

The preventive maintenance (PM) program of Millstone 3 is supported by the Production Maintenance Management System (PMMS) and Department Procedures. The PMMS program is computer data base consisting of three segments:

1. ID System containing nameplate data, technical data, reference procedures, scheduling requirements, nuclear indicators, technical publications for each piece of equipment, etc.
2. Work Order System used for work control of preventive and corrective maintenance including work scope scheduling, authorization tracking, quality control, and review.
3. History System maintains the record of completed work for all equipment.

From the safety-related Mechanical Equipment Qualification (MEQ) aspect the program, PM objectives are: to maintain the equipment in the qualified condition, ensure plant availability and reliability, maintain responsiveness to the regulatory and reliability reporting, and track equipment qualified lives.

The PMMS program input for MEQ consisted of the Equipment Master List, SDS (Subcomponent Data Sheet) information and requirements, Vendor's Maintenance Procedures, and Vendor's Service Manuals. The vendors maintenance and service requirements are assigned a department procedure number or word description based on specified requirements. The above input is entered into the appropriate computer fields and verified.

The PMMS ID System is, as a minimum, capable of indicating the following:

1. PMMS ID: (Plant Number)
2. Local ID: (Equipment Mark Number)
3. Manufacturer:
4. Model No.:
5. Date of Entry:
6. Inservice Date:
7. Description:
8. Location Data:
  - A. Bldg:
  - B. Room:
  - C. Elev:
9. Technical Data:

10. Nuclear Indicators:

- A. Cat. I:
- B. Seismic:
- C. EQ:

11. Reference Procedures:

12. Remark:

For a typical example, refer to Figure 1, PMMS ID System Inquiry Report. The example given is for electrical equipment; however, the same format with mechanical requirements for MEQ would be presented in the report.

In order to perform maintenance on a specific piece of equipment or to maintain the equipment in its qualified state or manufacturer's specified schedule, a PMMS Work Order is used. The Work Order System provides a document around which is built a work package that will be specific with regard to priority, schedule, tools, procedures, work scope, and plant or system conditions required when the work is to be performed. The Work Order System will be as complete as possible in its detail in order for the maintenance crew to accomplish the required work.

The Work Order System will provide a smooth, traceable flow for work from its originator through the planning process, review of work documentation, and notification of completion. This system has the ability to maintain equipment history for trending. In addition, the system carries over some of the equipment information supplied on the PMMS ID System. Therefore, this allows an individual to verify information in both systems. The PMMS Work Order System controls work to be performed on the actual equipment (device) using department procedures where appropriate.

A typical example given in Figures 2A, 2B, and 2C, PMMS Work Order System, is for electrical equipment; however, the same format with mechanical requirements for MEQ would be presented in the report.

A brief discussion of Figures 1 and 2A of the PMMS program indicates that the equipment (in this example) is located in M3 (MP3), in Service Water System (SWS); ID: 3SWP\*8DPIS24A; Building: Circulating Water House (CW); Room: PMP house; Problem Description: Perform EEQ PM Procedure 3472C13; etc. Note that the procedure (3472C13) is listed in both PMMS ID System and PMMS Work Order System, thus tying the equipment to a maintenance requirement. In addition, the PMMS Work Order System assigns a unique work order (WO) number. In this example case - M3 84 07195, with a WO Type, priority, lead department and scheduled

start and desired completion dates. Refer to the boxed-in information in the upper right hand section of Figure 2A. Finally, Figures 2B and 2C have areas which require fill-in data or information by the individual(s) performing the task and the appropriate approval and completion signatures from QA/QC to department head. Note in Figure 2B, the area designated Actual Work/Remarks/Parts Used requires information supplied by the indicated procedure (3472C13) to ensure the equipment is maintained to qualified status.

An equipment sort may be done by zone, service date, qualified life, nuclear indicator, manufacturer, and reference procedure or equivalent. This ensures that the equipment is maintained in order to support its (equipment) qualification requirements.

The responsibility for maintenance of mechanical equipment is the requirement of the Maintenance Department.

The MP3 Maintenance Supervisor is responsible for ensuring that equipment assigned to his department is maintained and tested to ensure continued operability and reliability.

==> PMMS ID SYSTEM INQUIRY REPORT <== DATE GENERATED: 11/26/84  
 AT : 10:07:17

PMMS ID : M3 03 SWS SWT POIS24A AS OF : 11/12/84  
 HSI : M3 03 AUX BY : MP3300  
 LOCAL ID : 3SWP#POIS24A LSYS : 3325  
 MANUFACTURER: ITT-3 MFG CODE:  
 MODEL : 224/580-1 JOP: 000000  
 SERIAL # : INSERVICE DATE: 11/02/82  
 EIIS : CMC DATE : 11/02/82  
 INPRDS : CMC AMT: 00000000000  
 POWER SOURCE: DEPT RESP: I STATUS: P  
 DESCRIPTION : SERV. PTR PUMP STRAINER 3SWP#STRIA BACK FLUSH DP  
 IND SWITCH

LOCATION DATA:  
 BLDG: CN ELEV: 0019 FEET 00 INCHES  
 ROOM: P4PHOUSE GRID: 5/2

TECHNICAL DATA	NUSCC DRAWING NUMBERS	NUCL INDICATORS
1: ACC =1.5	1: -	CAT1 : Y
2: =	2: -	FIRE PROT GA : Y
3: =	3: -	RAD WASTE GA : Y
4: =	4: -	SEISMIC : Y
5: =	5: -	EE : Y
6: =	6: -	ZONE: 0401
7: SPEC=377	7: -	LIFE: 105=3
8: =	8: -	DATE: 05/01/84
9: =	9: -	

	CAUTIONS	CHARGE NUMBERS
10: =		
11: =		
12: =		
13: INPT=0-5-PSID	1: EE SEAL	1:
14: SCI =0-5-PSID	2:	2:
15: TYPE=DUALBELLOWS	3:	3:
16: =		
17: =		

SCHEDULING PROC	TECHNICAL PUBC	REFERENCE PROC
1: FSK-9-10A	1:	1: 3472022
2: LSK-9-10C	2:	2: 347201L
3: EE-18A	3:	3: 347201C
4: EE-30K	4:	4: 31.6/3481B
5: EE-3AAV	5:	5:
6: EE-9FX	6:	6:
7: ESK-6DD		7:
8: 3K-16D-04		8:
9: EE-3ABR	1: 3SWP-024A	
10: EE-3ABG	2:	
11:	3:	
12:	4:	

REMARKS:  
 SETP CAL: SP-3SWP-1  
 ACCEPT. CRITERIA INDICATION: +/-0.10-PSID  
 SWITCH: SPOT(2) CONTACTS: SPOT(2)  
 \*ENVIRONMENTALLY SEALED\* PERFORM PROC 3472022 IF SW. IS OPEN

Figure 1



PMMS ID: M3 03 SWS SWT PDIS24A  
LOCAL ID: 3SWP\*PDIS24A  
L SYS: 3326  
BLDG: CW  
ROOM: PMPHOUSE  
ELEV: 0019 FT 00 IN

WORK ORDER.....: M3 34 07195 |  
WO TYPE.....: PM |  
PRIORITY.....: 3 |  
LEAD DEPT.....: IEC |  
UNT STATUS RECD: U |  
SCHD STRT DATE: 05 / 01 / 85 |  
DES COMP DATE: 05 / 15 / 85 |

EQUIPMENT DESCRIPTION:  
SERV. WTR PUMP STRAINER 3SWP\*STRIA BACK FLUSH DP IND SWITCH

PROBLEM DESCRIPTION: PERFORM EQ PM PROCEDURE 3472C13

SUSPECTED  
CAUSE:

ORIGINATOR : T ROGERS DATE: 05 / 30 / 85 DEPT: IEC  
SUPV APPROVAL : DATE: 05 / 00 / 00 NO TAG HANG:  
\*\*\*\*\*  
QC RECD : YES CAT I: YES CONVEX CLR: PART SHEET:  
TAG RECD : N EQ : YES GUARD RECD: N TANK ENTRY: N  
RWP RECD : N FPQA : LLRT RECD : N TOOL LIST:  
ALARA REV: N RWQA : ISI RECD : N FIRE WATCH: N

PROCEDURES CAUTIONS  
31.6/348186  
3472C12  
3472C13

CAUTION NOTES

TASK DESCRIPTION	DEPT	ACT ME.	ACT HRS
INSTALL	ICA	---	---
		---	---
		---	---
		---	---
		---	---

INVOLVES POCR: N  
POCR NO.:  
RESP ENGR:  
APPL CODE:  
P.O. NO.:

JOB DESCRIPTION: PERFORM IC3472C13

**FOR OFFICIAL USE ONLY**

ACCOUNTS: AU CCC ACC SU C CMS W.O. ACT RE AC.

ASST DEPT NOTIFIED: \_\_\_\_\_ WORK DIRECTED BY: \_\_\_\_\_  
JOB SUPERVISOR: D DATE

DEPARTMENT APPROVAL: \_\_\_\_\_ DATE: \_\_\_ / \_\_\_ / \_\_\_

TAG CLEARANCE NO: \_\_\_\_\_ COPY OF TAGGING ATTACHED: \_\_\_\_\_

LCD ENTERED: \_\_\_\_\_ APPL TECH SPEC NO: \_\_\_\_\_ TIME PERMITTED: \_\_\_\_\_

AUTHORIZED BY OPS: \_\_\_\_\_ TIME: \_\_\_\_\_ DATE: \_\_\_ / \_\_\_ / \_\_\_

Figure 2A

\*\*\*\*\*  
TAGGING VERIFIED: \_\_\_\_\_ JOB COMPLETION DATE: \_\_\_ / \_\_\_ / \_\_\_

ACTUAL WORK / REMARKS / PARTS USED: \_\_\_\_\_

CAUSE OF PROBLEM: \_\_\_\_\_

FAILURE CODE: \_\_\_\_\_

DELAYS / COMMENTS: \_\_\_\_\_

DELAY CODE: \_\_\_\_\_

PERFORMED BY: \_\_\_\_\_

SPECIAL EQUIPMENT: \_\_\_\_\_

SERIAL NUMBER: \_\_\_\_\_

CAL DUE DATE: \_\_\_ / \_\_\_ / \_\_\_

WORK/INSPECTION COMPLETE - JOB SUPV: \_\_\_\_\_ DATE: \_\_\_ / \_\_\_ / \_\_\_

\*\*\*\*\*  
METHOD - PROCEDURE: NO RETEST REQUIRED. RETEST/FUNCTIONAL VERIFICATION.

PREREQ/INIT COND	RESULTS
INSPECTION PLAN: _____	SAT - UNSAT
NCP'S CLEARED: _____	DATA
PERS. QUALIFIED: _____	_____
EQUIPMENT CAL: _____	_____
NOTIFY ISI: _____	_____
OTHER: _____	_____

PRECAUTIONS:  
ACCEPT CRITERIA:

TEST PERFORMED BY: \_\_\_\_\_ DEPT: \_\_\_\_\_ DATE: \_\_\_ / \_\_\_ / \_\_\_

RETAGGED FOR WORK COMPLETION: \_\_\_\_\_ DATE: \_\_\_ / \_\_\_ / \_\_\_

TAGS CLEARED: \_\_\_\_\_ A.O. TAG REMOVED: \_\_\_\_\_ TO: \_\_\_\_\_

IF PDCR: VERIFY OPS CRITICAL DWGS, FORMS, AND PROCEDURES UPDATED: \_\_\_\_\_

ACCEPTED BY OPS: \_\_\_\_\_ DATE: \_\_\_ / \_\_\_ / \_\_\_

PMMS PLANNER: \_\_\_\_\_ DATE: \_\_\_ / \_\_\_ / \_\_\_

DEPT HEAD REVIEW: \_\_\_\_\_ DATE: \_\_\_ / \_\_\_ / \_\_\_

QC FINAL REVIEW: \_\_\_\_\_ DATE: \_\_\_ / \_\_\_ / \_\_\_

QA FINAL REVIEW: \_\_\_\_\_ DATE: \_\_\_ / \_\_\_ / \_\_\_

Figure 2B

\*\*\*\*\*  
QUALITY REQUIREMENTS  
\*\*\*\*\*

QC CATEGORY:

CAT I : Y  
CAT II / NOV QA: N  
FPQA : N  
RWQA : N

INSPECTION PROCEDURE REQUIRED: N  
PROCEDURE NO: \_\_\_\_\_ REV: \_\_\_\_\_  
PROCEDURE NO: \_\_\_\_\_ REV: \_\_\_\_\_

INSPECTION PLAN REQUIRED: N

NO. EXPLAIN:

HOUSEKEEPING ZONE: \_\_\_\_\_

PERSONNEL ACCOUNTABILITY LOG RECD: N

CLEANNESS LEVEL: \_\_\_\_\_

MATERIAL ACCOUNTABILITY LOG RECD: N

SURVEILLANCE / MONITOR / AUDIT REQUIRED: \_\_\_\_\_

REFERENCE NCR'S: \_\_\_\_\_

\_\_\_\_\_ NUMBER: \_\_\_\_\_

NCR NUMBER: \_\_\_\_\_

OTHER: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**FOR INFORMATION ONLY**

QC APPROVAL: \_\_\_\_\_

DATE: \_\_\_ / \_\_\_ / \_\_\_

QA APPROVAL: \_\_\_\_\_

DATE: \_\_\_ / \_\_\_ / \_\_\_

\*\*\*\*\*  
QC WORK PERFORMED  
\*\*\*\*\*

QC INSPECTORS  
\*\*\*\*\*

INITIAL HOUSEKEEPING VERIFIED: \_\_\_\_\_

DATE: \_\_\_ / \_\_\_ / \_\_\_

FINAL HOUSEKEEPING VERIFIED: \_\_\_\_\_

DATE: \_\_\_ / \_\_\_ / \_\_\_

CLEANNESS VERIFIED: \_\_\_\_\_

DATE: \_\_\_ / \_\_\_ / \_\_\_

MIF / MRF VERIFIED ATTACHED: \_\_\_\_\_

DATE: \_\_\_ / \_\_\_ / \_\_\_

NCR'S GENERATED:  
NCR NUMBER: \_\_\_\_\_

DATE DISPOSITION APPROVED: \_\_\_ / \_\_\_ / \_\_\_

NCR NUMBER: \_\_\_\_\_

DATE DISPOSITION APPROVED: \_\_\_ / \_\_\_ / \_\_\_

WELD HISTORY ATTACHED: \_\_\_\_\_

DATE: \_\_\_ / \_\_\_ / \_\_\_

WORK ORDER PACKAGE AT JOB SITE: \_\_\_\_\_

DATE: \_\_\_ / \_\_\_ / \_\_\_



### SECTION 3

#### CONCLUSION

The results of this review demonstrate that the environmental effects due to normal operation and postulated accidents will not result in the unacceptable degradation of safety-related nonmetallic components except those identified in the following data packages:

SP.065 - Special Filter Assemblies

Further evaluation will continue.

SP.075 - Hydrogen recombiner.

Gasket material will be replaced.

SP.568 - Plug Valves

Thirty-seven valves could not be shown to be acceptable. Eight valves will be replaced and 29 valves will have their internal elastomers replaced.

SP.680 - Cable and Mechanical Penetration Fire Stops and Seals

Further evaluation will continue.

The following specifications and equipment are still being evaluated. Results of this evaluation will be documented at a later date and will be made a part of this report:

SP.001 - Nuclear System Supply System

SP.005 - Fuel Pool Cooler

SP.020 - Containment Recirculation Coolers

SP.022 - Shop Fabricated Vessel (ASME III)

SP.023 - Field Fabricated Tanks (ASME III)

SP.029 - Neutron Shield Tank

SP.031 - Emergency Generator Fuel Oil Storage Tank

SP.041 - Steam Generator Auxiliary FW Pump and Driver

SP.054 - Gas Waste System Heat Exchanger

SP.109 - Containment Structure Steel Pit Liner

SP.164 - Butterfly Valves

SP.185 - Control Valves

SP.446 - Reactor Plant Component Cooling Heat Exchanger

SP.483 - Tilting Disc Check Valves

SP.611 - Instrument Valves and Manual Valves

SP.914 - Mechanical Equipment Erection

SP.968 - Field Fabrication and Erection of Pipe

Lubricants and hydraulic fluids

Non-metallic flexible connections, expansion joints, and seals (includes SP.582)

APPENDIX A

List of Specifications Containing Safety-Related Mechanical  
Equipment

Conformance Review Sheets

Subcomponent Data Sheets

NORTHEAST UTILITIES SERVICE COMPANY  
MILLSTONE NUCLEAR POWER STATION - UNIT 3

MECHANICAL EQUIPMENT ENVIRONMENTAL QUALIFICATION  
LIST OF SPECIFICATIONS CONTAINING SAFETY-RELATED  
MECHANICAL EQUIPMENT

<u>Specification No.</u>	<u>Description</u>	<u>Vendor</u>	<u>Status</u>	<u>Remarks</u>
2240.000-001	Nuclear Steam Supply System	Westinghouse	Outstanding	Only for Category I mechanical equipment supplied under this program
2332.502-004	Service Water Pumps	Hayward Tyler Pump	Mild Environment	
2214.703-005	Fuel Pool Cooler	Ametek MFG	Outstanding	
2214.702-006	Fuel Pool Cooling Pump	Goulds Pump	Qualified	
2217.200-014	Cont. Struct. Polar Crane	Harnischfeger Corp.	No Nonmetallic	
2214.803-020	Cont. Recirc. Coolers	Joseph Oat Inc.	Outstanding	
2214.411-022	Shop Fab Vessel ASME III	PX Engr Co.	Outstanding	
2275.001-023	Field Fab Tanks ASME III	Richmond Engr Co.	Outstanding	
2213.100-029	Neutron Shield Tank	Rotterdam Nuclear	Outstanding	
2100.380-031	Emergency Gen FO Strg Tk	Nabco	Outstanding	
2213.500-032	Inadequate Core Cooling	Combustion Engineering	Included in IEEE qualification program	
2219.900-035	Hydrogen Monitoring	EXO Sensors	Included in IEEE qualification program	
2214.602-040	Quench Spray Pumps	Goulds Pump	Qualified	
2275.200-041	Stm Gen Aux FW Pump and Driver	Bingham Willamette	Outstanding	
2214.432-042	HCV Split Casing Pumps	Goulds Pump	Qualified	

NORTHEAST UTILITIES SERVICE COMPANY  
MILLSTONE NUCLEAR POWER STATION - UNIT 3

MECHANICAL EQUIPMENT ENVIRONMENTAL QUALIFICATION

LIST OF SPECIFICATIONS CONTAINING SAFETY-RELATED  
MECHANICAL EQUIPMENT

<u>Specification No.</u>	<u>Description</u>	<u>Vendor</u>	<u>Status</u>	<u>Remarks</u>
2447.200-043	Emerg Gen Fuel Oil Transfer Pump	Goulds Pump	Mild Environment	
2214.802-044	Containment Recirc Pump	Bingham Williamette	Qualified	
2252.033-054	Gas Waste Sys Heat Exchg	Richmond Engr Co.	Outstanding	
2176.430-061	Control Building Water Chiller	Carrier Corp.	Mild Environment	
2332.516-063	Serv Wtr Self-Cing Strs	R.P. Adams Co.	Mild Environment	
2170.430-065	Special Filter Assemblies	C.V.I. Corp.	Outstanding	
2252.020-070	Process Gas Treat System	CTI Nuclear Inc.	No Nonmetallic	No Cat I nonmetallic component
2213.400-072	Neutron Flux Detector and Manipulator	Gamma Metrics	Included in IEEE qualification program	
2252.090-074	Gaseous Waste System Degasifier	Richmond Engr Co.	No Nonmetallic	No Cat I nonmetallic component
2214.900-075	Hydrogen Recombiner	Rockwell International	Outstanding	Gaskets in blower assembly are outstanding
2520.350-086	Cont. Inst. Air Equipment	Ingersoll-Rand Company	Included in IEEE qualification program	Only the electrical parts are Category I
2190.520-109	Contn. Struct. Stl. Pit Liner	Graver Energy Systems, Inc.	Outstanding	
2231.300-118	Spent Fuel Shipping Cask Trolley	Harnischfeger Corp.	No Nonmetallic	

NORTHEAST UTILITIES SERVICE COMPANY  
MILLSTONE NUCLEAR POWER STATION - UNIT 3

MECHANICAL EQUIPMENT ENVIRONMENTAL QUALIFICATION  
LIST OF SPECIFICATIONS CONTAINING SAFETY-RELATED  
MECHANICAL EQUIPMENT

<u>Specification No.</u>	<u>Description</u>	<u>Vendor</u>	<u>Status</u>	<u>Remarks</u>
2221.180-127	Hydraulic Snubbers	Paul Monroe Hyd.	Qualified	
2211.110-128	Reac Vessel Leveling Devices	J.P. Bell Co.	No Nonmetallic	
2221.180-130	React Clint Pumps and Steam Generator Support	Lamco Ind. Inc.	No Nonmetallic	
2214.322-132	Engr. Saf. Feat. Equip. Support	Teledyne Brown Eng	No Nonmetallic	
2214.414-134	Reac Pint Comp Cooling Ht Exch Support	Thames Valley Steel Corp.	No Nonmetallic	
2170.430-140	Axial Flow Fans	Buffalo Forge Co.	Qualified	
2176.430-141	Centrifugal Fans	Buffalo Forge Co.	Qualified	
2178.430-144	Self-Contnd A/C Un	C.V.I. Corp.	Mild Environment	
2282.050-153	Cast SS Valve 2.5 In & lgr	Aloyco Co.	Qualified	
2282.150-154	Forg SS Valves 2 In & Small	Dresser Ind.	Qualified	
2282.350-158	Diaphragm Valves	ITT Grinnell	Qualified	
2362.050-161	CS Vlvs 2.5 In & Lgr	Walworth Co.	Qualified	
2362.150-162	Forged CS Vlvs 2 In & Smaller	Dresser Ind.	Qualified	
2362.200-164	Butterfly Vlv Flanged & Wafer	Henry Pratt Company	Outstanding	
2362.650-172	Insert Type Check Valves	TRW Mission MFG Co.	Qualified	



NORTHEAST UTILITIES SERVICE COMPANY  
MILLSTONE NUCLEAR POWER STATION - UNIT 3

MECHANICAL EQUIPMENT ENVIRONMENTAL QUALIFICATION

LIST OF SPECIFICATIONS CONTAINING SAFETY-RELATED  
MECHANICAL EQUIPMENT

<u>Specification No.</u>	<u>Description</u>	<u>Vendor</u>	<u>Status</u>	<u>Remarks</u>
2362.750-177	Main Steam Isol Trip Valve	Sulzer Bros Inc.	Qualified	
2472.110-180	Main Steam Saf Valve	Dresser Ind.	Qualified	
2472.110-185	Control Valves	Fisher Cntl Co.	Outstanding	
2472.110-186	Safety & Relief Valves	Lonergan	Qualified	
2472.110-188	Mn Stm Press Rel Vlv	Fisher Cntl Co.	Qualified	
2472.210-190	Orifice Plates	Permutit Co.	No Nonmetallic	
2447.300-241	Emerg Diesel Generator	Colt Ind.	Included in IEEE qualification program	
2286.000-274	Elect. Heat Tracing	Thermon Mfg.	No Nonmetallic	No Category I nonmetallic component
2214.412-336	React Plant Comp Clg Pumps	Bingham Willamette	Qualified	
2190.430-339	Vent, Isol Btfly Vlv	Henry Pratt Co.	Qualified	
2214.413-446	Reac Plant Comp Cool Heat Exchanger	Yuba Heat Transfer	Outstanding	
2231.403-465	New Fuel Handling Crane	Dresser Ind.	No Nonmetallic	
2282.050-468	Forged SS Vlv 2.5 In or Lgr	Westinghouse	Qualified	
2262.350-472	Packless Met Dia Valves	Yarway Corp.	Qualified	
2362.850-476	FW Isolation Trip Vlv	Anchor Darling Co.	Qualified	
2362.050-483	Tilting Disc Check Valves	Anchor Darling	Outstanding	

NORTHEAST UTILITIES SERVICE COMPANY  
MILLSTONE NUCLEAR POWER STATION - UNIT 3

MECHANICAL EQUIPMENT ENVIRONMENTAL QUALIFICATION  
LIST OF SPECIFICATIONS CONTAINING SAFETY-RELATED  
MECHANICAL EQUIPMENT

<u>Specification No.</u>	<u>Description</u>	<u>Vendor</u>	<u>Status</u>	<u>Remarks</u>
2170.430-565	Install of Vent and A/C Systems	Northeastern Ventilating Co.	Qualified	
2282.400-568	Plug Valves (ASME III)	Atwood & Morrill Co.	Outstanding	37 valves are outstanding
2280.000-582	S&W Piping Classes	N/A	Outstanding	
2176.430-583	Backdraft & Press Rel Dmps	American Warming	Qualified	
2360.000-589	Y Strainers (ASME III)	Leslie Co.	Qualified	
2472.900-594	Air & M Oper Air Dmps	American Warming	Qualified	
2472.110-611	Inst. Valves & Man Valve Ass.	Circle Seal Corp.	Outstanding	
2474.030-624	Radiation Monitoring System	Kaman Sciences Corp.	Included in IEEE Qualification Program	
2176.430-648	Air Handling Units	Bahnsen Co.	Qualified	
2362.050-651	Carbon Steel Valv 2 1/2 In. and Large Manual & Motor Op.	Pacific Valves	Qualified	
2472.110-654	In-Line Solenoid Op Vlvs	Target Rock Corp.	Qualified	
2262.350-655	Forged CS & SS Globe Val 2 In. & Smaller	Yarway Corp.	Qualified	
2231.403-666	New Fuel Handling Crane	Kranco Inc.	No Nonmetallic	
2103.430-668	Tornado Dampers	Quality Air Design	Qualified	
2472.110-673	Excess Flow Check Valves	Dragon Valve	Qualified	



NORTHEAST UTILITIES SERVICE COMPANY  
MILLSTONE NUCLEAR POWER STATION - UNIT 3

MECHANICAL EQUIPMENT ENVIRONMENTAL QUALIFICATION  
LIST OF SPECIFICATIONS CONTAINING SAFETY-RELATED  
MECHANICAL EQUIPMENT

<u>Specification No.</u>	<u>Description</u>	<u>Vendor</u>	<u>Status</u>	<u>Remarks</u>
2282.050-676	SS Valves 2 1/2" and Larger	Pacific Valve	Qualified	
2400.000-680	Cable and Mech Penetration Fire Stops and Seals	Transco Products Inc.	Outstanding	
2472.600-686	HVAC Flow Switches	Fluid Components	Included In IEEE Qualification Program	
2282.150-713	Forged SS Vlvs 2 In and Smaller	Velan Valve	Qualified	
2362.150-714	Forged Carbon Steel Vlvs 2 In and Smaller	Veian Valve	Qualified	
2213.220-716	Upper-Reactor Cavity Neutron Shielding	B&B Insulation Inc.	No Nonmetallic	No Category 1 nonmetallic component
2200.000-914	Mechanical Equip. Erection	-	Outstanding	
2280.000-968	Field Fab and Erect of Pipe	-	Outstanding	

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: J.A. PATTON

SPECIFICATION NO.: 2240.000-001

SHT. NO.: CRS-1 OF 6

DATE: 10/4/84

PUMPS

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3CHS*P2A,B	Chem Pump/Boric Acid Transfer Pump	AB-02	0	SDS-1
3CHS*P3A,B,C	Pacific/CVCS Charging Pump	AB-03	0	SDS-2
3CHS*P6A,B,C	Pacific/CVCS Charging Pump Auxiliary Lube Oil Pump	AB-03	0	SDS-3
3CHS*P7A,B,C	Pacific/CVCS Charging Pump Lube Oil Pump (Shaft Driven)	AB-03	0	SDS-4
3RCS*P1A,B,C,D	Westinghouse/Reactor Coolant Pump	CS-01		SDS-5
3RHS*P1A,B	Ingersol/Residual Heat Removal Pump	ES-04	0	SDS-6
3SIH*P1A,B	Pacific/Safety Injection Pump	ES-02	0	SDS-7
3SIH*P4A,B	Pacific/S.I. Pump Lube Oil Pump (Shaft Driven)	ES-02	0	SDS-8

NOTE:

The electric motors for the pumps are evaluated under the Millstone Unit 3 IEEE Qualification Program

Q = Qualified  
N/A = Not Applicable  
0 = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: J.A. PATTON

SPECIFICATION NO.: 2240.000-001

SHT. NO.: CRS-2 OF 6

DATE: 10/4/84

PRESSURE VESSELS

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3CHS*BL1	Westinghouse/Boric Acid Blender	AB-02	Q	No Nonmetallics
3CHS*DEMIN 1A,B	Westinghouse/Mixed Bed Demineralizer	AB-06	Q	No Nonmetallics
3CHS*DEMIN 2	Westinghouse/Cation Bed Demineralizer	AB-06	Q	No Nonmetallics
3CHS*DEMIN 3A,B,C,D,E	Westinghouse/BTRS Demineralizer	AB-06	Q	No Nonmetallics
3CHS*E1	Joseph Oat/Regenerative Heat Exchanger	CS-01	O	SDS-9
3CHS*E2	Joseph Oat/Letdown Heat Exchanger	AB-06	O	SDS-9
3CHS*E3	Atlas/Excess Letdown Heat Exchanger	AB-06	O	SDS-9
3CHS*E4	Atlas/Seal Water Heat Exchanger	AB-06	O	SDS-9
3CHS*E5	Atlas/Moderating Heat Exchanger	AB-06	O	SDS-9
3CHS*E6	Atlas/Letdown Chiller Heat Exchanger	AB-06	O	SDS-9
3CHS*E7	Atlas/Letdown Reheat Heat Exchanger	AB-06	O	SDS-9
3CHS*E9A,B,C	Pacific/Charging Pump Lube Oil Cooler	AB-03	O	SDS-9
3CHS*FE154 3CHS*FE155 3CHS*FE156 3CHS*FE157	Westinghouse/RCP Seal Leakoff Flow Elements	CS-01	Q	No Nonmetallics
3CHS*FLT1	Pall Trinity/Seal Water Return Filter	AB-06		SDS-10

Q = Qualified  
N/A = Not Applicable  
O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: J.A. PATTON

SPECIFICATION NO.: 2240.000-001

SHT. NO.: CRS-3 OF 6

DATE: 10/4/84

PRESSURE VESSELS (Cont)

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3CHS*FLT2	Pall Trinity/Reactor Coolant Filter	AB-06	0	SDS-10
3CHS*FLT3A,B	Pall Trinity/Seal Water Injection Filter	AB-06	0	SDS-10
3CHS*FLT4	Pall Trinity/Boric Acid Filter	AB-06	0	SDS-10
3CHS*FLT5	Pall Trinity/Letdown Filter	AB-06	0	SDS-10
3CHS*RO24A,B,C	Westinghouse/Letdown Orifice	CS-01	Q	No Nonmetallics
3CHS*RO46A,B,C	Westinghouse/Charging Pump Minimum Flow Orifice	AB-03	Q	No Nonmetallics
3CHS*TK2	Westinghouse/Volume Control Tank	AB-02	0	SDS-11
3RCS*RV1	Westinghouse/Reactor Vessel	CS-01	Q	No Nonmetallics
3RCS*SG1A,B,C,D	Westinghouse/Steam Generator	CS-01	0	SDS-12
3RCS*TK1	Westinghouse/Pressurizer	CS-01	0	SDS-13
3RHS*E1A,B	Joseph Oat/Residual Heat Removal Heat Exchanger	ES-04	0	SDS-9
3RHS*E2A,B	RHR Pump Seal Cooler	ES-04	0	SDS-9
3SIH*E2A,B	Pacific/SI Pump Lube Oil Cooler	ES-02	0	SDS-9
3SIH*RO33A,B	Westinghouse/S.I. Pump Minimum Flow Orifice	ES-02	Q	No Nonmetallics
3SIL*TK1 A,B,C,D	Westinghouse/S.I. Accumulators	CS-01	0	SDS-14

Q = Qualified  
N/A = Not Applicable  
0 = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: J.A. PATTON

SPECIFICATION NO.: 2240.000-001

SHT. NO.: CRS-4 OF 6

DATE: 10/4/84

VALVES

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3CHS*HCV184	Copes - Vulcan Inc./RCS Combined Loop Fill Valve	AB-09	O	SDS-15
3CHS*HCV190A,B	Target Rock/Modulating Valve	AB-03	Q	No Nonmetallics
3CHS*MV8111B,C	Velan Engineering/Motor Op. Globe Valve	AB-03	O	SDS-16
3CHS*MV8116	Velan Engineering/Motor Op. Globe Valve	AB-09	O	SDS-16
3CHS*MV8438A,B,C	Westinghouse/Motor Op. Gate Valve	AB-03	O	SDS-16
3CHS*MV8468A,B	Westinghouse/Motor Op. Gate Valve	AB-03	O	SDS-16
3CHS*MV8507A,B	Westinghouse/Motor Op. Gate Valve		O	SDS-16
3CHS*MV8511A,B 3CHS*MV8512A,B	Velan Engineering/Motor Op. Globe Valve	AB-03	O	SDS-16
3CHS*RV8510A,B	Crosby/Miniflow Relief Valve	AB-03	Q	No Nonmetallics
3CHS*V062	Kerotest/Spring Loaded Check Valve	AB-03	Q	No Nonmetallics
3CHS*V684,685,686	Ful-Flo/Charging Pump L.O. Relief Valve	AB-03	Q	No Nonmetallics
3CHS*V740,741,742 3CHS*V743,744,745	Pacific/Check Valve	AB-03	Q	No Nonmetallics

Q = Qualified  
N/A = Not Applicable  
O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: J.A. PATTON

SPECIFICATION NO.: 2240.000-001

SHT. NO.: CRS-5 OF 6

DATE: 10/4/84

VALVES (Cont)

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3FWS*FCV510 3FWS*FCV520 3FWS*FCV530 3FWS*FCV540	Copes - Vulcan Inc./Feedwater Control Valve	MS-01	0	SDS-17
3RCS*AV8036A, B, C, D 3RCS*AV8037A, B, C, D	Copes - Vulcan/Loop Fill/Drain Valves	CS-01	0	SDS-18
3RCS*HCV442A, B	Target Rock/Modulating Valve	CS-01	Q	No Nonmetallics
3RCS*MV8001A, B, C, D 3RCS*MV8002A, B, C, D	Westinghouse/Main Coolant Isolation Valve	CS-01	0	SDS-16
3RCS*MV8003A, B, C, D	Copes-Vulcan/8 in. Reactor Coolant Loop Bypass Valve	CS-01	0	SDS-16
3RCS*MV8098	Velan Engineering/Reactor Vessel Head Vent Excess Letdown Valves	CS-01	0	SDS-16
3RCS*PCV455A 3RCS*PCV456	Garrett/Power Operated Relief Valve	CS-01	0	SDS-19
3RCS*PCV455B, C	Fisher/Pressurizer Spray Valves	CS-01	0	SDS-20
3RCS*SV8010A, B, C	Crosby/Pressurizer Safety Valves	CS-01	0	SDS-21
3RCS*SV8095A, B 3RCS*SV8096A, B	Target Rock/Head Vent Isolation Valves	CS-01	Q	No Nonmetallics

Q = Qualified  
N/A = Not Applicable  
0 = Outstanding



MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: J.A. PATTON

SPECIFICATION NO.: 2240.000-001

SHT. NO.: CRS-6 OF 6

DATE: 10/4/84

VALVES (Cont)

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3RCS*V974, 975, 976 3RCS*V977, 979, 980, 3RCS*V981, 982, 984, 3RCS*V985, 986, 987, 3RCS*V989, 990, 991, 3RCS*V992	Westinghouse/Main Coolant Isolation Valve Disc Pressurization Valves	CS-01	O	SDS-22
3S11 *HCV943A, B	Target Rock/S.I. Accumulator Vent Valves	CS-01	Q	No Nonmetallics
3S1L*SV8875A, B, C, D, E, F, G, H	Target Rock/S.I. Accumulator Nitrogen Supply Valves	CS-01	Q	No Nonmetallics

NOTE:

The Solenoid operators and motor operators are evaluated under the Millstone Unit 3 IEEE Qualification Program.  
Lubricants used for assembly of equipment listed as having no nonmetallics are not evaluated.

Q = Qualified  
N/A = Not Applicable  
O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R.E. CONLON

SPECIFICATION NO.: 2214.702-006

SHEET NO.: CRS-1 OF 1

DATE: 10/22/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3SIC*PIA/PIB	Goolds Pumps, Inc.	FP-02	Q	

Q - Qualified

N/A - Not Applicable

O - Outstanding



MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: S. McINALL

SPECIFICATION NO.: 2214.602-01/0

SHT. NO.: CRS-1 OF 1

DATE: 06/14/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3QSS*P3A,B	Goilds Pumps/Quench Spray Pump	ES-02	Q	

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPLIED BY: S. McINALL

SPECIFICATION NO.: 2214.432-042

SHT. NO.: CRS-1 OF 1

DATE: 07/19/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3CCE*P1A,B	Goulds Pumps/Charging Pump Cooling PP.	AB-25	Q	
3CCI*P1A,B	Goulds Pumps/Safety Inj. PP. Cooling PP.	ES-02	Q	
3HVK*P1A,B	Goulds Pumps/Cont. Bldg. Chilled Water Pump	CB-04	Q	Mild Environment
3SWP*P2A,B	Goulds Pumps/Cont. Bldg. A/C Booster Pump	CB-04	Q	Mild Environment
3SWP*P3A,B	Goulds Pumps/MCC and Rod Control Area A/C Booster	AB-33	Q	

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: S MCNALL

SPECIFICATION NO.: 2214.802-044

SHT. NO.: CRS-1 OF 1

DATE: 7/10/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3RSS*PIA,B,C,D	Bingham-Willamette Company Containment Recirculation Pump	ES-05	Q	

Q - Qualified

N/A - Not Applicable

O - Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: K. MANKARIOUS

SPECIFICATION NO.: 2214.900-075

SHT. NO.: CRS-1 OF 1

DATE: 6/18/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3HCS*RBNR1A,B	Rockwell (Atomics) International/ Hydrogen Recombiner	HR-01	O	Only outstanding item is the gaskets in the blower assembly

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. E. CONLON

SPECIFICATION NO.: 2221.180-127

SHT. NO.: CRS-1 OF 1

DATE: 6-29-84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
Various	Paul-Monroe Hydraulics Inc./ Snubbers	CS-01	Q	

Q = Qualified

N/A = Not Applicable

O = Outstanding



MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2170.430-140

SHT. NO.: CRS-1 OF 1

DATE: 6/15/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3HVC*FN3A,B	Buffalo Forge Axial Flow Fan	CB-01	Q	Mild Environment
3HVP*FN1A,B,C,D	Buffalo Forge Axial Flow Fan	DG-01	Q	Mild Environment
3HVQ*FN5A,B & 6A,B	Buffalo Forge Axial Flow Fan	ES-01	Q	Mild Environment
3HVR*FN6A,B & 10A,B	Buffalo Forge Axial Flow Fan	AB-04	Q	
3HVR*FN13A,B & 14A,B	Buffalo Forge Axial Flow Fan	AB-04	Q	No Nonmetallic Parts
3HVV*FN1C,D	Buffalo Forge Axial Flow Fan	MS-01	Q	No Nonmetallic Parts
3HVY*FN2A,B	Buffalo Forge Axial Flow Fan	CW-01	Q	Mild Environment

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2176.430-141

SHT. NO.: CRS-1 OF 1

DATE: 6/15/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3HVC*FN1A,B	Buffalo Forge Centrifugal Flow Fan	CB-05	Q	Mild Environment
3HVC*FN2A,B&7A,B	Buffalo Forge Centrifugal Flow Fan	CB-04	Q	Mild Environment
3HVC*FN9A,B,C,D,E	Buffalo Forge Centrifugal Flow Fan	CB-01	Q	Mild Environment
3HVR*FN12A,B	Buffalo Forge Centrifugal Flow Fan	AB-16	Q	

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34  
 NAME: MILLSTONE UNIT 3  
 CLIENT: NORTHEAST UTILITIES SERVICE COMPANY  
 COMPILED BY: T.M. RILEY

SPECIFICATION NO.: 2282.050-153  
 SHT. NO.: CRS-1 OF 3  
 DATE: 6/6/84

Mark No.	Vendor/Description	Zone	Status	Remarks
VGM150-X-1	Melworth/Atoyco Gate Valve (3", 6")	Various	Q	
VGM15-Y-2	Gate Valve (3", 4", 6", 8", 10")	Various	Q	
VGM150-X-2	Gate Valve (3", 4", 6")	Various	Q	
VGM15-Y-3	Gate Valve (6", 10", 12")	Various	Q	
VGM150-X-2-MO	Gate Valve (3", 6", 10")	Various	Q	
VGM30-P-2	Gate Valve (3")	Various	Q	
VGM60-Y-2	Globe Valve (3")	Various	Q	
VGM15-E-2	Globe Valve (4")	Various	Q	
VGM30-S-3	Globe Valve (3")	Various	Q	
VGM15-X-3	Check Valve (10")	Various	Q	
VGM150-X-2MO	Gate Valve (3", 4")	Various	Q	
VGM15-Y-2-MO	Gate Valve (4", 6", 8")	Various	Q	

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: T.M. RILEY

SPECIFICATION NO.: 2282.050-153

SHT. NO.: CRS-2 OF 3

DATE: 8/8/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
	Walworth/Aloyco			
VCW015-X-2	Check Valve (3", 4", 8", 10", 12")	Various	Q	
VCW060-B-2	Check Valve (3", 10", 12")	Various	Q	
VCW060-X-2	Check Valve (8")	Various	Q	
VCW015-X-3	Check Valve (3", 10")	Various	Q	
VCW030-S-2	Check Valve (3")	Various	Q	
VCW030-S-3	Check Valve (3")	Various	Q	

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: T.M. RILEY

SPECIFICATION NO.: 2262.050-153

SHT. NO.: CRS-3 OF 3

DATE: 6/8/84

Mark No.	Vendor/Description	Zone	Status	Remarks
VGM060-X-2-GO	Welworth/Alloyco Gate Valve (10")	Various	Q	
VOM150-X-2-GO	Globe Valve (3")	Various	Q	
VGM060-X-2	Gate Valve (8")	Various	Q	

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: T. M. RILEY

SPECIFICATION NO.: 2282.150-154

SHT. NO.: CRS-1 OF 1

DATE: 8/9/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
	Dresser Industries			
Various	Check, gate, and globe valves	Various	Q	
VSS150-AA-2 {3RCS*V180} {3RCS*V181} {3RCS*V182}	Sealed globe valves	CS-01	Q	

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N/A = Not Applicable  
O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

SPECIFICATION NO.: 2262.350-158  
SHT. NO.: CRS-1 OF 5  
DATE: 8/20/84

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: T. M. RILEY

Mark No.	Vendor/Description	Zone	Status	Remarks
3CHS*V280, 281, 283, 285, 297, 335, 336, 338, 340, 342, 826, 927	ITT Grinnell/Diaphragm Valves VDWO15-YY-3, VDSO15-E-3	AB-02	Q	SDS-1
2CHS*V329, 331	ITT Grinnell/Diaphragm Valves VDWO15-YY-3, 4	AB-04	Q	SDS-1
3CHS*V339, 343, 359, 629, 783, 784, 786, 820, 921, 922, 923	ITT Grinnell/Diaphragm Valves VDSO15-E-3	AB-07	Q	SDS-2
3CHS*V356, 357, 358, 817, 918	ITT Grinnell/Diaphragm Valves VDSO15-E-3	AB-33	Q	SDS-1
3CHS*V288, 292, 345, 347, 349, 352, 353, 878	ITT Grinnell/Diaphragm Valves VDSO15-E-3, VDWO15-YY-3	AB-33	Q	SDS-1
3CHS*V623, 628	ITT Grinnell/Diaphragm Valves VDSO15-E-3	AB-35	Q	SDS-1
3CHS*V287, 344, 346, 348, 350, 351, 289, 877	ITT Grinnell/Diaphragm Valves VDSO15-E-3, VDWO15-YY-3	AB-35	Q	SDS-1
3CHS*V298, 299	ITT Grinnell/Diaphragm Valves VDSO15-E-3	AB-20	Q	SDS-1
3CHS*V362, 364, 696, 918	ITT Grinnell/Diaphragm Valves VDSO15-E-3	AB-20	Q	SDS-1

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

SPECIFICATION NO.: 2282.350-158

SHT. NO.: CRS-2 OF 8

DATE: 8/20/84

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: T. M. RILEY

Mark No.	Vendor/Description	Zone	Status	Remarks
3CHS*V300, 303	ITT Grinnell/Diaphragm Valves VDS015-E-3, VDS030-A-2	AB-03	Q	SDS-2
3CHS*V787	ITT Grinnell/Diaphragm Valves VDS015-E-3	AB-12	Q	SDS-2
3CHS*V304, 308, 313, 314, 317, 541, 561, 562, 563, 564, 933, 963	ITT Grinnell/Diaphragm Valves VDS015-E-2, 3 VDS030-A-2 VDS015-YY-2	AB-02	Q	SDS-3
3CHS*V246, 247, 248, 322, 323, 326, 307, 318, 565, 617, 618, 619, 620, 621, 788, 950, 952, 954, 729, 932, 953, 728	ITT Grinnell/Diaphragm Valves VDS015-E-2, 3 VDS030-A-2	AB-02	Q	SDS-3
3CHS*V687	ITT Grinnell/Diaphragm Valves VDS030-A-2	AB-07	Q	SDS-3
3CHS*V305, 540	ITT Grinnell/Diaphragm Valves VDS015-YY-2 VDS015-E-2	AB-03	Q	SDS-3
3CHS*V622	ITT Grinnell/Diaphragm Valves VDS015-E-2	AB-29	Q	SDS-3
3CHS*V550, 552	ITT Grinnell/Diaphragm Valves VDS015-E-2	AB-20	Q	SDS-3

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N/A = Not Applicable

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

SPECIFICATION NO.: 2282.350-158  
SHT. NO.: C85-3 OF 5  
DATE: 8/20/84

JOB NO.: 12179-24

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: T. M. RILEY

Mark No.	Vendor/Description	Zone	Status	Remarks
3CHS*V028, 030, 143, 144, 147, 127, 129	ITT Grinnell/Diaphragm Valves VD5030-A-3	AB-10	Q	SDS-3
3CHS*V148, 149, 150, 151, 152, 153, 154, 156, 157, 208, 209, 560, 642, 643, 720, 721, 722, 723	ITT Grinnell/Diaphragm Valves VD5030-A-3	AB-10	Q	SDS-3
3CHS*V554, 555, 585, 727, 751, 752, 753, 789, 851, 605, 683, 790, 866, 875, 876, 978, 986	ITT Grinnell/Diaphragm Valves VD5015-E-2 VD5030-A-3	AB-06	Q	SDS-3
3CHS*V276, 277, 278, 279, 280, 281, 324, 325	ITT Grinnell/Diaphragm Valves VD5030-A-2	AB-03	Q	SDS-3
3CHS*V035, 036, 237, 237, 965	ITT Grinnell/Diaphragm Valves VDW030-A-2, 3 VD50-J-A-2	AB-02	Q	SDS-3
3CHS*V548, 756	ITT Grinnell/Diaphragm Valves VD5015-E-2	AB-08	Q	SDS-3
3CHS*V537, 538, 539	ITT Grinnell/Diaphragm Valves VDW015-YY-2	AB-08	Q	SDS-3
3CHS*V120, 122, 123	ITT Grinnell/Diaphragm Valves VDW030-A-3	AB-07	Q	SDS-3

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N/A = Not Applicable

0 = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34  
 NAME: MILLSTONE UNIT 3  
 CLIENT: NORTHEAST UTILITIES SERVICE COMPANY  
 COMPILED BY: T. M. RILEY

SPECIFICATION NO.: 2282.360-158  
 SHT. NO.: CRS-4 OF 5  
 DATE: 8/20/84

Mark No.	Vendor/Description	Zone	Status	Remarks
3CHS*V070, 071	ITT Grinnell/Diaphragm Valves VDS030-A-3	AB-26	Q	SDS-13
3CHS*V534, 535, 536	ITT Grinnell/Diaphragm Valves VDS015-E-2	AB-14	Q	SDS-13
3CHS*V018, 020, 032, 033, 566	ITT Grinnell/Diaphragm Valves VDM030-A-3	AB-14	Q	SDS-12
3CHS*V073, 074, 253, 254, 256, 258, 548, 553, 754, 855, 956, 957, 257, 260, 361	ITT Grinnell/Diaphragm Valves VDS015-E-2, 3	AB-14	Q	SDS-13
3CHS*V431, 547, 587, 588, 602, 606, 607, 612, 613, 757, 758, 791, 900, 901, 977, 724	ITT Grinnell/Diaphragm Valves VDS015-E-2 VDS030-A-3	CS-01	Q	SDS-4
3CCI*V004, 011	ITT Grinnell/Diaphragm Valves VDS015-C-3	ES-02	Q	SDS-7
3SIH*V838	ITT Grinnell/Diaphragm Valves VDS015-E-2	ES-03	Q	SDS-6
3SIH*V079, 080, 973, 874	ITT Grinnell/Diaphragm Valves VDS015-E-2	ES-02	Q	SDS-6
3CVS*V980, 981, 982	ITT Grinnell/Diaphragm Valves VDS015-E-2	AB-06	Q	SDS-5

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

SPECIFICATION NO.: 2282.350-158  
SHT. NO.: CRS-5 OF 8  
DATE: 8/20/64

JOB NO.: 12179.34  
NAME: MILLSTONE UNIT 3  
CLIENT: NORTHEAST UTILITIES SERVICE COMPANY  
COMPILED BY: T. M. RILEY

Mark No.	Vendor/Description	Zone	Status	Remarks
3GWS*V951 952	ITT Grinnell/Diaphragm Valves VDS030-A-3	AB-27	Q	SDS-9
3HCS*V002, 003, 004, 005, 006, 009, 010, 011, 012, 013, 016, 017, 020, 021	ITT Grinnell/Diaphragm Valves VDS015-E-2	1R-01	Q	SDS-11
3HCS*V015, 018, 019, 022	ITT Grinnell/Diaphragm Valves VDS015-E-2	CS-01	Q	SDS-10
3CVS*V013 3DGS*V824 3VRS*V992	ITT Grinnell/Diaphragm Valves VDS015-E-2	CS-01	Q	SDS-8

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: T.M. RILEY

SPECIFICATION NO.: 2362.050-161

SHT. NO.: CRS-1 OF 2

DATE: 07/25/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3CCP*V023, 025, 033, 036, 042, 057, 060, 061, 069, 072, 078, 296, 297	Walworth/Gate Valves VGW015-A-3	Various	Q	
3FWA*MOV35A,B,C,D 3FWA*V002, 005, 010, 016, 019, 024, 060, 064, 066	Walworth/Gate Valves VGW090-B-3, VGW015-A-3	Various	Q	
3MSS*MOV17A,B,D 3MSS*V039 3MSS*MOV18A,B,C,D	Walworth/Gate, Globe Valves VGW090-B-3	Various	Q	
3HVK*V001-4, 6-10, 12, 13, 16, 17, 19, 29, 31-33, 36-42, 44-46, 48, 50, 51, 57, 61, 63, 65, 67, 69, 70, 71, 75, 76, 921, 922, 939-942, 944-951, 957-960, 962-965, 973, 974, 978, 992-994, 996- 999	Walworth/Gate, Globe, and Check Valves	CB	Q	Mild environment
3FWA*V031, 32, 33, 37, 41, 45	Walworth/Gate and Check Valves	ES-07	Q	Mild Environment
3CCP*V003	Walworth/Check Valve VCW015-A-3	AB-26	Q	
3CCP*V060, 3FWA*V060	Walworth/Check Valves VCW015-A-2,3	Various	Q	No nonmetallics

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: T.M. RILEY

SPECIFICATION NO.: 2362.050-161

SHT. NO.: CRS-2 OF 2

DATE: 07/25/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3CCP*V024, 043, 058, 068, 079	Walworth/Globe Valves VOW015-A-2,3	Various	Q	
3FWS*MOV35A,B,C,D	Walworth/SGFW Control Viv Isol VGW090-B-3MO	MS-01	Q	
3FWS*V017, 24, 31	Walworth/Gate Valves VGW090-B-3	MS-01	Q	
3FWA*V004, 18	Walworth/Gate Valves VGW090-B-3	ES-06	Q	

NOTE:

Motor operators are included under the IEEE qualification program and therefore are not addressed in this data package.

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: S. MCINALL

SPECIFICATION NO.: 2362.150-162

SHT. NO.: CRS-1 OF 1

DATE: 08/14/84

<u>I.D. No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
VCS060-A-2,3,4	Dresser/Check Valves	Various	Q	No nonmetallics
VCS150-C-2,4	Dresser/Check Valves	Various	Q	No nonmetallics
VCS060-B-2,3,4	Dresser/Gate Valves	Various	Q	
VOS060-C-2,3,4	Dresser/Globe Valves	Various	Q	
VOS150-F-2,3,4	Dresser/Globe Valves	Various	Q	
VSS150-BB-2	Dresser/Diaphragm Seal Globe Valves	CS-01	Q	

NOTE: Valve identification numbers are used in lieu of individual mark numbers

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N/A = Not Applicable

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: S. MCINALL

SPECIFICATION NO.: 2362.650-172

SHT. NO.: CRS-1 OF 1

DATE: JUNE 15, 1984

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3CCP*V001	TRW Mission/Check Valve 18"	AB-26	Q	
3CCP*V002	TRW Mission/Check Valve 18"	AB-26	Q	
3SWP*V001	TRW Mission/Check Valve 30"	CW-01	Q	Mild Environment
3SWP*V003	TRW Mission/Check Valve 30"	CW-01	Q	Mild Environment
3SWP*V005	TRW Mission/Check Valve 30"	CW-01	Q	Mild Environment
3SWP*V007	TRW Mission/Check Valve 30"	CW-01	Q	Mild Environment
3SWP*V010	TRW Mission/Check Valve 6"	CB-05	Q	Mild Environment
3SWP*V043	TRW Mission/Check Valve 6"	CB-05	Q	Mild Environment
3SWP*V104	TRW Mission/Check Valve 4"	CB-05	Q	Mild Environment
3SWP*V109	TRW Mission/Check Valve 4"	CB-05	Q	Mild Environment

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: G. POWERS

SPECIFICATION NO.: 2362.750-177

SHT. NO.: CRS-1 OF 1

DATE: 6/22/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
	Sulzer Bros, Ltd./			
3MSS*CTV27A,B,C,D (VOW090-B-2)	Main Stm Isol Trip Vlv	MS-01	Q	
3MSS*V938	Check Valve	MS-01	Q	
3MSS*V939	Check Valve	MS-01	Q	
3MSS*V940	Check Valve	MS-01	Q	
3MSS*V941	Check Valve	MS-01	Q	
3MSS*V942	Check Valve	MS-01	Q	
3MSS*V952	Check Valve	MS-01	Q	
3MSS*V953	Check Valve	MS-01	Q	
3MSS*V954	Check Valve	MS-01	Q	
3MSS*V955	Check Valve	MS-01	Q	
3MSS*V956	Check Valve	MS-01	Q	
3MSS*V966	Check Valve	MS-01	Q	
3MSS*V967	Check Valve	MS-01	Q	
3MSS*V968	Check Valve	MS-01	Q	
3MSS*V969	Check Valve	MS-01	Q	
3MSS*V970	Check Valve	MS-01	Q	
3MSS*V980	Check Valve	MS-01	Q	
3MSS*V981	Check Valve	MS-01	Q	
3MSS*V982	Check Valve	MS-01	Q	
3MSS*V983	Check Valve	MS-01	Q	
3MSS*V984	Check Valve	MS-01	Q	

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N/A = Not Applicable

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: G POWERS

SPECIFICATION NO.: 2472.110-180

SHT. NO.: CRS-1 OF 1

DATE: 7/10/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
	Dresser Industries/			
3MSS*RV22A,B,C,D	Main Steam Safety Valves	MS-01	Q	
3MSS*RV 23A,B,C,D	Main steam Safety Valves	MS-01	Q	
3MSS*RV24A,B,C,D	Main Steam Safety Valves	MS-01	Q	
3MSS*RV25A,B,C,D	Main Steam Safety Valves	MS-01	Q	
3MSS*RV26A,B,C,D	Main Steam Safety Valve	MS-01	Q	

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

SPECIFICATION NO.: 2472.110-186

NAME: MILLSTONE UNIT 3

SHT. NO.: CRS-1 OF 1

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

DATE: 7/13/84

COMPILED BY: K. Mankarious

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
	J.E. Lonergan Co./			
All valves except the following:	Relief Valves	Various	Q	SDS-1
3CHS*RV8120	Relief Valves	AB-07	Q	SDS-2
3CHS*RV8121	Relief Valves	CS-02	Q	SDS-3
3CHS*RV8123	Relief Valves	AB-08	Q	SDS-4
3CHS*RV8124	Relief Valves	AB-03	Q	SDS-5
3SIL*RV8855A,B,C,D	Relief Valves	CS-01	Q	SDS-8
3SLB*RV04	Relief Valves	*	Q	SDS-6
3SLB*RV05	Relief Valves	*	Q	SDS-6
3SLB*RV06	Relief Valves	*	Q	SDS-6
3SLB*RV11	Relief Valves	*	Q	SDS-6
3SLB*RV12	Relief valves	*	Q	SDS-6
3SLR*RV01	Relief Valves	*	Q	SDS-7
3SLR*RV02	Relief Valves	*	Q	SDS-7
3SLR*RV03	Relief Valves	*	Q	SDS-7
3SLR*RV04	Relief Valves	*	Q	SDS-7
3SLR*RV05	Relief Valves	*	Q	SDS-7
3SLR*RV06	Relief Valves	*	Q	SDS-7
3SLR*RV07	Relief Valves	*	Q	SDS-7

\*See applicable SDS for environmental zone information

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N/A = Not Applicable  
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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: G. POWERS

SPECIFICATION NO.: 2472.110-188

SHT. NO.: CRS-1 OF 1

DATE: 8/15/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3MSS*PV20A,B,C,D	Fisher Controls Co./ Main Steam Pressure Relief Valve	MS-01	Q	

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N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R.E. CONLON

SPECIFICATION NO.: 2214.412-336

SHT. NO.: CRS-1 OF 1

DATE: SEPTEMBER 21, 1984

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3CCP*PIA,B,C	Bingham-Willamette Company	AB-26	Q	

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: K. MANKARIOUS

SPECIFICATION NO.: 2190.430-339

SHT. NO.: CRS-1

DATE: 6/14/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3HVC*AOV20 & 21 3HVC*AOV22, 23, 25, & 26	Henry Pratt Co./ Control Room Isolation Valves	CB-05	Q	Mild environment
3HVU*V1 & V3 (CTV32A, B)	Henry Pratt Co./Reactor Containment Purge System Isolation Valves	AB-04	Q	
3HVU*V2 & V4 (CTV33A, B)	Henry Pratt Co./Reactor Containment Purge System Isolation Valves	CS-02	Q	
3HVU*V5	Henry Pratt Co./Reactor Containment Pressurization Valve VVF015-C-2	AB-04	Q	
3HVR*42A, B	Henry Pratt Co./Gaseous Discharge Unit 1 Stack	YD-01	Q	Mild environment

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N/A = Not Applicable

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: K. MANKARIOUS

SPECIFICATION NO.: 2282.050-468

SHT. NO.: CRS-1 OF 2

DATE: 8/20/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3CHS*V46,47,48	Westinghouse Electric Corp./ Swing Check Valves	AB-03	Q	
3CHS*V58	Westinghouse Electric Corp./ Swing Check Valves	CS-02	Q	
3RCS*V26,30,31,32, 69,71,102,107, 142,146,147,148	Westinghouse Electric Corp./ Swing Check Valves	CS-01	Q	
3SIL*V15,17,19,21	Westinghouse Electric Corp./ Swing Check Valves	CS-01	Q	
3SIL*V26,28	Westinghouse Electric Corp./ Swing Check Valves	CS-02	Q	
3SIL*V984,985,986,987	Westinghouse Electric Corp./ Swing Check Valves	CS-01	Q	
3SIH*V5	Westinghouse Electric Corp./ Swing Check Valves	CS-02	Q	
3SIH*V13,17	Westinghouse Electric Corp./ Swing Check Valves	ES-02	Q	

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: K. MANKARIOUS

SPECIFICATION NO.: 2282.050-468

SHT. NO.: CRS-2 OF 2

DATE: 8/31/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3SIL*MV8808A,B,C,D	Westinghouse Electric Corp./ Motor Oper Gate Valves	CS-01	Q	Limiterque Operators are included under IEEE qualification program
3RHS*MV8701A, 8702B	Westinghouse Electric Corp./ Motor Oper Gate Valves	CS-02	Q	Limiterque Operators are included under IEEE qualification program
3RHS*MV8701C, 8702C	Westinghouse Electric Corp./ Motor Oper Gate Valves	CS-01	Q	Limiterque Operators are included under IEEE qualification program

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N/A = Not Applicable

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: G. WEBSTER

SPECIFICATION NO.: 2262.350-472

SHT. NO.: CRS-1 OF 1

DATE: 6/26/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
Various	Yarway Corp/Sealed Globe Valves	Various	Q	See SDS-1

NOTE: Lubricants in this specification are used in the limitorque electric motor valve actuators and are thus qualified under IEEE qualification program. No Mobil equivalent is necessary.

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N/A = Not Applicable

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHCAST UTILITIES SERVICE COMPANY

COMPILED BY: G. POWERS

SPECIFICATION NO.: 2362.850-476

SHT. NO.: CRS-1 OF 1

DATE: JUNE 14, 1984

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
	Anchor/Darling Valve Company			
3FWS*CTV41A,B,C,D	Feedwater Isolation Valves	MS-01	Q	

NOTE: The Hydraulic Actuator of the valve is qualified under the IEEE qualification program.

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2170.430-565

SHT. NO.: CRS- 1 OF 3

DATE: 10/3/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
Insulation for 3EGS*EG-A, B and 3HVP*FN1A, B, C, D Systems	Owens Corning Fiberglass Corp. Intake Insulation	DG-01	Q	Mild Environment
Insulation for 3HVY*FN2A, B System	Owens Corning Fiberglass Corp. Intake and Ductwork Insulation	CW-01	Q	Mild Environment
Insulation for 3HVQ*FN5A, B System	Owens Corning Fiberglass Corp. Intake Insulation	ES-01	Q	Mild Environment
Insulation for 3HVC*ACUS1A, B and 2A, B Systems	Owens Corning Fiberglass Corp. Intake and Ductwork Insulation	CB-05	Q	Mild Environment
Insulation for 3HVC*ACUS3A, B 4A, B and 3HVC*FN3A, B Systems	Owens Corning Fiberglass Corp. Intake and Ductwork Insulation	CB-01	Q	Mild Environment
Insulation for 3HVR*ACUS1A, B System	Owens Corning Fiberglass Corp. Ductwork Insulation	AB-19, 21, & 22	Q	
Insulation for 3HVR*FN14A, B System	Owens Corning Fiberglass Corp. Intake Insulation	AB-04	Q	
Category I Ductwork	Supply and Exhaust	Various	Q	
3HVC*DMPF1 thru 54 3HVQ*DMPF1 thru 26 3HVR*DMPF1 thru 64 3HVZ*DMPF1 thru 3	Air Balance Inc. and Ruskin Mfg. Co. Fire Dampers	Various	Q	No Nonmetallic Parts

Q = Qualified

N/A = Not Applicable

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2170.430-565

SHT. NO.: CRS- 2 OF 3

DATE: 10/3/84

Mark No.	Vendor/Description	Zone	Status	Remarks
Flexible Connection for 3HVC*FN1A, B, 2A, B, 3A, B, 7A, B, and 9A, B, C, D, E 3HVC*ACUS1A, B, 2A, B, 3A, B, and 4A, B Systems	Ventfabrics Inc. Flexible Connections	CB-01 CB-04 CB-05	Q	Mild Environment
Flexible Connection for 3HVP*FN1A, B, C, D Systems	Ventfabrics Inc. Flexible Connection	DG-01	Q	Mild Environment
Flexible Connection for 3HVQ*FN5A, B, 6A, B 3HVQ*ACUS1A, B, 2A, B, Systems	Ventfabrics Inc. Flexible Connections	ES-01	Q	
Flexible Connection for 3HVR*FN6A, B, 10A, B, 13A, B and 14A, B Systems	Ventfabrics Inc. Flexible Connections	AB-04	Q	
Flexible Connection for 3HVR*FN12A, B Systems	Ventfabrics Inc. Flexible Connections	AB-16	Q	
Flexible Connection for 3HVR*ACU1A, B Systems	Ventfabrics Inc. Flexible Connections	AB-21	Q	
Flexible Connection for 3HVV*FN1C, D Systems	Ventfabrics Inc. Flexible Connections	MS-01	Q	

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2170.430-565

SHT. NO.: CRS- 3 OF 3

DATE: 10/3/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
Flexible Connection for 3HVY*FN2A, B Systems	Ventfabrics Inc. Flexible Connections	CW-01	Q	Mild Environment
Flexible Connection for Ductwork Systems	Ventfabrics Inc. Flexible Connections	ES-05	Q	
Access and Inspection Doors	Ventfabrics Inc. Door Gaskets	Various	Q	
3HVC*FLT2, 3, 4A, B	American Air Filter	CB-01 CB-04	Q	Mild Environment
3HVQ*FLT3	American Air Filter	ES-01	Q	
3HVR*FLT4A, B	American Air Filter	AB-04	Q	

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2282.400-568

SHT. NO.: CRS-1 OF 5

DATE: 7/19/84

Mark No.	Vendor/Description	Zone	Status	Remarks
3CCP*V877-880	Tuflines/Plug Valve (VPS015-E-3)	CS-01	Q	See SDS-1 and EAS-1
3CHS*V21-24, 26, 27, 91-93, 95-103, 105, 107, 108, 110, 132, 134, 136, 138, 140, 188, 189, 192-197, 199, 200, 202-205, 213-224, 226, 227, 229-233, 235, 236, 569-576	Tuflines/G.O. Plug Valve (VPW030-E-3-G0)	AB-14	Q	See SDS-2 and EAS-2
3CHS*V117, 118, 239, 244, 577-579	Tuflines/Plug Valve (VPW030-E-3)	AB-14	Q	See SDS-2 and EAS-2
3CHS*V88-90, 104, 106, 109, 111, 112, 190, 191, 210-212	Tuflines/G.O. Plug Valve (VPW030-E-3-G0)	AB-28	Q	See SDS-3 and EAS-3
3CHS*V967-971, 980- 985	Tuflines/Plug Valve (VPW030-E-3)	AB-28	Q	See SDS-3 and EAS-3
3CHS*V794-797, 799, 800	Tuflines/Plug Valve (VPW030-E-2)	AB-07	Q	See SDS-4 and EAS-4
3CMS*V994, 995, 998, 999	Tuflines/Plug Valve (VPS015-AA-3)	AB-04	Q	See SDS-5 and EAS-5
3DAS*V924 3PGS*V948 3SFC*V863, 864	Tuflines/Plug Valve (VPS015-AA-2)	CS-02	O	See SDS-6
3EGA*V996-999	Tuflines/Plug Valve (VPS030-D-3)	DG-01	Q	Mild Environment

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2282.400-568

SHT. NO.: CRS-2 OF 5

DATE: 7/19/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3SWP*V121-123, 133-135, 375-377	Tufline/Plug Valve (VPF015-A-3)	DG-01	Q	Mild Environment
3HVH*AOV136A,B	Tufline/A.O. Plug Valve (VPW015-D-3-A0)	SB	Q	Mild Environment
3SFC*V63-70, 75, 76, 877, 878, 893-897, 924, 925, 927, 928, 984	Tufline/Plug Valve (VPF015-AA-3)	FB-02	Q	See SDS-7
3SFC*V71-74	Tufline/Plug Valve (VPF015-AA-3-G0)	FB-02	Q	See SDS-7
3SWP*V18-21, 51-54	Tufline/G.O. Plug Valve (VPF015-A-3-G0)	ES-01	Q	Mild Environment
3SWP*V136-143, 148-151, 154-157, 388-389, 834, 835 845	Tufline/Plug Valve (VPF015-A-3)	ES-01	Q	Mild Environment
SWP*V22, 55	Tufline/G.O. Plug Valve (VPF015-A-3-G0)	ES-02	O	See SDS-8
3SWP*V23, 56	Tufline/G.O. Plug Valve (VPF015-A-3-G0)	ES-02	Q	See SDS-9 and EAS-6
3SWP*V144, 146, 158, 159	Tufline/Plug Valve (VPF015-A-3)	ES-02	O	See SDS-8
3SWP*V145, 147	Tufline/Plug Valve (VPF015-A-3)	ES-02	Q	See SDS-9 and EAS-6

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2282.400-568

SHT. NO.: CRS-3 OF 5

DATE: 7/19/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3SWP*V31, 32, 63, 64	Tufline/G.O. Plug Valve (VPF015-A-3-G0)	AB-25	Q	Mild Environment
3SWP*V112-118, 124-130	Tufline/Plug Valve (VPF015-A-3)	CB-04	Q	Mild Environment
SWP*V168-173, 175-178, 180-183, 185-188, 190-191	Tufline/Plug Valve (VPF015-A-3)	ES-05	O	See SDS-10
3SWP*V174, 179, 184, 189, 974-977	Tufline/Plug Valve (VPF015-A-3)	ES-05	Q	See SDS-11 and EAS-7
3SWP*V192-194, 207-215, 219-221	Tufline/Plug Valve (VPF015-A-3)	AB-26	Q	Mild Environment
3SWP*V195, 196 201-206	Tufline/Plug Valve (VPF015-A-3)	AB-25	Q	Mild Environment
3SWP*V197, 199, 972, 973	Tufline/Plug Valve (VPF015-A-3)	AB-09	Q	See SDS-12 and EAS-8
3SWP*V222-225	Tufline/Plug Valve (VPF015-A-3)	AB-09	O	See SDS-13
3SWP*V76-88, 90, 360, 361, 363-365, 367-369, 371-373, 750-765, 770-773, 805-809, 850, 855, 861, 863, 868, 874, 880, 881, 958-965, 996-999	Tufline/Plug Valve (VPF015-A-3)	CW-01	Q	Mild Environment

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2282.400-568

SHT. NO.: CRS-4 OF 5

DATE: 7/19/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3SWP*V320-323, 325-326, 328, 330, 332, 333, 335, 336, 338, 340-343, 345, 346, 348, 350-353, 355, 356, 358, 380-383, 744-747, 851, 853, 857, 860, 864, 866, 966-969, 990-995	Tufline/G.O. Plug Valve (VPF015-A-3-G0)	CW-01	Q	Mild Environment
3SWP*V739, 740	Tufline/Plug Valve (VPF015-A-3)	ES-03	Q	See SDS-14 and EAS-9
3SWP*V812-821	Tufline/Plug Valve (VPF015-A-3)	AB-21	Q	See SDS-15
3SWP*V870, 873	Tufline/G.O. Plug Valve (VPF015-A-3-G0)	AB-21	Q	See SDS-15
3SWP*V846, 847	Tufline/Plug Valve (VPF015-A-3)	AB-33	O	See SDS-16
3SWP*V922	Tufline/Plug Valve (VPF015-A-3)	TN-02	O	See SDS-17
3SWP*V923, 924, 978-981, 984, 985	Tufline/Plug Valve (VPF015-A-3)	CB-05	Q	Mild Environment
3SWP*MOV130A, B	Tufline/M.O. Plug Valve (VPF015-A-3-M0)	AB-04	Q	See SDS-18
3SWP*MOV24A, B, C, D	Tufline/M.O. Plug Valve (VPF015-A-3-M0)	CW-01	Q	Mild Environment
3SWP*MOV115A, B	Tufline/M.O. Plug Valve (VPF015-A-3-M0)	CW-01	Q	Mild Environment

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CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2282.400-568

SHT. NO.: CRS-5 OF 5

DATE: 7/19/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3WTC*V969	Tufline/Plug Valve (VPF015-A-3-G0)	CW-01	Q	Mild Environment
3WTC*AOV24A,B and 50A,B	Tufline/A.O. Plug Valve (VPF030-D-3-A0)	CW-01	Q	Mild Environment
3WTC*AOV25A,B	Tufline/A.O. Plug Valve (VPF015-A-3-A0)	CW-01	Q	Mild Environment
3WTC*S0V24A,B, 25A,B 50A,B	Tufline/Solenoid Operators	CW-01	Q	Mild Environment

NOTES:

1. All motor operators for these valves are included under IEEE qualification program.
2. AO = Air operated  
GO = Gear operated  
MO = Motor operated

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34  
 NAME: MILLSTONE 3  
 CLIENT: NORTHEAST UTILITIES SERVICE COMPANY  
 COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2176.430-583  
 SHT. NO.: CRS - 1 OF 1  
 DATE: 7-24-84

Mark No.	Vendor/Description	Zone	Status	Remarks
3HVC*DMPB4A, B, 5A, B, 6A, B, 15A, B, 16A, B, 17A, B, 19A, B, and 20A, B	American Warming and Vent., Inc. Backdraft Dampers	CB-04	Q	Mild Environment
3HVC*DMPB7, 8A, B, 10, 11, 13A, B, and 22A, B	American Warming and Vent., Inc. Backdraft Dampers	CB-01	Q	Mild Environment
3HVC*DMPB1	American Warming and Vent., Inc. Backdraft Dampers	CB-02	Q	Mild Environment
3HVR*DMPB1A, B, 2A, B, 3A, B4A, B5A, B, and 6A, B	American Warming and Vent., Inc. Backdraft Dampers	AB-04	Q	
3HVR*DMPB7A, B	American Warming and Vent., Inc. Backdraft Dampers	FB-02	Q	
3HVQ*DMPB1A, B and 2A, B	American Warming and Vent., Inc. Backdraft Dampers	ES-01	Q	
3HVV*DMPB1C, D	American Warming and Vent., Inc. Backdraft Dampers	MS-01	Q	
HVV*DMPB1A, B	American Warming and Vent., Inc. Backdraft Dampers	CH-01	Q	Mild Environment
All Dampers Marked 3HVQ*DMP and 3HVR*DMP	American Warming and Vent., Inc. Manual Volume Dampers	Varies	Q	No Nonmetallic Parts
All Dampers Marked 3HVC*DMP	American Warming and Vent., Inc. Volume Control Dampers	Varies	Q	Mild Environment

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. E. CONLON

SPECIFICATION NO.: 2360.000-589

SHT. NO.: CRS-1

DATE: JUNE 12, 1984

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3EGF*STR1A,B,C,D	Leslie Co. 2 In. Strainers	DG-01	Q	Mild Environment
3SIH*STR1A,B	Leslie Co. 6 In. Strainers	ES-02	Q	
3SWP*STR4A,B	Leslie Co. 8 In. Strainers	CB-04	Q	Mild Environment

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N/A = Not Applicable

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DJTKA

SPECIFICATION NO.: 2472.900-594

SHT. NO.: CRS-1 OF 2

DATE: 08/09/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3HVR*AOD20A,B; 29A,B 32A,B; 33A,B; 35A,B; 39A,B; 40A,B; 42A,B; 43A,B; 44A,B; 46A,B; 55A,B; 65A,B; 66A,B; 80A,B; 81A,B; 85; 86; 174A,B; 198A; 199A	American Warming & Vent. Inc. Air Operated Dampers	AB-04	Q	
3GWS*AOD78A,B	American Warming & Vent. Inc. Air Operated Dampers	AB-04	Q	
3HVR*MOD28A,B; 45B1, B2; 45C1,C2; 72A,B	American Warming & Vent. Inc. Motor Operated Dampers	AB-04	Q	
3HVR*MOD49A,B,C1,C2	American Warming & Vent. Inc. Motor Operated Dampers	AB-33	Q	
3HVR*MOD50A,B,C1,C2	American Warming & Vent. Inc. Motor Operated Dampers	AB-11	Q	
3HVR*AOD95A&B	American Warming & Vent. Inc. Air Operated Dampers	AB-16	Q	
3HVR*AOD198B&199B	American Warming & Vent. Inc. Air Operated Dampers	AB-21	Q	
3HVC*AOD179A,B,C	American Warming & Vent. Inc. Air Operated Dampers	CB-03	Q	Mild environment
3HVC*AOD27A,B; 119A,B and 3HVC*MOD33A,B	American Warming & Vent. Inc. Air and Motor Operated Dampers	CB-05	Q	Mild environment

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DITKA

SPECIFICATION NO.: 2472.900-594

SHT. NO.: CRS-2 OF 2

DATE: 08/09/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3HVQ*MOD26A1,A2,B1, B2,C1,C2	American Warming & Vent. Inc. Motor Operated Dampers	ES-01	Q	
3HVQ*AOD40C,D; 41A,C,D; 42A,C,D; 43A,D	American Warming & Vent. Inc. Air Operated Dampers	ES-01	Q	
3HVQ*AOD40A,B; 41B	American Warming & Vent. Inc. Air Operated Dampers	ES-04	Q	
3HVQ*AOD42B; 43B,C	American Warming & Vent. Inc. Air Operated Dampers	ES-05	Q	
3HVP*MOD20A,B,C,D; 23A,B; 26A,B	American Warming & Vent. Inc. Motor Operated Dampers	DG-01	Q	Mild environment
3HVV*AOD23A,B	American Warming & Vent. Inc. Air Operated Dampers	CW-01	Q	Mild environment
3HVV*AOD50A,B,C,D; MOD51A,B,C,D	American Warming & Vent. Inc. Air and Motor Operated Dampers	MS-01	Q	
3HVZ*MOD20A,B; 21A,B	American Warming & Vent. Inc. Motor Operated Dampers	HR-03	Q	

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MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2176.430.648

SHT. NO.: CRS- 1 OF 1

DATE: 8/10/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3HVC*ACU1A,B, & 2A,B	The Bahnson Co. Air Conditioning Units	CB-05	Q	Mild Environment
3HVC*ACU3A,B, & 4A,B	The Bahnson Co. Air Conditioning Units	CB-01	Q	Mild Environment
3HVR*ACU1A & B	The Bahnson Co. Air Conditioning Units	AB-21	Q	

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: K. MANKARIOUS

SPECIFICATION NO.: 2362.050-651

SHT. NO.: CRS-1 OF 1

DATE: 8/27/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3BDG*V942,944, 946,948	Pacific Valves/ VGW090-P-2G0	CS-02	Q	SDS-1
3BDG*V943,945, 947,949	VGW090-P-2G0	CS-01	Q	SDS-1
3CCP*V18	VCW015-A-2	CS-02	Q	No nonmetallic components
3CCP*V32	VOW015-A-3	CS-01	Q	SDS-3
3FWS*V988 thru 991	VGW090-B-2G0	MS-01	Q	SDS-2
3MSS*MOV74A, B, C, D	VOW090-B-2M0	MS-01	Q	SDS-5
3FWA*V30	VGW015-PA-3G0	ES-07	Q	Mild Environment
3FWA*A0V62A, B	VGW090-B-3A0	ES-06	Q	SDS-4
3FPW*V661	VOW015-A-2	CS-02	Q	SDS-3
3FPW*V666	VOW015-A-2	AB-09	Q	SDS-3

Q = Qualified

N/A = Not Applicable

O = Outstanding



MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

SPECIFICATION NO.: 2472.110-654

NAME: MILLSTONE UNIT 3

SHT. NO.: CRS-1 OF 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

DATE: 8/7/84

COMPILED BY: K. MANKARIOUS

Mark No.	Vendor/Description	Zone	Status	Remarks
	Target Rock Corporation/			
3HVC*PCV68A,B	Control Bldg. Press. Reg. Vlvs.	CB All Zones	Q	Mild Environment
3HVC*SOV74A,B	Air Storage Tk. Out Isolation	CB All Zones	Q	Mild Environment
3HVK*PDV32A,B	HVK Differential Press. Control	CB All Zones	Q	Mild Environment
3HVK*TV39A,B	ACU2 Chill Water Control	CB All Zones	Q	Mild Environment
3HVK*TV41A,B	ACU1 Chill Water Control	CB All Zones	Q	Mild Environment
3HVK*TV68A,B	Chillwater Supply HDR Isolation	CB All Zones	Q	Mild Environment
3HVK*TV69A,B	Chillwater Supply HDR Isolation	CB All Zones	Q	Mild Environment
3HVK*TV70A,B	Chillwater Supply HDR Isolation	CB All Zones	Q	Mild Environment
3HVK*TV71A,B	Chillwater Supply HDR Isolation	CB All Zones	Q	Mild Environment
3HVK*TV72A,B	Chillwater Return HDR Isolation	CB All Zones	Q	Mild Environment
3HVK*TV73A,B	Chillwater Return HDR Isolation	CB All Zones	Q	Mild Environment
3HVK*TV74A,B	Chillwater Return HDR Isolation	CB All Zones	Q	Mild Environment
3HVK*TV75A,B	Chillwater Return HDR Isolation	CB All Zones	Q	Mild Environment
3HVK*TV76A,B	ACU4 Temp Control	CB All Zones	Q	Mild Environment
3HVK*TV77A,B	ACU3 Temp Control	CB All Zones	Q	Mild Environment
3PR*SOV6	Spare	N/A	Q	Note 1
3CHS*SOV390A,B	Gross Failed Fuel Monitor	AB-10	Q	*
3FWA*HV31A,B,C,D	Motor Pump Aux. Feedwater Control	ES-06	Q	SDS-2
3FWA*HV32A,B,C,D	Turbine Pump Aux. Feedwater Control	ES-07	Q	SDS-3
3FWA*HV36A,B,C,D	Turbine Pump Aux. Feedwater Control	ES-05	Q	SDS-1
3PR*SOV7	Spare	N/A	Q	Note 2
3SPR*SOV1,2,3,4	Spares	N/A	Q	*

\*These valves do not have non-metallic subcomponents except the solenoids which are included under IEEE qualification program.

Note 1: This valve is not evaluated and is assumed to be used in mild environment in the Control Building. In case it is used in any other environment, evaluation should be performed.

Note 2: This valve is evaluated in SDS-1 assuming it is used in zone ES-05. In case it is used in a harsher environment, evaluation should be performed.

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

SPECIFICATION NO.: 2472.110-654

NAME: MILLSTONE UNIT 3

SHT. NO.: CRS-2 OF 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

DATE: 8/7/84

COMPILED BY: K. MANKARIOUS

Mark No.	Vendor/Description	Zone	Status	Remarks
	Target Rock Corporation/			
3SSP*SOV1A,B,C,D	RC Cold Leg Sample	CS-01	Q	*
3SSP*SOV2A,B	RC Hot Leg Sample	CS-01	Q	*
3SSP*SOV3	Cntmnt. Drains Sump Sample	CS-01	Q	*
3SSP*SOV4	Surplus	N/A	Q	*
3SSP*SOV5	Vol. Control Tank Sample	CS-02	Q	*
3SSP*CTV7,B	Cntmnt Isolation of SSP	CS-02	Q	*
3SSP*SOV25A,B	Borated Water Iso.	HR-01	Q	*
3SSR*CTV19A,B,C,D	S.G. Blowdown Sample	AB-09	Q	*
3SSR*CTV20	Pzr. Vapor Space Sample	CS-02	Q	*
3SSR*CTV22	Pzr. Liquid Space Sample	CS-02	Q	*
3SSR*CTV26	Rx. Cint. Hot Leg Sample	CS-02	Q	*
3SSR*CTV29	Rx. Cint. Cold Leg Sample	CS-02	Q	*
3SSR*CTV32	Sfty Inj. Accum. Sample	CS-02	Q	*
3SSR*CTV21	Pzr. Vapor Space Sample	AB-09	Q	*
3SSR*CTV23	Pzr. Liquid Space Sample	AB-09	Q	*
3SSR*CTV27	Rx. Cint. Hot Leg Sample	AB-09	Q	*
3SSR*CTV30	Rx. Cint. Cold Leg Sample	AB-09	Q	*
3SSR*CTV33	Sfty. Inj. Accum. Sample	AB-09	Q	*
3SSR*SOV24A,B	Rx. Cint. Hot Leg Sample	CS-01	Q	*
3SSR*SOV28A,B,C,D	Rx. Cint. Cold Leg Sample	CS-01	Q	*
3SSR*SOV31A,B,C,D	Sfty. Inj. Accum. Sample	CS-01	Q	*
3SSR*SOV65A,B	Rsd. Heat Removal Sample	ES-04	Q	*
3SSR*SOV67	Letdown HTX Outlet Sample	AB-10	Q	*
3SSR*SOV68A,B,C,D,E	Therm. Regen. Demin. Out Sample	AB-10	Q	*
3SSR*SOV69	Rx. Cint Fit. Inlet Sample	AB-10	Q	*

\*These valves do not have non-metallic subcomponents except the solenoids which are included under IEEE qualification program.

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.74

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: K. MANKARIOUS

SPECIFICATION NO.: 2472.110-654

SHT. NO.: CRS-3 OF 3

DATE: 8/7/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
	Target Rock International/			
3SSR*SOV110	Degasifier Liq. Effluent Sample	AB-25	Q	*
3SSR*SOV112	Boric Acid Xfer. Pump Discharge Sample	AB-02	Q	*
3SSR*SOV150A,B	GWS Supply Isolation	AB-36	Q	SDS-4
3SSR*SOV170	Pzr. Vapor Space Sample	CS-01	Q	*
3SSR*SOV171	Pzr. Liquid Space Sample	CS-01	Q	*
3SSR*SOV172	Pzr. Rif. Tk. Gas Space Isol.	CS-01	Q	SDS-5
3SSR*SOV201	Hydro Contam. Liq. Prg. Hdr.	AB-10	Q	*
3SSR*CTV301A,B,C,D	Surplus	N/A	Q	*
3SSR*SV8102	Vol. Control Tk. Gas Space Sample	AB-02	Q	*
3SSR*CV8025	Pzr. Rif. Tk. Gas Space Sample	AB-09	Q	SDS-7
3SSR*CV8026	Pzr. Rif. Tk. Gas Space	CS-02	Q	SDS-6

\*These valves do not have non-metallic subcomponents except the solenoids which are included under IEEE qualification program.

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: G. WEBSTER

SPECIFICATION NO.: 2282.150-655

SHT. NO.: CRS-1 OF 1

DATE: 6/26/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
Various	Yarway Corp/Globe Valves	Various	Q	See SDS-1

NOTE: Lubricants used in this specification are qualified under IEEE qualification program.

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2103.430-668

SHT. NO.: CRS-1 OF 2

DATE: 7/3/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3HVC*DMPB18A,B and 23	Quality Air Design Backdraft Dampers	CB-01	Q	Mild Environment
3HVR*DMPB13A/B	Quality Air Design Backdraft Dampers	AB-16	Q	
3HVR*DMP 53	Quality Air Design Manual Volume Damper	AB-19	Q	No Nonmetallic Parts
3HVR*DMP54	Quality Air Design Manual Volume Damper	AB-04	Q	No Nonmetallic Parts
3HVR*DMP 60	Quality Air Design Manual Volume Damper	HR-03	Q	No Nonmetallic Parts
3HVR*DMP 71, 73, 74 and 75	Quality Air Design Manual Volume Dampers	FB-02	Q	No Nonmetallic Parts
3HVR*DMP 70 and 72	Quality Air Design Manual Volume Dampers	FB-03	Q	No Nonmetallic Parts
3HVQ*DMP 17	Quality Air Design Manual Volume Damper	ES-06	Q	No Nonmetallic Parts
3HVP*DMPT1A, B and 2A,B 5A,B and 6A,B	Quality Air Design Tornado Dampers	DG-01	Q	Mild Environment
3HVC*DMPT1A,B and 2A,B	Quality Air Design Tornado Dampers	CB-01	Q	Mild Environment
3HVC*DMPT4A & B	Quality Air Design Tornado Dampers	CB-02	Q	Mild Environment

Q = Qualified

N/A = Not Applicable

O = Outstanding



MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. DUTKA

SPECIFICATION NO.: 2103.430-668

SHT. NO.: CRS-2 OF 2

DATE: 7/3/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
3HVC*DMPT5A,B and 6A,B and 7A,B	Quality Air Design Tornado Dampers	CB-05	Q	Mild Environment
3HVC*DMPT8A,B and 9A,B	Quality Air Design Tornado Dampers	CB-04	Q	Mild Environment

Q = Qualified

N/A = Not Applicable

O = Outstanding



MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: G. WEBSTER

SPECIFICATION NO.: 2472.110-673 1.16

SHT. NO.: CRS-1 OF 1 1.18

DATE: 7/12/84 1.20

1.22

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>	
3SVV*EFV26	Dragon Valves/Excess Flow Check	MS-01	Q		1.24
A1, A2 thru D1, D2	Valves				1.26
3SVV*EFV27	Dragon Valves/Excess Flow Check	MS-01	Q		1.29
A1, A2 thru D1, D2	Valves				1.30

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: K. CUNKELMAN

SPECIFICATION NO.: 2282.050.676

SHT. NO.: CRS-1 OF 1

DATE: 07/05/84

<u>Mark No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
All valves purchased under this specification	Pacific/SS Valves 2 1/2 in. and Larger	Various	Q	

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: R. E. CONLON

SPECIFICATION NO.: 2282.150-713

SHT. NO.: CRS-1 OF 1

DATE: 07/30/84

<u>Description No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
VOM150-W-1	Velan/Globe Valve	Various	Q	
VOM150-W-2	Velan/Globe Valve	Various	Q	
VCM150-A-2	Velan/Check Valve	Various	Q	No nonmetallic subcomponent
VGS060-V-2	Velan/Gate Valve	Various	Q	
VGS060-V-3	Velan/Gate Valve	Various	Q	
VOS150-W-1	Velan/Globe Valve	Various	Q	
VOS150-W-2	Velan/Globe Valve	Various	Q	
VOS150-W-3	Velan/Globe Valve	Various	Q	
VOS060-W-2	Velan/Globe Valve	Various	Q	
VOS060-W-3	Velan/Globe Valve	Various	Q	
VCS060-X-2	Velan/Check Valve	Various	Q	

Q = Qualified

N/A = Not Applicable

O = Outstanding

MECHANICAL EQUIPMENT ENVIRONMENTAL  
CONFORMANCE REVIEW SHEET

JOB NO.: 12179.34

NAME: MILLSTONE UNIT 3

CLIENT: NORTHEAST UTILITIES SERVICE COMPANY

COMPILED BY: G. WEBSTER

SPECIFICATION NO.: 2362.150-714

SHT. NO.: CRS- 1 OF 1

DATE: 7/24/84

<u>Description No.</u>	<u>Vendor/Description</u>	<u>Zone</u>	<u>Status</u>	<u>Remarks</u>
VGS060-B-3	Velan/Gate Valve	Various	Q	
VOS150-f-3	Velan/Globe Valve	Various	Q	
VOS060-C-2	Velan/Globe Valve	Various	Q	
VOS060-C-3	Velan/Globe Valve	Various	Q	
VOS150-f-2	Velan/Globe Valve	Various	Q	

Q = Qualified

N/A = Not Applicable

O = Outstanding

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34

MARK NO.: 35FC\*PIA/IB

DRAWING NO(S): 2214.702-006-005C

SPECIFICATION NO.: 2214.702-006

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-006-1A

SHT. NO.: SDS-1 OF 1

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 10/22/84

COMPILED BY: R. E. CONLON

<u>Subcomponent Identification</u>		<u>Maximum Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radiation (Rads)</u>	<u>Temperature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Deflector	GF/Nylon	40*	2.4 x 10*	135	0.6 x 10*	300	AC	NMA-18 EAS-18
Sight Glass	Glass	N/A	2.4 x 10*	135	1.0 x 10*	480	AE	NMA-17 EAS-2
Oil Seal	Buna-N	13	2.4 x 10*	135	1.0 x 10*	225	AC	NMA-17 NMR-6
Case Gasket	Asbestos	N/A	2.4 x 10*	135	1.0 x 10**	1200	AC	NMR-4
End Cover Gasket	Cellulose	N/A	2.4 x 10*	135	1.0 x 10*	196	AC	NMR-9
Coupling Seals	Buna-N	13	2.4 x 10*	135	1.0 x 10*	225	AC	NMA-17 NMR-6
Coupling Gasket	Cellulose	N/A	2.4 x 10*	135	1.0 x 10*	196	AC	NMR-9
Impeller O Ring	Buna-N	13	2.4 x 10*	135	1.0 x 10*	225	AC	NMA-17 NMR-6
Shaft O Ring	Teflon	40*	2.4 x 10*	135	1.5 x 10*	400	AE	NMA-19 NMR-33 EAS-1
O-Ring	Ethylene Propylene	40*	2.4 x 10*	135	1.0 x 10*	194	AC	NMA-20 NMR-14
Alternative Lubricant Equivalent to HGL 1	Mobilux EP-2	N/A	2.4 x 10*	135	3.8 x 10**	250	AC	NMR-36

\* = Radiation Resistance Value

AC = Acceptable by Comparison

AE = Acceptable by Evaluation

O = Outstanding

N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34 MARK NO : 3Q55\*P3A  
3Q55\*P3BDRAWING NO(S) : 2214.602-040-012A  
013C  
014G  
015B

SPECIFICATION NO. : 2214.602-040

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-040-1A

SHT. NO. : SDS-1 OF 2

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : JUNE 14, 1984

COMPILED BY : S. MCINALL

<u>Subcomponent Identification</u>		<u>Service Life</u> <u>(Years) By</u> <u>Thermal Aging</u> <u>Calculation</u> <u>(See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> <u>(Rads)</u>	<u>Temper-</u> <u>ature</u> <u>(°F)</u>	<u>Threshold</u> <u>Radiation</u> <u>(rads)</u>	<u>Max. Service</u> <u>Temperature</u> <u>(°F)</u>		
Sight Glass	Glass	N/A	2.6x10 <sup>4</sup>	120	1.0x10 <sup>4</sup>	480	AE	NMR-17, EAS-1
Gasket-Case	Asbestos	N/A	2.6x10 <sup>4</sup>	120	1x10 <sup>4</sup>	750	AC	NMR-42
Gasket- End Cov	Kraft Paper	N/A	2.6x10 <sup>4</sup>	120	1x10 <sup>4</sup>	196	AE	NMR-9, EAS-2
Gasket-Brg Hsg Cov	Kraft Paper	N/A	2.6x10 <sup>4</sup>	120	1x10 <sup>4</sup>	196	AE	NMR-9, EAS-2
O-Ring Implr	Buna-N	13	2.6x10 <sup>4</sup>	120	1.0x10 <sup>4</sup>	225	AE	NMR-6, NMA-2, EAS-3
O-Ring Shaft Nut	Buna-N	13	2.6x10 <sup>4</sup>	120	1.0x10 <sup>4</sup>	225	AE	NMR-6, NMA-2, EAS-3

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable



## SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34

MARK NO.: 3055\*P3A  
3055\*P3BDRAWING NO(S): 2214.602-040-012A  
013C  
014G  
015B

SPECIFICATION NO.: 2214.602-040

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-040-1A

SHT. NO.: SDS-2 OF 2

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: JUNE 14, 1984

COMPILED BY: S. McINALL

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (Rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
O Ring	Cranelast	40*	2.6x10 <sup>6</sup>	120	1.1x10 <sup>11</sup> *	300	AC	NMR-2, NMA-1
Primary Ring	Carbon	N/A	2.6x10 <sup>6</sup>	120	9.1x10 <sup>8</sup>	500	AC	NMR-20
O-Ring	Cranelast	40*	2.6x10 <sup>6</sup>	120	1.1x10 <sup>11</sup> *	300	AC	NMR-2, NMA-1
Gasket	Asbestos	N/A	2.6x10 <sup>6</sup>	120	1x10 <sup>11</sup> *	750	AC	NMR-42
Oil	Mobil DTE/ Heavy Medium	N/A	2.6x10 <sup>6</sup>	120	3 x 10 <sup>8</sup>	150	AC	NMR-38
Grease	Mobilux EP-2	N/A	2.6 x 10 <sup>6</sup>	120	3.8 x 10 <sup>8</sup>	250	AC	NMR-36

\*This is the radiation resistance value (NMR-2).

AC = Acceptable by Comparison  
AE = Acceptable by Evaluation  
O = Outstanding  
N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179.34

MARK NO.: 3CCE\*PIA,B

DRAWING NO(S): 2214.432-042-004E

SPECIFICATION NO.: 2214.432-042

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-042-2A

SHT. NO.: 505-1 OF 6

CLIENT: NORTHEAST UTILITIES SERVICE CO

DATE: 07/19/84

COMPLIED BY: S McINALL

<u>Subcomponent Identification</u>		<u>Service Life</u> <u>(Years) By</u> <u>Thermal Aging</u> <u>Calculation</u> <u>(See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> <u>(Rads)</u>	<u>Temper-</u> <u>ature</u> <u>(°F)</u>	<u>Threshold</u> <u>Radiation</u> <u>(rads)</u>	<u>Max. Service</u> <u>Temperature</u> <u>(°F)</u>		
Deflector	Glass and Nylon	N/A	1.3x10 <sup>3</sup>	185	8.6x10 <sup>4</sup>	300	AC	NMR-18
Sight Diler	Glass	N/A	1.3x10 <sup>3</sup>	185	1.0x10 <sup>4</sup>	480	AC	NMR-17
Oil Seal, OIBD	Buna-N	13	1.3x10 <sup>3</sup>	185	1x10 <sup>4</sup>	225	AC	NMR-6, NMA-2
Oil Seal, INBD	Buna-N	13	1.3x10 <sup>3</sup>	185	1x10 <sup>4</sup>	225	AC	NMR-6, NMA-2
Casing Gasket	African Asbestos	N/A	1.3x10 <sup>3</sup>	185	1x10 <sup>4</sup> *	750	AC	NMR-42
Gland Gasket	Blue Asbestos	N/A	1.3x10 <sup>3</sup>	185	1x10 <sup>4</sup> *	750	AC	NMR-42
Impeller O-Ring	Teflon	40*	1.3x10 <sup>3</sup>	185	1.5x10 <sup>4</sup>	400	AC	NMR-33, NMA-3
O-Ring BRG HSG	Buna-N	13	1.3x10 <sup>3</sup>	185	1x10 <sup>4</sup>	225	AC	NMR-6, NMA-2

AC = Acceptable by Comparison

AE = Acceptable by Evaluation

O = Outstanding

N/A = Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO.: 12179 34 MARK NO.: 3CCEPIA,B

DRAWING NO(S): 2214.432-042-005B

SPECIFICATION NO.: 2214.432-042

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-042-2A

SHT. NO.: SDS-2 OF 6

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 07/19/84

COMPILED BY: S McINALL

<u>Subcomponent Identification</u>		<u>Service Life</u> <u>(Years) By</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>	<u>Thermal Aging</u> <u>Calculation</u> <u>(See Ref. NM)</u>	<u>Radia-</u> <u>tion</u> <u>(Rads)</u>	<u>Temper-</u> <u>ature</u> <u>(°F)</u>	<u>Threshold</u> <u>Radiation</u> <u>(rads)</u>	<u>Max. Service</u> <u>Temperature</u> <u>(°F)</u>		
O-Ring	Cranelast	40*	1.3x10 <sup>3</sup>	185	1.1x10 <sup>11*</sup>	300	AC	NMR-2, NMA-1
Primary Ring	Carbon	N/A	1.3x10 <sup>3</sup>	185	9.1x10 <sup>9</sup>	500	AC	NMR-20
Bellows	Cranelast	40*	1.3x10 <sup>3</sup>	185	1.1x10 <sup>11*</sup>	300	AC	NMR-2, NMA-1
Gasket	Asbestos	N/A	1.3x10 <sup>3</sup>	185	1x10 <sup>7</sup>	500	AC	NMR-5
Oil	Mobil DTE/ Heavy Medium	N/A	1.3x10 <sup>3</sup>	185	3x10 <sup>8</sup>	150	AE	NMR-38, EAS-6
Grease	Mobilux EP-2	N/A	1.3x10 <sup>3</sup>	185	3.8x10 <sup>8</sup>	250	AC	NMR-36

\*This is the resistance value (NMR-2)

AC = Acceptable by Comparison

AE = Acceptable by Evaluation

O = Outstanding

N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179.34

MARK NO.: 3CC1\*PIA,B

DRAWING NO(S): 2214.432-042-004E

SPECIFICATION NO.: 2214.432-042

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: DIM-042-2A,6A

SHT. NO.: SDS-3 OF 6

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 07/19/84

COMPILED BY: S McINALL

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (Rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Deflector	Glass and Nylon	N/A	2.6x10 <sup>4</sup>	120	8.6x10 <sup>3</sup>	300	AE	NMR-18, EAS-4
Sight Glass	Glass	N/A	2.6x10 <sup>4</sup>	120	1.0x10 <sup>4</sup>	480	AE	NMR-17, EAS-1
Oil Seal, OTBD	Buna-N	13	2.6x10 <sup>4</sup>	120	1x10 <sup>4</sup>	225	AE	NMR-6, NMA-2, EAS-2
Oil Seal, INBD	Buna-N	13	2.6x10 <sup>4</sup>	120	1x10 <sup>4</sup>	225	AE	NMR-6, NMA-2, EAS-2
Gland Gasket	Blue Asbestos	N/A	2.6x10 <sup>3</sup>	120	1x10 <sup>1*</sup>	750	AC	NMR-42
Impeller O-Ring	Teflon	40*	2.6x10 <sup>4</sup>	120	1.5x10 <sup>4</sup>	400	AE	NMR-33, NMA-3, EAS-3
O-Ring BRG HSG	Buna-N	13	2.6x10 <sup>4</sup>	120	1x10 <sup>4</sup>	225	AE	NMR-6, NMA-2, EAS-2

AC = Acceptable by Comparison  
 AE = Acceptable by Evaluation  
 O = Outstanding  
 N/A = Not Applicable

JOB NO. : 12179-34 MARK NO. : 3CCIPIA.B

SUBCOMPONENT DATA SHEET  
DRAWING NO(S) : 2214.432-042-005B

SPECIFICATION NO. : 2214.432-042

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-042-2A.6A

SHT. NO. : SDS-4 OF 6

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 07/10/84

COMPILED BY : S McINALL

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (Rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
O-Ring	Cranelast	40+	2.6x10 <sup>6</sup>	120	1.1x10 <sup>11</sup>	300	AC	NMR-2, NMA-1
Primary Ring	Carbon	N/A	2.6x10 <sup>6</sup>	120	9.1x10 <sup>9</sup>	500	AC	NMR-20
Bellows	Cranelast	40+	2.6x10 <sup>6</sup>	120	1.1x10 <sup>11</sup>	300	AC	NMR-2, NMA-1
Gasket	Asbestos	N/A	2.6x10 <sup>6</sup>	120	1x10 <sup>7</sup>	500	AC	NMR-5
Oil	Mobil DTE/ Heavy Medium	N/A	2.6x10 <sup>6</sup>	120	3x10 <sup>8</sup>	150	AC	NMR-38
Grease	Mobilux EP-2	N/A	2.6x10 <sup>6</sup>	120	3.8x10 <sup>8</sup>	250	AC	NMR-36

\*This is the resistance value (NMR-2)

AC = Acceptable by Comparison  
AE = Acceptable by Evaluation  
O = Outstanding  
N/A = Not Applicable



## SUBCOMPONENT DATA SHEET

JOB NO.: 12179 34 MARK NO.: 3SWP1P3A,B

DRAWING NO(S): 2214.432-042-004E

SPECIFICATION NO.: 2214.432-042

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE

MANUAL NO.: DIM-042-6A

SHT. NO.: SDS-6 OF 6

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 07/10/84

COMPILED BY: S McINALL

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Deflector	Glass and filled and Nylon	N/A	6.5x10 <sup>4</sup>	130	8.6x10 <sup>4</sup>	300	AE	NMR-18, EAS-5
Sight Diler	Glass	N/A	6.5x10 <sup>4</sup>	130	1.0x10 <sup>4</sup>	480	AE	NMR-17, EAS-1
Oil Seal, DIBD	Buna-N	13	6.5x10 <sup>4</sup>	130	1x10 <sup>4</sup>	225	AE	NMR-6, NMA-2 EAS-2
Oil Seal, INBD	Buna-N	13	6.5x10 <sup>4</sup>	130	1x10 <sup>4</sup>	225	AE	NMR-6, NMA-2, EAS-2
Casing Gasket	Blue Asbestos	N/A	6.5x10 <sup>4</sup>	130	1x10 <sup>4</sup>	750	AC	NMR-42
Gland Gasket	Asbestos	N/A	6.5x10 <sup>4</sup>	130	1x10 <sup>4</sup>	500	AC	NMR-5
Impeller O-Ring	Teflon	40+	6.5x10 <sup>4</sup>	130	1.5x10 <sup>4</sup>	400	AE	NMR-33, NMA-3, EAS-3
O-Ring BRG HSG	Buna-N	13	6.5x10 <sup>4</sup>	130	1x10 <sup>4</sup>	225	AE	NMR-6, NMA-2, EAS-2

AC = Acceptable by Comparison  
 AE = Acceptable by Evaluation  
 O = Outstanding  
 N/A = Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO.: 12179.34 MARK NO.: 3SWP\*P3A,B

DRAWING NO(S): 2214.432-042-005B

SPECIFICATION NO.: 2214.432-042

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE

MANUAL NO.: OIM-042-6A

SHT. NO.: SDS-6 OF 6

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 07/19/84

COMPILED BY: S MCINALL

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (Rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
O Ring	Cranelast	40*	6.5x10 <sup>4</sup>	130	1.1x10 <sup>11</sup> *	300	AC	NMR-2, NMA-1
Primary Ring	Carbon	N/A	6.5x10 <sup>4</sup>	130	9.1x10 <sup>9</sup>	500	AC	NMR-20
Bellows	Cranelast	40*	6.5x10 <sup>4</sup>	130	1.1x10 <sup>11</sup> *	300	AC	NMR-2, NMA-1
Gasket	Asbestos	N/A	6.5x10 <sup>4</sup>	130	1x10 <sup>7</sup>	500	AC	NMR-5
Oil	Mobil DTE/ Heavy Medium	N/A	6.5x10 <sup>4</sup>	130	3x10 <sup>8</sup>	150	AC	NMR-38
Grease	Mobilux EP-2	N/A	6.5x10 <sup>4</sup>	130	3.8x10 <sup>8</sup>	250	AC	NMR-36

\*This is the resistance value (NMR 2)

AC = Acceptable by Comparison  
 AE = Acceptable by Evaluation  
 O = Outstanding  
 N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179 34

MARK NO.: 3R55\*PIA,B,C,D

DRAWING NO(S): 2214.802-044-018G  
2214.802-044-019B

SPECIFICATION NO.: 2214.802-044

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: DIM-044-1A

SHT. NO.: SDS-1 OF 1

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 7/10/84

COMPILED BY: S. MCINALL

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> <u>Calculation</u> (See Ref. <u>NM</u> )	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion**</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
O-Rings	EP	40+	2.2x10 <sup>7</sup>	120	1x10 <sup>8</sup>	194	AE	NMR-14, NMA-B, EAS-1
Bushings	Graphalloy	N/A	2.2x10 <sup>7</sup>	120	9.1x10 <sup>8</sup>	500	AC	NMR-20
Bellows	Cranelast	40+	2.2x10 <sup>7</sup>	120	1.1x10 <sup>11</sup> *	300	AC	NMR-2, NMA-1
Primary Ring	Carbon	N/A	2.2x10 <sup>7</sup>	120	9.1x10 <sup>8</sup>	500	AC	NMR-20
O-Rings	Cranelast	40+	2.2x10 <sup>7</sup>	120	1.1x10 <sup>11</sup> *	300	AC	NMR-2, NMA-1
Bellofram Diaphragm W/Unwoven Flange Insert	Dacron Fabric and EPR	40+	2.2x10 <sup>7</sup>	120	1x10 <sup>8</sup>	194	AE	NMR-80, NMR-14, NMA-B, EAS-2
Gasket, Metallic Johns Manville	Asbestos	N/A	2.2x10 <sup>7</sup>	120	1x10 <sup>11</sup> *	1200	AC	NMR-4

\*This is the resistance value (NMR-2).

\*\*The radiation dose indicated is due to process fluid.

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
O - Outstanding  
N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34 MARK NO.: 3HCS-RBNRIA,B DRAWING NO(S): 2214.900-075-005C  
 2214.900-075-013A  
 2214.900-075-014A  
 2214.900-075-015A SPECIFICATION NO.: 2214.900-075

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-075-1A

SHEET NO.: SDS-1 OF 1

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 6/18/84

COMPILED BY: K. MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (Rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Blower Assembly:								
Labyrinth	Viton*	40*	1.8x10 <sup>11</sup> **	350***	8.7x10 <sup>8</sup>	350	AE	NMA-6 NMR-34
O-Rings	Viton*	40*					AE	EAS-1
Gaskets	Ethylene**** Propylene	N/A					0	
Coupling Seal	Buna N	6.5	4.6x10 <sup>8</sup>	135	3.0x10 <sup>8</sup>	225	AE	NMR-6 NMA-15 EAS-2
Coupling Lubricant	Mobiltemp #1**	N/A	4.6x10 <sup>8</sup>	135	1x10 <sup>8</sup>	500	AC	NMR-89
Tube Oil	Mobil DTE Extra Heavy (SAE 30/40)	N/A	4.6x10 <sup>8</sup>	135	3x10 <sup>8</sup>	150	AC	NMR-38

\*Teflon was supplied by original manufacturer but will be replaced by Energy Inc. during IEEE qualification program.

\*\*At present, the coupling is filled with Texaco Marfak 10-EP2. This lubricant is not evaluated with the assumption that it will be replaced by an equivalent Mobil product and the acceptable equivalent Mobil lubricant is Mobiltemp #1.

\*\*\*Environment conditions of the process fluid - Zone CS 02. The value indicated is the summation of gamma and beta rads.

\*\*\*\*At present, the gasket is a 828089 - gask-o-seal (Dwg. No. 2214.900-075-005D) which is made of ethylene propylene and anodized aluminum. However, these gaskets will be changed to compressed asbestos which has a threshold radiation of  $1 \times 10^{11}$  rads and maximum service temperature 750°F (NMR-42) and is suitable for use in any environment of Millstone 3.

AC - Acceptable by Comparison

AE - Acceptable by Evaluation

0 - Outstanding

N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34 MARK NO.: 3HCS\*RRNR1A,B

DRAWING NO(S): 2214.900-075-005C  
2214.900-075-013A  
2214.900-075-014A  
2214.900-075-015A

SPECIFICATION NO.: 2214.900-075

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-075-1A

SHT. NO.: SDS-1 OF 1

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 6/18/84

COMPILED BY: K. MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> <u>Calculation</u> (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Blower Assembly:								
Labyrinth	Viton*	40†	1.8x10****	350***	8.7x10 <sup>6</sup>	350	AE	NMA-6 NMR-34
O-Rings	Viton*	40†					AE	EAS-1
Gaskets	Ethylene**** Propylene	N/A					O	
Coupling Seal	Buna N	6.5	4.6x10 <sup>6</sup>	135	3.0x10 <sup>6</sup>	225	AE	NMR-6 NMA-15 EAS-2
Coupling Lubricant	Mobiltemp #1**	N/A	4.6x10 <sup>6</sup>	135	3x10 <sup>6</sup>	300	AC	NMR-89
Lube Oil	Mobil DTE Extra Heavy (SAE 30/40)	N/A	4.6x10 <sup>6</sup>	135	3x10 <sup>6</sup>	150	AC	NMR-38

\*Teflon was supplied by original manufacturer but will be replaced by Energy Inc. during IEEE qualification program.

\*\*At present, the coupling is filled with Texaco Marfak 10-EP2. This lubricant is not evaluated with the assumption that it will be replaced by an equivalent Mobil product and the acceptable equivalent Mobil lubricant is Mobiltemp #1.

\*\*\*Environment conditions of the process fluid - Zone CS-02. The value indicated is the summation of gamma and beta rads.

\*\*\*\*At present, the gasket is a 828089 - gask-o-seal (Dwg. No. 2214.900-075-005D) which is made of ethylene propylene and anodized aluminum. However, these gaskets will be changed to compressed asbestos which has a threshold radiation of 1 x 10<sup>6</sup> rads and maximum service temperature 750°F (NMR-42) and is suitable for use in any environment of Millstone 3.

AC = Acceptable by Comparison

AE = Acceptable by Evaluation

O = Outstanding

N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179 34 MARK NO.: VARIOUS

DRAWING NO(S): 2221.180-127-00211

SPECIFICATION NO.: 2221.180-127

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MATERIAL NO.: DIM-127-1A

SHT. NO.: SDS-1 OF 1

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 6-29-84

COMPILED BY: R. E. CONLON

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (Rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Rod Wiper	Ethylene Propylene	40*	1.0 x 10*	350	1 x 10*	300	AE	NMR-14 NMA-8 EAS-1
Chevron Pack	Ethylene Propylene	40*	1.0 x 10*	350	1 x 10*	300	AE	NMR-14 NMA-8 EAS-1
O-Ring	Ethylene Propylene	40*	1.0 x 10*	350	1 x 10*	300	AE	NMR-14 NMA-8 EAS-1
Tube Clamp	Ultramid (Lexan 500)	NA	1.0 x 10*	350	7 x 10*	295	AE	NMR-78 EAS-2
Hydraulic Fluid	SF-1151 Silicone Base	NA	1.0 x 10*	350	1 x 10*	500	AE	NMR-46 EAS-3

\*The tube clamp is not vital to the integrity of the snubber and the intended task can be performed without the clamp.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179.34

MARK NO : 31VR\*ENGA.B

DRAWING NO(S) : 2170.430-140-007G

SPECIFICATION NO. : 2170.430-140

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-140-1B

SHT. NO. : SDS-1 OF 2

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 6/15/84

COMPILED BY : R DUTKA

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> Calculation (See Ref. NM)	<u>Harsh Environment</u> Radiation (Rads)		<u>Material Data</u> Threshold Radiation (rads)		<u>Max. Service</u> Temperature (°F)	<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> Subcomponent	<u>Material</u>			<u>Temperature</u> (°F)					
Gaskets IPNG Flange	Silicone Sponge	40*	1.1x10*	185	5x10*	302	AC	NMR-13 NMA-7	
Lubricant	Chevron* SR-I No. 2	N/A	1.1x10*	185	3x10*	347	AC	NMR-73	

\* Motor equivalent not required for Westinghouse medium size motors

- AC - Acceptable by Comparison
- AE - Acceptable by Evaluation
- D - Outstanding
- N/A - Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO.: 12179 34 MARK NO.: 31VR-FN10A.B DRAWING NO(S): 2170.430-140-007G SPECIFICATION NO.: 2170.430-140  
 NAME: MILLSTONE 3 OPERATION AND MAINTENANCE SHIT. NO.: SDS-2 OF 2  
 CLIENT: NORTHEAST UTILITIES SERVICE CO. MANUAL NO.: OIM-140-1B DATE: 6/15/84  
 CAMPIED BY: R. DUTKA

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment Radiation (Rads)	Temperature (°F)	Material Data Threshold Radiation (rads)	Max. Service Temperature (°F)	Status	Reference
Nonmetallic Subcomponent	PVC-FOAM	**	1.1x10*	185	5x10*	175	AE	NMR-57 EAS-1
Gasket	Chevron*	N/A	1.1x10*	185	3x10*	347	AC	NMR-73
HSNG Flange	SR I No. 2							

\* Most equivalent not required for Westinghouse medium size motors  
 \*\* Not Available

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 N - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO. : 311VR\*FN12A,B

DRAWING NO(S) : 2176-430-141-004D

SPECIFICATION NO. : 2176-430-141

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE

MANUAL NO : OIM-141-1A

SHEET NO. : SDS-1 OF 1

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 6/15/84

COMPILED BY : R. DUTKA

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Shaft Seal	Asbestos	NA	1.0x10 <sup>4</sup>	170	1.0x10 <sup>4</sup> *	750	AC	NMR-42
Lubricant	Chevron* SR-1 No. 2	NA	1.1x10 <sup>4</sup>	170	3x10 <sup>4</sup>	347	AC	NMR-73

\* Mobil equivalent not required for Westinghouse medium size motors

AC = Acceptable by Comparison

AE = Acceptable by Evaluation

O = Outstanding

N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34      MARK NO.: ALL NUMBERS LISTED ON CRS-1      DRAWING NO(S): 2282.050-153-018, 028, 031, 033, 035, 037, 039, 045, 067, 070, 073, 074, 089, 090, 093, 101, 102, 108      SPECIFICATION NO.: 2282.050-153  
 NAME: MILLSTONE 3      OPERATION AND MAINTENANCE MANUAL NO.: OIM-153-3A      SHE. NO.: SDS-1 OF 6      DATE: 8/8/84

CLIENT: NORTHEAST UTILITIES SERVICE CO

COMPILED BY: T.M. RILEY

Subcomponent Identification (Also see Note 2)		Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
Nonmetallic Subcomponent	Material		Radia- tion (Rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Gasket, Spiral Wound	Asbestos	N/A	*	*	$1 \times 10^{10}$	1200	AC	NMR-4
Packing Rings	JC 187-1-CR	N/A	*	*	$1 \times 10^{10}$	1200	AC	NMR-4
Lubricant	Gulf Supreme No. 1 Grease	N/A	N/A	N/A	See Mobil Equivalent		N/A	N/A
Lubricant	"Naver Lok Mica Compound" (Note 1)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mobil Equivalent of Gulf Lubricant	Mobilux EP No. 1	N/A	*	**	$3.8 \times 10^8$	250	AE	NMR-91 EAS-3

\*All harsh environments at the plant, for those areas in which these valves are located, are below the material threshold radiation and maximum service temperature level of the valve subcomponent materials.

\*\*Depending on application and location of the valves, the process fluid temperatures can range from 70°F to 586°F and the building atmosphere temperatures can range from 70°F to 350°F.

AC = Acceptable by Comparison  
 AE = Acceptable by Evaluation  
 O = Outstanding  
 N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO : ALL NUMBERS

DRAWING NO(S) : 2282.050-153-031,

SPECIFICATION NO. : 2282.050-153

NAME : MILESTONE 3

LISTED ON

032, 036, 100

CRS-02

OPERATION AND MAINTENANCE

SHT. NO. : SDS-2 OF 6

MANUAL NO. : DIM-153 3A

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 8/8/84

COMPILED BY : T. M. RILEY

<u>Subcomponent Identification</u> (Also see Note 2)		<u>Service Life</u> (Years) By Thermal Aging Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Gasket, Spiral Wound	Asbestos	N/A	*	*	$1 \times 10^6$	1200	AC	NMR-4
Lubricant	Gulf Supreme No. 1 Grease	N/A	N/A	N/A	See Mobil Equivalent		N/A	N/A
Lubricant	"Never Lok Mica Compound" (Note 1)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mobil Equivalent of Gulf Product	Mobilux EP No. 1	N/A	*	**	$3.8 \times 10^6$	250	AE	NMR-81 EAS-3

\*All harsh environments at the plant, for those areas in which these valves are located, are below the material threshold radiation and maximum service temperature level of the valve subcomponent materials.

\*\*Depending on application and location of the valves, the process fluid temperatures can range from 70°F to 586°F and the building atmosphere temperatures can range from 70°F to 350°F.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO. : 12179.34  
NAME : MILLSTONE 3MARK NO. : VGW060-x-2-GD  
(3RHS'V002)  
(3RHS'V006)DRAWING NO(S) : 2282.050-153-044  
OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-153-3A

SPECIFICATION NO. : 2282.050-153

SHT. NO. : SDS-3 OF 6

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 8/8/84

COMPILED BY : T. M. RILEY

Subcomponent Identification (Also see Note 2)		Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
Nonmetallic Subcomponent	Material		Radia- tion (Rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Gasket, Spiral Wound	Asbestos	N/A	$2.88 \times 10^4$ (Note 3)	350	$1 \times 10^{10}$	1200	AC	NMR-4
Packing Rings	JC 187-I-CR	N/A	$2.88 \times 10^4$ (Note 3)	350	$1 \times 10^{10}$	1200	AC	NMR-4
Grommet (See Notes 4,6)	Rubber	1.5	$7.4 \times 10^4$ (Zone ES-04)	120	$2 \times 10^4$	200	AE	NMR-22 NMA-11 EAS-2
Lubricant	Gulf Supreme No. 1 Grease	N/A	N/A	N/A	See Mobil Equivalent		N/A	N/A
Mobil Equivalent of Gulf Product	Mobilux EP No. 1	N/A	*	*	$3.8 \times 10^4$	250	AE	NMR-91 EAS-3
Lubricant	"Never Lok Mica Compound" (Note 1)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*The "harsh" environment radiation TLD and temperature are conservatively assumed equal to the process fluid values (i.e.  $2.88 \times 10^4$  rads and 350°F - the "harsh" environment of gasket and packing rings above).

AC = Acceptable by Comparison  
AE = Acceptable by Evaluation  
D = Outstanding  
N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34  
NAME : MILLSTONE 3MARK NO : VGWOGO-X 2  
(3RH5\*V043)DRAWING NO(S) : 2282.050-153-046  
OPERATION AND MAINTENANCE  
MANUAL NO : OIM-153-3A

SPECIFICATION NO. : 2282.050-153

SHT. NO. : SDS-4 OF 6

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 8/8/84

COMPILED BY : T.M. RILEY

<u>Subcomponent Identification</u> (Also see Note 2)		<u>Service Life</u> (Years) By <u>Thermal Aging</u> <u>Calculation</u> (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Gasket, Spiral Wound	Asbestos	N/A	2.88 x 10 <sup>4</sup>	350	1 x 10 <sup>11</sup>	1200	AC	NMR-4
Packing Rings	JC 187-1-CR	N/A	2.88 x 10 <sup>4</sup>	350	1 x 10 <sup>11</sup>	1200	AC	NMR-4
Oil Seals (See Notes 5,6)	Flax	N/A	7.0 x 10 <sup>4</sup> (Zone ES-03)	120	1 x 10 <sup>8</sup>	220	AE	NMR-12 EAS-1
Lubricant	Gulf Supreme No. 1 Grease	N/A	N/A	N/A	See Mobil Equivalent		N/A	N/A
Lubricant	"Never Lok Mica Compound" (Note 1)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mobil Equivalent of Gulf Lubricant	Mobilux EP No. 1	N/A	*	*	3.8 x 10 <sup>4</sup>	250	AE	NMR-91 EAS-3

\*The "harsh" environment radiation TID and temperature are conservatively assumed equal to the process fluid values (i.e. 2.88 x 10<sup>4</sup> rads and 350°F - the "harsh" environment of gasket and packing rings above).

AC = Acceptable by Comparison  
AE = Acceptable by Evaluation  
D = Outstanding  
N/A = Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179 34 MARK NO : VOW150-X-2-GD  
 NAME MILESTONE 3 (3CHS'V270)  
 (3CHS'V271)  
 (3CHS'V272)  
 CLIENT: NORTHEAST UTILITIES SERVICE CO.

DRAWING NO(S) : 2282.050-153-041  
 OPERATION AND MAINTENANCE  
 MANUAL NO. : DIM-153-3A

SPECIFICATION NO. : 2282.050-153  
 SHIT. NO. : SDS-5 OF 6  
 DATE: 08/08/84

COMPILED BY: T. M. RILEY

<u>Subcomponent Identification</u> (Also see Note 2)		<u>Service Life</u> (Years) By Thermal Aging Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> Subcomponent	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Gasket, Spiral Wound	Asbestos	N/A	2.88 x 10 <sup>8</sup> (Note 3)	*	1 x 10 <sup>18</sup>	1200	AC	NMR-4
Packing Rings	JC 187-1 CR	N/A	2.88 x 10 <sup>8</sup> (Note 3)	*	1 x 10 <sup>18</sup>	1200	AC	NMR-4
Oil Seals (See Notes 5,6)	Flax	N/A	1.7 x 10 <sup>7</sup> (Zone AB-03)	*	1 x 10 <sup>8</sup>	220	AE	NMR-12 EAS-1
Grommet (See Notes 4,6)	Rubber	1.5	1.7 x 10 <sup>7</sup> (Zone AB-03)	170	2 x 10 <sup>8</sup>	200	AE	NMR-22 NMA-11 EAS-2
Lubricant	"Never Lok Mica Compound" (Note 1)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*The harsh temperature environment is conservatively assumed equal to Zone AB-03 bulk temperature (i.e. 170°F)

AC = Acceptable by Comparison  
 AE = Acceptable by Evaluation  
 O = Outstanding  
 N/A = Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179.34 MARK NO : V0W150-X-2-G0 SPECIFICATION NO. : 2282.050-153  
 NAME : MILLSTONE 3 (3CHS-V05-1) OPERATION AND MAINTENANCE  
 SERIAL NO. : DIM-153-3A MANUAL NO. : SDS-6 OF 6  
 DATE : 8/8/84

CLIENT : NORTHEAST UTILITIES SERVICE CO  
 COMPILED BY : T.M. RILEY

Subcomponent Identification (Also See Note 2)	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Gasket, Spiral Wound	316L8 Asbestos	N/A	2.88 x 10 <sup>6</sup> (Note 3)	210	1 x 10 <sup>16</sup> *	1200	AC	NMR-4
Packings Rings	JC 187-1-CR	N/A	2.88 x 10 <sup>6</sup> (Note 3)	210	1 x 10 <sup>16</sup> *	1200	AC	NMR-4
Oil Seals (Notes 6,7)	Flax	N/A	1.4 x 10 <sup>6</sup> (Zone AB-09)	*	1 x 10 <sup>16</sup> *	220	AE	NMR-12 EAS-1
Grommet (Notes 6,7)	Rubber	1.5	1.4 x 10 <sup>6</sup> (Zone AB-09)	*	2 x 10 <sup>16</sup> *	200	AE	NMR-22 NMA-11 EAS-2
Lubricant	"Never Lok Mica Compound" (Note 1)	N/A						

- NOTE: (1) "Never Lok Mica Compound" has not been evaluated because it is used during assembly only and not for regular operation.
- (2) For valves with manual gear operators (crane and limitorque) the gear operator subcomponents have no function under accident condition and are therefore acceptable for use in this application (see EAS No. 2). Electrically driven limitorque operators are addressed under IEEE-323.
- (3) Process fluid radiation (and temperature levels as applicable)
- (4) The grommet subcomponent of the valves is 50 percent natural gum rubber and 50 percent synthetic rubber. All calculations are based on natural gum rubber's properties. Although this subcomponent has a calculated service life of 1.5 years, it is not pertinent to the valve's safety function and may be replaced at the discretion of the maintenance personnel (see EAS No. 2).
- (5) The oil seals of these valves are made of flax (cellulose fiber). All material data is based on the properties of cellulose because it is similar to flax. These subcomponents are not pertinent to the valves' safety function (see EAS No. 1).
- (6) Max service temperature values taken from attached letters ("Aloyco" to "SMC", 6 June 1984 and "McMaster-Carr" to "SMC", 10 July 1984).
- (7) Harsh environment temperature conservatively assumed equal to Zone AB (B) bulb temperature (i.e. 210°F).

SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34 I.D. NO.: VARIOUS EXCEPT DRAWING NO(S): VARIOUS  
 the last four as indicated on CRS 1 of 1

SPECIFICATION NO.: 2282.150-154

NAME: MILESTONE 3

OPERATION AND MAINTENANCE  
 MANUAL NO.: DIM-154-1A, 2A, 3A

SHT. NO.: SDS-1 OF 2

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 8/9/84

COMPILED BY: I. M. RILEY

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radiation (Rads)</u>	<u>Temperature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Packing rings	J.C. 187-1 (asbestos)	N/A	*	*	1 x 10 <sup>10</sup> *	1200	AC	NMR-4
Lubricant	Molykote 505 (See Notes 1,3)	N/A	(Note 1)	(Note 1)	1 x 10 <sup>8</sup>	2000	AE	NMR-82 EAS-1

\*John Crane 187-1 is qualified for all environments described in NETM-26.

- AC - Acceptable by Comparison
- AE - Acceptable by Evaluation
- O - Outstanding
- N/A - Not Applicable

SUBCOMPONENT DATA SHEET

DRAWING NO(S) : 2282-150-154-077E SPECIFICATION NO. : 2282-150-154

DRAWING NO(S) : 2282-150-154-077E

JOB NO : 12179-34 I.D. NO : V55150-AA-2  
(JRC'S V180)  
(JRC'S V181)  
(JRC'S V182)

OPERATION AND MAINTENANCE  
MATERIAL NO. : OIM-154-1A.2A

SIIT. NO. : SDS-2 OF 2

DATE : 8/9/84

CLIENT : NORTHEAST UTILITIES SERVICE CO.

COMPILED BY : T. M. RILEY

Nonmetallic Subcomponent	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment Radiation (Rads)	Environment Temperature (°F)	Material Data		Status	Reference
					Threshold Radiation (rads)*	Max. Service Temperature (°F)		
Diaphragm retainer gasket	Grafoil sheet	N/A	3.2 x 10 <sup>4</sup> (See Note 2)	350	9.1 x 10 <sup>4</sup>	500	AC	NMR-20
Seal ring gasket	Grafoil sheet	N/A	3.2 x 10 <sup>4</sup> (See Note 2)	350	9.1 x 10 <sup>4</sup>	500	AC	NMR-20
Seal pad	Grafoil ribbon	N/A	3.2 x 10 <sup>4</sup> (See Note 2)	350	9.1 x 10 <sup>4</sup>	500	AC	NMR-20
Package cartridge	Grafoil ribbon and graphite filament	N/A	3.2 x 10 <sup>4</sup> (See Note 2)	350	9.1 x 10 <sup>4</sup>	500	AC	NMR-20
Lubricant	Molykote 505 (See Notes 1,3)	N/A	*	350 (See Note 1)	1 x 10 <sup>4</sup>	2000	AE	NMR-82 EAS-1

(1) Molykote 505 is used as a lubricant to aid in reassembling the cited valves if disassembly has occurred. For conservatism, the worst-case "harsh" environment is assumed to be the combination of the maximum 40 ft x 1 yr accident TLD (AB-147B-28 = 2.3 x 10<sup>4</sup> rads) and the containment M S L B. temperature profile (CS 01 = 350° F peak).

(2) 3.2 x 10<sup>4</sup> rad is the combined gamma and beta radiation of process fluid and environmental zone.

(3) No Mobil equivalent available.

SUBCOMPONENT DATA SHEET

JOB NO.: 12179.34 MARK NO.: SEE CRS-1

DRAWING NO(S): 2282.350-158-005,007 & 008 SPECIFICATION NO.: 2282.350-158

NAME: MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-158-2A,B

SHT. NO.: SDS-1 OF 13

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 08/20/84

COMPILED BY: S. MCINALL

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation* (Rads)	Temperature** (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Diaphragm	EPT	40+	6.5 x 10 <sup>4</sup>	185	8.77 x 10 <sup>4</sup>	350	AC	NMR-15, NMA-1
Gasket	EPT	40+	6.5 x 10 <sup>4</sup>	185	8.77 x 10 <sup>4</sup>	350	AC	NMR-15, NMA-1
"O" Rings	EPT	40+	6.5 x 10 <sup>4</sup>	185	8.77 x 10 <sup>4</sup>	350	AC	NMR-15, NMA-1
Lubricant***	Dow-Corning No. 111 Silicone	N/A	6.5 x 10 <sup>4</sup>	185	No data available	400	AE	NMR-93 EAS-6
Stem Washer	Polyethylene	N/A	6.5 x 10 <sup>4</sup>	185	3.8 x 10 <sup>4</sup>	150	AE	NMR-30 EAS-2
Lubricant	Sunaplex No. 1 EP Grease	N/A	N/A	N/A	See Mobil equivalent	N/A	N/A	N/A
Lubricant (Mobil eq to Sunaplex No. 1)	Mobilith AW 1	N/A	6.5 x 10 <sup>4</sup>	185	No data available	350	AE	NMR-96 EAS-6

\*This value represents the harshest environmental radiation dose to which any of these valves are exposed

\*\*This value represents the harshest environmental temperature level to which any of these valves are exposed

\*\*\*No Mobil equivalent available

AC = Acceptable by Comparison

AE = Acceptable by Evaluation

O = Outstanding

N/A = Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO.: 12179.34      MARK NO.: 2CHS\*V300,303, 787  
 2CHS\*V339,343, 359,629,783, 784,786,920, 921,922,923  
 DRAWING NO(S): 2282.350-158-005,007 & 063      SPECIFICATION NO.: 2282.350-158

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
 MANUAL NO.: OIM-158-2A,B

SIT. NO.: SDS-2 OF 13

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 08/20/84

COMPILED BY: T. M. RILEY

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (Rads)</u>	<u>Temper- ature* (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Diaphragm	EPT	40+	1.7 x 10 <sup>4</sup>	235	8.77 x 10 <sup>4</sup>	350	AE	NMR-15 NMA-1, EAS-1
Gasket	EPT	40+	1.7 x 10 <sup>4</sup>	235	8.77 x 10 <sup>4</sup>	350	AE	NMR-15 NMA-1, EAS-1
*O* Rings	EPT	40+	1.7 x 10 <sup>4</sup>	235	8.77 x 10 <sup>4</sup>	350	AE	NMR-15 NMA-1, EAS-1
Shim Washer	Polyethylene	N/A	1.7 x 10 <sup>4</sup>	235	3.8 x 10 <sup>4</sup>	150	AE	NMR-30 EAS-2
Lubricant**	Dow-Corning No. 111 Silicone	N/A	1.7 x 10 <sup>4</sup>	235	No data available	400	AE	NMR-93 EAS-6
Lubricant	Sunaplex No. 1 EP Grease	N/A	N/A	N/A	See Mobil equivalent	N/A	N/A	N/A
Lubricant (Mobil eq to Sunaplex No. 1)	Mobilith AW 1	N/A	1.7 x 10 <sup>4</sup>	235	No data available	350	AE	NMR-96 EAS-6

\*This value represents the harshest environmental temperature level to which any of these valves are exposed  
 \*\*No Mobil equivalent available

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179-34 MARK NO : SEE CRS-2.3 DRAWING NO(S) : 2282-350-158-001,002,005, & SPECIFICATION NO. : 2282-350-158-007  
 (All except those listed on SDS-2)

NAME : MILESTONE 3 SHT. NO. : SDS-3 OF 13  
 CLIENT : NORTHEAST UTILITIES SERVICE CO. DATE : 08/20/84  
 OPERATION AND MAINTENANCE MANUAL NO : 01M-158-2A,B

COMPILED BY : T. M. RILEY

Normal Metallic Subcomponent	Material	Service Life (Years) BY Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Diaphragm	EPT	40*	2.32 x 10 <sup>4</sup>	280	8.77 x 10 <sup>4</sup>	350	AE	NMR-15 NMA-1, EAS-1
Gasket	EPT	40*	2.32 x 10 <sup>4</sup>	280	8.77 x 10 <sup>4</sup>	350	AE	NMR-15 NMA-1, EAS-1
"O" Rings	EPT	40*	2.32 x 10 <sup>4</sup>	280	8.77 x 10 <sup>4</sup>	350	AE	NMR-15 NMA-1, EAS-1
Shim Washer	Polyethylene	N/A	2.32 x 10 <sup>4</sup>	280	3.8 x 10 <sup>4</sup>	150	AE	NMR-30 EAS-2
Diaphragm Support Sheet	Polyurethane	N/A	2.32 x 10 <sup>4</sup>	280	1 x 10 <sup>4</sup>	230	AE	NMR-79 EAS-4
Lubricant***	Dow-Corning Ho. 111 Silicone	N/A	2.32 x 10 <sup>4</sup>	280	No data available	400	AE	NMR-93 EAS-6
Lubricant	Sunplex No. 1 EP Grease	N/A	N/A	N/A	See Mobil equivalent	N/A	N/A	N/A
Lubricant (Mobil eq to Sunplex 1)	Mobilith AW 1	N/A	2.32 x 10 <sup>4</sup>	280	No data available	350	AE	NMR-96 EAS-6

\*\*This value is based on the total radiation from normal primary coolant dose, the pressurized LOCA dose, and the highest environmental dose to which these valves are exposed (1.7 x 10<sup>4</sup> Rads)  
 \*\*\*This temperature is the highest temperature level to which these valves are exposed  
 \*\*\*\*No Mobil equivalent available  
 AE = Acceptable by Comparison  
 AT = Acceptable by Evaluation  
 O = Outstanding  
 N/A = Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34 MARK NO.: SEE CRS-4 DRAWING NO(S): 2282.350-158-001 & 002 SPECIFICATION NO.: 2282.350-158  
 NAME: MILLSTONE 3 OPERATION AND MAINTENANCE MANUAL NO.: DIM-158-2A SHIT. NO.: SDS-4 OF 13

CLIENT: NORTHEAST UTILITIES SERVICE CO.

COMPILED BY: T. M. RILEY

DATE: 08/20/84

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)	
Diaphragm	EPT	40+	2.98x10 <sup>6</sup>	350	8.77 x 10 <sup>6</sup>	350	NMR-15, NMA-1, EAS-1
O-Rings	EPT	40+	2.98x10 <sup>6</sup>	350	8.77 x 10 <sup>6</sup>	350	NMR-15, NMA-1, EAS-1
Gasket	EPT	40+	2.98x10 <sup>6</sup>	350	8.77 x 10 <sup>6</sup>	350	NMR-15, NMA-1, EAS-1
Shim Washer	Polyethylene	N/A	2.98x10 <sup>6</sup>	350	3.8 x 10 <sup>6</sup>	150	NMR-30 EAS-2
Lubricant**	Dow-Corning No. 111 Silicone	N/A	2.98x10 <sup>6</sup>	350	No data available	400	NMR-93 EAS-6
Lubricant	Sunaplex No. 1 EP Grease	N/A	N/A	N/A	See Mobil equivalent	N/A	N/A
Lubricant (Mobil eq to Sunaplex No. 1)	Mobilith AW 1	N/A	2.98x10 <sup>6</sup>	350	No data available	350	NMR-96 EAS-6

\* This is the total dose to which the valves are exposed. It includes the 40 yr life plus accident environmental dose (1 x 10<sup>6</sup> Rads), the 2 in. pipe primary coolant 40 yr dose (0.8 x 10<sup>6</sup> Rads gamma, 1.4 x 10<sup>6</sup> Rads Beta) and the 2 in. pipe pressurized LOCA dose (1.85 x 10<sup>6</sup> Rads gamma, 1.65 x 10<sup>6</sup> Rads Beta)

\*\* (to Mobil equivalent available)

AC = Acceptable by Comparison  
 AE = Acceptable by Evaluation  
 O = Outstanding  
 N/A = Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34      MARK NO.: 3CVS+V980,981,      DRAWING NO(S): 2282-350-158-002B      SPECIFICATION NO.: 2282-350-158-158  
 982

NAME: MILLSTONE 3      OPERATION AND MAINTENANCE      SHT. NO.: SDS-6 OF 13  
 CLIENT: NORTHEAST UTILITIES SERVICE CO.      MANUAL NO.: DIM-158-2A      DATE: 08/20/84

COMPILED BY: T. M. RILEY

Nonmetallic Subcomponent	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Diaphragm	EPT	40+	1.3 x 10 <sup>1</sup>	185	8.77 x 10 <sup>4</sup>	300	AC	NMR-15, NMA-1
Gasket	EPT	40+	1.3 x 10 <sup>1</sup>	185	8.77 x 10 <sup>4</sup>	300	AC	NMR-15, NMA-1
"O" Rings	EPT	40+	1.3 x 10 <sup>1</sup>	185	8.77 x 10 <sup>4</sup>	300	AC	NMR-15, NMA-1
Stem Washer	Polyethylene	N/A	1.3 x 10 <sup>1</sup>	185	3.8 x 10 <sup>4</sup>	150	AE	NMR-30 EAS-2
Lubricant	Dow-Corning No. 111 Silicone	N/A	1.3 x 10 <sup>1</sup>	185	No data available	400	AE	NMR-93 EAS-6
Lubricant	Sunplex No. 1 EP Grease	N/A	N/A	N/A	See Mobil equivalent	N/A	N/A	N/A
Lubricant (Mobil eq. to Sunplex No. 1)	Mobilith AW 1	N/A	1.3 x 10 <sup>1</sup>	185	No data available	350	AE	NMR-96 EAS-6

\*No Mobil equivalent available  
 AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 D - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34 MARK NO.: 35111\*V079.080, DRAWING NO(S): 2262.350-158-002B SPECIFICATION NO.: 2262.350-158

OPERATION AND MAINTENANCE MANUAL NO.: OIM-158-2A

NAME: MILLSTONE 3 DATE: 08/20/84

CITIZEN: NORTHEAST UTILITIES SERVICE CO.

COMPILED BY: T. M. RILEY

Service Life (Years) By Thermal Aging Calculation (See Ref. NM)

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (Rads)	Max. Service Temperature (°F)		
Diaphragm	EPT	40+	2.05 x 10 <sup>6</sup>	120	8.77 x 10 <sup>6</sup>	300	AE	NMR-15, MMA-1, EAS-1
"O" Rings	EPT	40+	2.05 x 10 <sup>6</sup>	120	8.77 x 10 <sup>6</sup>	300	AE	NMR-15, MMA-1, EAS-1
Shim Washer	Polyethylene	N/A	2.05 x 10 <sup>6</sup>	120	3.8 x 10 <sup>6</sup>	150	AE	NMR-30, EAS-2
Lubricant	Dow-Corning No. 111 Silicone	N/A	2.05 x 10 <sup>6</sup>	120	No data available	400	AE	NMR-93, EAS-6
Lubricant	Sunaplex No. 1 EP Grease	N/A	N/A	N/A	See Mobil equivalent	N/A	N/A	N/A
Lubricant (Mobil eq to Sunaplex No. 1)	Mobilith AW 1	N/A	2.05 x 10 <sup>6</sup>	120	No data available	350	AE	NMR-86, EAS-6

\*This value represents the total dose to which the valves are exposed. It includes the harsher 40 yr life plus accident environmental dose (7 x 10<sup>6</sup> Rads), the 2 in. pipe primary coolant 40 yr dose (0.8 x 10<sup>6</sup> Rads gamma, 1.4 x 10<sup>6</sup> Rads Beta), and the 2 in. pipe pressurized LOCA dose (1.85 x 10<sup>6</sup> Rads gamma, 1.65 x 10<sup>6</sup> Rads Beta)

AC = Acceptable by Comparison  
 AE = Acceptable by Evaluation  
 O = Outstanding  
 N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179.34

MARK NO.: 3CCI\*VGG# 8  
3CCI\*VGG# 1

DRAWING NO(S): 2282.350-158-071C

SPECIFICATION NO.: 2282.350-158

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-158-2B

SHT. NO.: 505-7 OF 13

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 08/20/84

COMPILED BY: T. M. RILEY

Subcomponent	Identification	Service Life (Years) By Thermal Aging Calculation (See Ref. No.)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Diaphragm	EPDM	40+	2.6 x 10 <sup>6</sup>	120	8.77 x 10 <sup>6</sup>	300	AC	NMR-15, NMA-1
Gasket	EPDM	40+	2.6 x 10 <sup>6</sup>	120	8.77 x 10 <sup>6</sup>	300	AC	NMR-15, NMA-1
"O" Rings Dash No. 116	EPDM	40+	2.6 x 10 <sup>6</sup>	120	8.77 x 10 <sup>6</sup>	300	AC	NMR-15, NMA-1
Shim Washer	Polyethylene	N/A	2.6 x 10 <sup>6</sup>	120	3.8 x 10 <sup>6</sup>	150	AE	NMR-30 EAS-2
"O" Rings Dash No. 012	EPDM	40+	2.6 x 10 <sup>6</sup>	120	8.77 x 10 <sup>6</sup>	300	AC	NMR-15, NMA-1
Lubricant*	Dow-Corning No. 111 Silicone	N/A	2.6 x 10 <sup>6</sup>	120	No data available	400	AE	NMR-93 EAS-6
Lubricant	Sunaplex No. 1 EP Grease	N/A	N/A	N/A	See Mobil equivalent	N/A	N/A	N/A
Lubricant (Mobil eq to Sunaplex No. 1)	Mobilith AW 1	N/A	2.6 x 10 <sup>6</sup>	120	No data available	350	AE	NMR-96 EAS-6

\*No Mobil equivalent available

AC = Acceptable by Comparison

AE = Acceptable by Evaluation

O = Outstanding

N/A = Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179-34

MARK NO : 3CVS\*V013  
3DGS\*V824  
3VRS\*V992

DRAWING NO(S) : 2282-350-15B 001C

SPECIFICATION NO. : 2282-350-15B

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-158-2B

SHT. NO : SDS-8 OF 13

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 08/20/84

COMPILED BY : I. M. RILEY

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. IM)	Harsh Environment		Material Data		Status	Reference
Normmetallic Subcomponent	Material		Radia- tion (Rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Diaphragm	EPT	40*	1.0 x 10 <sup>4</sup>	350	8.77 x 10 <sup>4</sup>	350	AE	NMR-15, NMA-1, EAS-1
"O" Rings	EPT	40*	1.0 x 10 <sup>4</sup>	350	8.77 x 10 <sup>4</sup>	350	AE	NMR-15, NMA-1, EAS-1
Shim Washer	Polyethylene	N/A	1.0 x 10 <sup>4</sup>	350	3.8 x 10 <sup>3</sup>	150	AE	NMR-30 EAS-2
Lubricant*	Dow-Corning No. 111 Silicone	N/A	1.0 x 10 <sup>4</sup>	350	No data available	400	AE	NMR-93 EAS-6
Lubricant	Sunaplex No. 1 EP Grease	N/A	N/A	N/A	See Mobil equivalent	N/A	N/A	N/A
Lubricant (Mobil eq to Sunaplex No. 1)	Mobilith AW 1	N/A	1.0 x 10 <sup>4</sup>	350	No data available	350	AE	NMR-96 EAS-6

\*No Mobil equivalent available

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
U - Outstanding  
N/A - Not Applicable



## SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34 MARK NO.: 3GWS\*951,952 DRAWING NO(S): 2282.350-158-056B

SPECIFICATION NO.: 2282.350-158

NAME: MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-158-28

SHT. NO.: 505-9 OF 13

CLIENT: NORTHEAST UTILITIES SERVICE CO

DATE: 08/20/84

COMPILED BY: T. M. RILEY

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation {See Ref. NM}	Harsh Environment		Material Data		Status	Reference
			Radia- tion (Rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Diaphragm	EPI	40*	$1.7 \times 10^7$	200	$8.77 \times 10^4$	350	AE	NMR-15, NMA-1, EAS-1
"O" Rings	EPI	30*	$1.7 \times 10^7$	200	$8.77 \times 10^4$	350	AE	NMR-15, NMA-1, EAS-1
Stem Washer	Polyethylene	N/A	$1.7 \times 10^7$	200	$3.8 \times 10^4$	150	AE	NMR-30 EAS-2
Lubricant*	Dow Corning No. 111 Silicone	N/A	$1.7 \times 10^7$	200	No data available	400	AE	NMR-93 EAS-6
Lubricant	Sunaplex No. 1 EP Grease	N/A	N/A	N/A	See Mobil equivalent	N/A	N/A	N/A
Lubricant (Mobil eq) to Sunaplex No. 1	Mobilith AW 1	N/A	$1.7 \times 10^7$	200	No data available	350	AE	NMR-96 EAS-6

\*No Mobil equivalent available

Ac - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 d - Outstanding  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34 MARK NO : 3015\*V019.01B, DRAWING NO(S) : 2282.350-158-001  
019.022

SPECIFICATION NO. : 2282.350-158

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM-159-2A

SHT. NO. : SDS-10 OF 13

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 08/20/84

COMPILED BY : T. M. RILEY

Subcomponent	Identification	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation* (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Diaphragm	EPT	40*	2.6 x 10 <sup>4</sup>	350	8.77 x 10 <sup>4</sup>	300	AE	NMR-15 NMA-1 EAS-1, EAS-5
GasJet	EPT	40*	2.6 x 10 <sup>4</sup>	350	8.77 x 10 <sup>4</sup>	300	AE	NMR-15 NMA-1 EAS-1, EAS-5
"O" Rings	EPT	40*	2.6 x 10 <sup>4</sup>	350	8.77 x 10 <sup>4</sup>	300	AE	NMR-15 NMA-1 EAS-1, EAS-5
Shim Washer	Polyethylene	N/A	2.6 x 10 <sup>4</sup>	350	3.8 x 10 <sup>4</sup>	150	AE	NMR-30 EAS-2
Lubricant**	Dow-Corning No. 111 Silicone	N/A	2.6 x 10 <sup>4</sup>	350	No data available	400	AE	NMR-93 EAS-6
Lubricant	Sunaplex No. 1 EP Grease	N/A	N/A	N/A	See Mobil equivalent	N/A	N/A	N/A
Lubricant (Mobil eq. to Sunaplex No. 1)	Mobilith AW 1	N/A	2.6 x 10 <sup>4</sup>	350	No data available	350	AE	NMR-96 EAS-6

\*This radiation dose is derived from the reactor containment 40 yr life plus accident dose of 1 x 10<sup>4</sup> Rads and the pressurized LOCA Beta Dose of 1.6 x 10<sup>4</sup> Rads (airborne)

\*\*No Mobil equivalent available

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
B - Outstanding  
N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO. : 12179-34

MARK NO. : SEE CRS-5

DRAWING NO(S) : 2282-350-158-002B

SPECIFICATION NO. : 2282-350-158

NAME : MELLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-158-2A

SHT. NO. : SDS-11 OF 13

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 08/20/84

COMPILED BY : T. M. RILEY

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation* (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Diaphragm	EPI	40*	1.6 x 10*	135	8.77 x 10*	300	AE	NMR-15 NMA-1, EAS-1
Gasket	EPI	40*	1.6 x 10*	135	8.78 x 10*	300	AE	NMR-15 NMA-1, EAS-1
"O" Rings	EPI	40*	1.6 x 10*	135	8.77 x 10*	300	AE	NMR-15 NMA-1, EAS-1
Shim Washer	Polyethylene	N/A	1.6 x 10*	135	3.8 x 10*	150	AE	NMR-30 EAS-2
Lubricant**	Dow-Corning No. 111 Silicone	N/A	1.6 x 10*	135	No data available	400	AE	NMR-93 EAS-6
Lubricant	Sunaplex No. 1 EP Grease	N/A	N/A	N/A	See Mobil equivalent	N/A	N/A	N/A
Lubricant (Mobil eq) to Sunaplex No. 1	Mobilith AW 1	N/A	1.6 x 10*	135	See data available	350	AE	NMR-96 EAS-6

\*This radiation dose is derived from the hydrogen recombiner 40 yr life plus accident dose of 4.6 x 10\* Rads the pressurized EDCA Beta Dose of 1.6 x 10\* Rads (airborne)

\*\*No Mobil equivalent available

- AE - Acceptable by Comparison
- AE - Acceptable by Evaluation
- O - Outstanding
- N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO. : 12179-34

MARK NO. : SEE CRS-4

DRAWING NO(S) : 2282.350-158-055A

SPECIFICATION NO. : 2282.350-158

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-158-2B

SHEET NO. : SDS-12 OF 13

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 08/20/84

COMPILED BY : I. M. RILEY

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Diaphragm	EPT	40+	2.3 x 10 <sup>6</sup>	280	8.77 x 10 <sup>6</sup>	350	AE	NMR-15 NMA-1, EAS-3
Diaphragm Support Sheet	Polyurethane	N/A	2.3 x 10 <sup>6</sup>	280	1 x 10 <sup>7</sup>	230	AE	NMR-79 EAS-4
Gasket	EPT	40+	2.3 x 10 <sup>6</sup>	280	8.77 x 10 <sup>6</sup>	350	AE	NMR-15 NMA-1, EAS-3
"O" Rings	EPT	40+	2.3 x 10 <sup>6</sup>	280	8.77 x 10 <sup>6</sup>	350	AE	NMR-15 NMA-1, EAS-3
Stem Washer	Polyethylene	N/A	2.3 x 10 <sup>6</sup>	280	3.8 x 10 <sup>6</sup>	150	AE	NMR-30 EAS-2
Lubricant <sup>1</sup>	Dow Corning No. 111 Silicone	N/A	2.3 x 10 <sup>6</sup>	280	No data available	400	AE	NMR-93 EAS-6
Lubricant	Sunaplex No. 1 EP Grease	N/A	N/A	N/A	No Mobil equivalent	N/A	N/A	N/A
Lubricant (Mobil eq. to Sunaplex No. 1)	Mobilith AW 1	N/A	2.3 x 10 <sup>6</sup>	280	No data available	350	AE	NMR-96 EAS-6

<sup>1</sup>No Mobil equivalent available

AE - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34

MARK NO. : SEE CRS-4

DRAWING NO(S) : 2282-350-158-002B

SPECIFICATION NO. : 2282-350-158

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM-158-2A,B

SHEET NO. : SDS-13 OF 13

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 08/20/84

COMPILED BY : T. M. RILEY

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature* (°F)	Threshold Radiation (rads)	Max Service Temperature (°F)		
Diaphragm	EPT	40*	2.3 x 10 <sup>4</sup>	280	8.77 x 10 <sup>4</sup>	350	AE	NMR-15 NMA-1 EAS-3
Gasket	EPT	40*	2.3 x 10 <sup>4</sup>	280	8.77 x 10 <sup>4</sup>	350	AE	NMR-15 NMA-1 EAS-3
"O" Rings	EPT	40*	2.3 x 10 <sup>4</sup>	280	8.77 x 10 <sup>4</sup>	350	AE	NMR-15 NMA-1 EAS-3
Shim Washer	Polyethylene	N/A	2.3 x 10 <sup>4</sup>	280	3.8 x 10 <sup>4</sup>	150	AE	NMR-30 EAS-2
Lubricant**	Dow Corning No. 111 Silicone	N/A	2.3 x 10 <sup>4</sup>	280	No data available	400	AE	NMR-93 EAS-6
Lubricant	Sunplex No. 1 EP Grease	N/A	N/A	N/A	See Mobil equivalent	N/A	N/A	N/A
Lubricant (Mobil eq. to Sunplex No. 1)	Mobilith AW 1	N/A	2.3 x 10 <sup>4</sup>	280	No data available	350	AE	NMR-96 EAS-6

\* This is the maximum harsh environment temperature to which these valves are exposed.  
 \*\* To Mobil equivalent available

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 D - Outstanding  
 N/A - Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179-34

MARK NO : SEE CRS 1  
(FIRST THREE  
GROUPINGS)

DRAWING NO(S) : 2362 050 161  
25 THROUGH 31, 102

SPECIFICATION NO. : 2362.050-161

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-161-1A

SHT. NO. : SDS-1 OF 5

DATE : 07/25/84

CLIENT : NORTHEAST UTILITIES SERVICE CO.

COMPILED BY : T M RILEY

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radia- tion (Rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Packing	Crane 1871 (Asbestos)	N/A	*	*	1x10 <sup>12</sup>	1200	AC	NMR-4
Lubricant	Gulf Supreme Grease #1	Discontinued	Recommend Mobil equivalent			N/A	N/A	N/A
Lubricant	Molykote M 8800 Spray	Discontinued	N/A	N/A	N/A	N/A	N/A	N/A
Lubricant (Mobil eq to Gulf Supreme #1)	Mobilplex 45	N/A	(Note 1)	(Note 1)	No data available	300	AE	NMR-100 EAS-3
Lubricant (Suggested substitute for Molykote M 8800)	Molykote 321 R	N/A	(Note 1)	(Note 1)	N/A	N/A	AE	EAS-3

\*All harsh environments are below the material's threshold radiation and maximum service temperature level.

- AC - Acceptable by Comparison
- AE - Acceptable by Evaluation
- D - Outstanding
- N/A - Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179 34 MARK NO : 3CCP+V003

DRAWING NO(S) : 2362 050-161-034

SPECIFICATION NO. : 2362.050-161

NAME : MILESTONE 3

OPERATION AND MAINTENANCE

SHT. NO. : \* SDS-2 OF 8

MANUAL NO. : OIM 161-1A

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 07/25/84

COMPILED BY : T.M. RILEY

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> Subcomponent	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Cover Gasket	Asbestos	N/A	$1.3 \times 10^4$	185	$1 \times 10^{10}$	750	AC	NMR-42

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 U - Outstanding  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34 MARK NO : JCCP\*V024, 013  
058, 068, 079  
NAME : MILESTONE 3

DRAWING NO(S) : 2362.050-161-028

SPECIFICATION NO. : 2362.050-161

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-161-1A

SHT. NO. : SDS-3 OF 5

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 07/25/84

COMPILED BY : T. M. RILEY

Subcomponent Identification	Material	Service Life {Years} By Thermal Aging Calculation {See Ref. NM}	Harsh Environment		Material Data		Status	Reference
			Radia- tion {Rads}	Temper- ature {°F}	Threshold Radiation {rads}	Max. Service Temperature {°F}		
Packing	Crane 1871 (Asbestos)	N/A	*	*	1x10 <sup>10</sup>	1200	AC	NMR-4
Lubricant	Gulf Supreme Grease #1	Discontinued	Recommend Mobil equivalent			N/A	N/A	N/A
Lubricant	Molykote M 8800 Spray	Discontinued	N/A	N/A	N/A	N/A	N/A	N/A
Lubricant	Gulf EP-0 Grease	N/A	Recommend Mobil equivalent			N/A	N/A	N/A
Lubricant {Mobil eq. for Gulf Supreme #1}	Mobilplex-45	N/A	{Note 1}	{Note 1}	No data available	300	AE	NMR-100 EAS-3
Lubricant {Mobil eq. for Gulf EP-0}	Mobilux EP-0	N/A	{Note 1}	{Note 1}	3.8x10 <sup>9</sup>	250	AE	NMR-91 EAS-3
Lubricant {suggested substitute for Molykote M 8800}	Molykote 321 R	N/A	{Note 1}	{Note 1}	N/A	N/A	AE	EAS-3

\*All harsh environments are below the material's threshold radiation and maximum service temperature level.

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
E - Outstanding  
N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179-34

MARK NO :

3EWS\*MOV35A,B,C,D DRAWING NO(S) : 2362.050-161-15, 55,  
3EWS\*V017, 24, 31 6, 33

SPECIFICATION NO. : 2362.050-161

NAME : MILESTONE 3

OPERATION AND MAINTENANCE

MANUAL NO. : OIM-161-1A

SHT. NO. : SDS-4 OF 5

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 07/25/84

COMPILED BY : T M RILEY

Subcomponent	Identification Material	Service Life (Years) By Thermal Aging Calculation {See Ref. NM}	Harsh Environment		Material Data		Status	Reference
			Radiation {Rads}	Temperature {°F}	Threshold Radiation {rads}	Max. Service Temperature {°F}		
Packaging	Crane 1871 {Asbestos}	N/A	1.1x10 <sup>4</sup>	300	1x10 <sup>4</sup>	1200	AC	NMR-4
Yoke Bolt OIL Seal	Garlock Kloxone {Nitrile}	13*	1.1x10 <sup>4</sup>	300	1.0x10 <sup>4</sup>	225	AE	NMR-6 EAS-1
Lubricant	Gulf Supreme Grease #1	Discontinued	Recommend Mobil equivalent			N/A	N/A	N/A
Lubricant	Molykote M 8800 Spray	Discontinued	N/A	N/A	N/A	N/A	N/A	N/A
Lubricant {Mobil eq for Gulf Supreme #1}	Mobilplex 45	N/A	1.1x10 <sup>4</sup>	300	No data available	300	AE	NMR-100 EAS-3
Lubricant {Suggested substitute for Molykote M 8800}	Molykote 321 R	N/A	{Note 1}	{Note 1}	N/A	N/A	AE	EAS-3

\*Normal operating temperature conditions only (accident conditions not included as these components are not required to operate for accident mitigation or safe shutdown)

- AC - Acceptable by Comparison
- AE - Acceptable by Evaluation
- D - Outstanding
- N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34 MARK NO.: 3EWA\*V004, 18

DRAWING NO(S): 2362.050-161-33

SPECIFICATION NO.: 2362.050-161

NAME: MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-161-1A

SHT. NO.: SDS-5 OF 5

CLIENT: NORTHEAST UTILITIES SERVICE CO

DATE: 07/25/84

COMPILED BY: T. M. RILEY

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Packing	Crane 1871 (Asbestos)	N/A	2.6x10 <sup>4</sup>	146	1x10 <sup>4</sup>	1200	AC	NMR-4
Yoke Nut Oil Seal	Garlock Kloxure (Nitrile)	13*	2.6x10 <sup>4</sup>	146	1.0x10 <sup>4</sup>	225	AE	NMR-6, NMA-2 EAS-2
Lubricant	Gulf Supreme Grease #1	Discontinued	Recommend Mobil equivalent			N/A	N/A	N/A
Lubricant	Molykote M 8800 Spray	Discontinued	N/A	N/A	N/A	N/A	N/A	N/A
Lubricant (Mobil eq for Gulf Supreme No. 1)	Mobilplex-45	N/A	(Note 1)	(Note 1)	No data available	300	AE	NMR-100 EAS-3
Lubricant (suggested substitute for Molykote M 8800)	Molykote 321-R	N/A	(Note 1)	(Note 1)	N/A	N/A	AE	EAS-3

\*Normal operating temperature conditions only (accident conditions not included as these components are not required to operate for accident mitigation or safe shutdown)

Note 1: See EAS-3

- AC - Acceptable by Comparison
- AE - Acceptable by Evaluation
- U - Outstanding
- N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO.: 12179 34

I.D. NO.: SEE CRS-1  
(EXCEPT VSS150 BB-2)

NAME: MILLSTONE 3

CLIENT: NORTHEAST UTILITIES SERVICE CO.

COMPILED BY: S. MCINALL

DRAWING NO(S): 2362.150-162-002  
THROUGH 058  
OPERATION AND MAINTENANCE  
MANUAL NO.: DIM-162-1A,2A,3A

SPECIFICATION NO.: 2362.150-162

SHT. NO.: SDS-1 OF 2

DATE: 08/14/84

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Packing	Crane 1871 (Asbestos)	N/A	*	*	1x10 <sup>10</sup>	1200	AC	NMR-4
Packing Ring	Braided asbestos	N/A	*	*	1x10 <sup>10</sup>	1200	AC	NMR-4
Gasket	Asbestos	N/A	*	*	1x10 <sup>10</sup>	1200	AC	NMR-4
Lubricant	Molykote 505	N/A	***	***	1x10 <sup>8</sup>	2000	AC	NMR-82

\*All harsh environments are below this material's threshold radiation and maximum service temperature level.  
\*\*\*Lubricant is used for assembly only and is not required for valve operation.

AC = Acceptable by Comparison  
AE = Acceptable by Evaluation  
O = Outstanding  
N/A = Not Applicable



## SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34 I.D. NO.: VSS150-BB-2  
 (MARK NO. 3FWS\*V105,  
 NAME: MILLSTONE 3 119, 128, 140, 161)

DRAWING NO(S): 2362.150-162-002-056

SPECIFICATION NO.: 2362.150-162

OPERATION AND MAINTENANCE  
 MANUAL NO.: DIM-162-1A,2A,3A

SHT. NO.: SDS-2 OF 2

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 08/14/84

COMPILED BY: S. MCINALL

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (Rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Diaphragm Retainer Gasket	Grafoil	N/A	1x10 <sup>6</sup>	350	9.1x10 <sup>6</sup>	500	AC	NMR-20
Seal Ring Gasket	Grafoil	N/A	1x10 <sup>6</sup>	350	9.1x10 <sup>6</sup>	500	AC	NMR-20
Seal Pad	Grafoil	N/A	1x10 <sup>6</sup>	350	9.1x10 <sup>6</sup>	500	AC	NMR-20
Lubricant	Molykote 505**	N/A	1x10 <sup>6</sup>	350	1x10 <sup>6</sup>	2000	AC	NMR-82

\*\*Lubricant is used for assembly only and is not required for valve operation.

A: - Acceptable by Comparison  
 AI - Acceptable by Evaluation  
 B - Outstanding  
 N/A - Not Applicable



## SUBCOMPONENT DATA SHEET

JOB NO : 12179-11 MARK NO : JCCP0001, 002

DRAWING NO(S) : 2362 650 172-001C  
2362 650 172-002C

SPECIFICATION NO. : 2362 650 172

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM 172-1A

SHEET NO. : SDS 1 OF 1

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 6/15/84

COMPILED BY : S. MCINALE

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (Rads)	Max. Service Temperature (°F)		
Nonmetallic Subcomponent								
Valve Seat Seal	Buna N	13	$1.3 \times 10^4$	185	$1.0 \times 10^4$	225	AC	NMR-6 NMA-2
Body Lug Bearing	Teflon	40	$1.3 \times 10^4$	185	$1.5 \times 10^4$	400	AC	NMR-33 NMA-3
Plate Lug Bearing	Teflon	40	$1.3 \times 10^4$	185	$1.5 \times 10^4$	400	AC	NMR-33 NMA-3

AC Acceptable by Comparison  
 AE Acceptable by Evaluation  
 D Outstanding  
 N/A Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179-34      MARK NO : 3MSS-CIV27A      DRAWING NO(S) : 2362-750-177-00IC      SPECIFICATION NO. : 2362-750-177  
 NAME : MILESTONE 3      3MSS-CIV27B      OPERATION AND MAINTENANCE      SHEET NO. : SDS-1 OF 2  
                                  3MSS-CIV27C      MANUAL NO. : OIM-177-1A  
                                  3MSS-CIV27D  
 CLIENT : NORTHEAST UTILITIES SERVICE CO      DATE : 06/22/84  
 COMPILED BY : G. POWERS

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
Subcomponent	Material		Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Spring Gasket	Asbestos	N/A	1 x 10 <sup>4</sup>	300	1 x 10 <sup>4</sup>	1200	AC	NMR-4
Insulation	Asbestos	N/A	1 x 10 <sup>4</sup>	300	1 x 10 <sup>4</sup>	1200	AC	NMR-4

Note 1: The following lubricants were listed in the manufacturer's Installation, Operation, and Maintenance Manual as used during valve assembly:

- Molyt 500
- Poly Butyl Cuprysil grease
- Rhodostil-Fluid silicon oil

These lubricants were not evaluated further due to their use during assembly only and not for regular maintenance and operation purposes.

Note 2: The solenoid valves of this specification are qualified under the IEEE qualification program.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 B - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO : ALL CHECK  
VALVES AS  
LISTED ON  
CRS-1

DRAWING NO(S) : 2362 750 177-001C

SPECIFICATION NO. : 2362 750 177

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-177-1A

SHT. NO. : SDS-2 OF 2

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 06/22/84

COMPILED BY : G POWERS

<u>Subcomponent Identification</u>		<u>Service Life</u> <u>(Years) By</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Subcomponent</u>	<u>Material</u>	<u>Thermal Aging</u> <u>Calculation</u> <u>(See Ref. NM)</u>	<u>Radia-</u> <u>tion</u> <u>(Rads)</u>	<u>Temper-</u> <u>ature</u> <u>(°F)</u>	<u>Threshold</u> <u>Radiation</u> <u>(rads)</u>	<u>Max. Service</u> <u>Temperature</u> <u>(°F)</u>		
Spiral Gasket	Asbestos	N/A	$1.1 \times 10^4$	300	$1 \times 10^{1*}$	1200	AC	NMR-4
Command Blk Gasket	Asbestos	N/A	$1.1 \times 10^4$	300	$1 \times 10^{1*}$	1200	AC	NMR-4

AC = Acceptable by Comparison  
AE = Acceptable by Evaluation  
O = Outstanding  
N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO : 3MSS\*RV22A,B,C,D  
3MSS\*RV23A,B,C,D  
3MSS\*RV24A,B,C,D  
3MSS\*RV25A,B,C,D  
3MSS\*RV26A,B,C,DDRAWING NO(S) : 2472.110-180-  
1C, 2C, 255E, 256E  
257E, 258E, 259E,  
260E, 261E

SPECIFICATION NO. : 2472.110-180

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-180-1C

SHT. NO. : SDS-1 OF 1

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 7/10/84

COMPILED BY : G POWERS

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Subcomponent</u>	<u>Material</u>		<u>Radia- tion</u> (Rads)	<u>Temper- ature</u> (°F)	<u>Threshold Radiation</u> (rads)	<u>Max. Service temperature</u> (°F)		
Lubricant	Molykote 505*	N/A	1.1x10*	300	1x10*	2000	AC	NMR-82
Lubricant	Dow Corning 41*	N/A	1.1x10*	300	5x10*	550	AC	NMR-81
Lubricant	Fel-Pro N-5000*	N/A	1.1x10*	300	9.1x10*	2600	AC	NMR-64

\*No Model equivalent available

NOTE: Molykote 505 and Dow Corning 41 are interchangeable with Fel-Pro N 5000 as stated in O I M 180-1C.

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
O - Outstanding  
N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179-34 MARK NO : VARIOUS

DRAWING NOS : 2472.110-186-037G  
THRU 040L  
2472.110-186-042F  
2472.110-186-122K  
2472.110-186-196F  
THRU 198E  
2472.110-186-201C  
2472.110-186-398G  
THRU 401C  
2472.110-186-405B

SPECIFICATION NO.: 2472.110-186

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : DIM-186-1B

SHEET NO.: SDS-1 OF 8

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE: 7/13/84

COMPILED BY: K. MANKARIOUS

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radia- tion (Rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Packing	Graphite Yarn	N/A	*	*	9.1 x 10 <sup>4</sup>	500	AC	NMR-20
Packing	Asbestos	N/A	*	*	1 x 10 <sup>4</sup> **	1,200	AC	NMR-4
Packing	Graphited Asbestos	N/A	*	*	1 x 10 <sup>4</sup> **	1,200	AC	NMR-4
Bellows Gasket	Asbestos	N/A	*	*	1 x 10 <sup>4</sup> **	1,200	AC	NMR-4
Graide Body Gasket	Asbestos	N/A	*	*	1 x 10 <sup>4</sup> **	1,200	AC	NMR-4

\*All harsh environments at the plant are below the material threshold radiation and maximum service temperature level.

NOTE: Various valves have various combinations of the above listed subcomponents. All of the above listed materials are qualified for all harsh plant environments.

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
D - Outstanding  
N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34

MARK NO : 3CHS-RV8120

DRAWING NO(S) : 2472-110-186-0411  
2472-110-186-2000

SPECIFICATION NO. : 2472-110-186

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-186-1B

SHT. NO. : SDS-2 OF 8

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 7/13/84

COMPILED BY : K. MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life</u> <u>(Years) By</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>	<u>Thermal Aging</u> <u>Calculation</u> <u>(See Ref. NM)</u>	<u>Radia-</u> <u>tion</u> <u>(Rads)</u>	<u>Temper-</u> <u>ature</u> <u>(°F)</u>	<u>Threshold</u> <u>Radiation</u> <u>(rads)</u>	<u>Max. Service</u> <u>Temperature</u> <u>(°F)</u>		
Belongs Gasket	Asbestos	N/A	*	*	$1 \times 10^{1*}$	1,200	AC	NMR-4
Body Gasket	Asbestos	N/A	*	*	$1 \times 10^{1*}$	1,200	AC	NMR-4
"O" Ring Seat Seal	Ethylene Propylene	40+	$3.3 \times 10^{***}$	300	$8.77 \times 10^*$	400	AE	NMR-15 NMA-8 EAS-1

\*All harsh environments at the plant are below the material threshold and maximum service temperature level.  
 \*\*Combined gamma and beta doses for both the environment and the process fluid.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179-34 MARK NO : 3CHS\*RV8121

DRAWING NO(S) : 2472.110-186-04 III

SPECIFICATION NO. : 2472.110-186

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM-186-16

SHT. NO. : SDS-3 OF 8

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 7/13/84

COMPILED BY : K MANKARIJUS

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. IM)	Harsh Environment		Material Data		Status	Reference
Nonmetallic Subcomponent	Material		Radia- tion (Rad.)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Bellovs Gasket	Asbestos	N/A	*	*	$1 \times 10^{10}$	1,200	AC	NMR-4
Body Gasket	Asbestos	N/A	*	*	$1 \times 10^{10}$	1,200	AC	NMR-4

\*All harsh environments at the plant are below the material threshold radiation and maximum service temperature level.  
\*\*Combined gamma and beta doses for both the environment and the process fluid.

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
O - Outstanding  
N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO. : 12179-34      MARK NO. : 3CHS-RV8123

DRAWING NO(S) : 2472-110-186-04 III

SPECIFICATION NO. : 2472-110-186

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE

MATERIAL NO. : OIM-186-18

SHEET NO. : SDS-4 OF 8

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 7/13/84

COMPILED BY : K. MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life</u> {Years} By Thermal Aging Calculation (See Ref. NM)	<u>Harsh Environment</u> Radia- tion (Rads)		<u>Material Data</u> Threshold Radiation (rads)		<u>Status</u>	<u>Reference</u>
<u>Subcomponent</u>	<u>Material</u>			Temper- ature (°F)		Max. Service Temperature (°F)		
Belloirs Gasket	Asbestos	N/A	*	*	$1 \times 10^{10}$	1,200	AC	NMR-4
Body Gasket	Asbestos	N/A	*	*	$1 \times 10^{10}$	1,200	AC	NMR-4

\*All harsh environments at the plant are below the material threshold radiation and maximum service temperature level.  
 \*\*Combined gamma and beta doses for both the environment and the process fluid.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34

MARK NO.: 3CHS'RV8124

DRAWING NO(S): 2472.110-186-04 III

SPECIFICATION NO.: 2472.110-186

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MATERIAL NO.: OIM-186-1B

SHT. NO.: SDS-5 OF 8

CLIENT: NORTHEAST UTILITIES SERVICE CO

DATE: 7/13/84

COMPILED BY: K. MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Subcomponent</u>	<u>Material</u>		<u>Radia- tion</u> (Rads)	<u>Temper- ature</u> (°F)	<u>Threshold Radiation</u> (rads)	<u>Max. Service Temperature</u> (°F)		
Bellows Gasket	Asbestos	N/A	*	*	$1 \times 10^{10}$	1,200	AC	NMR-4
Body Gasket	Asbestos	N/A	*	*	$1 \times 10^{10}$	1,200	AC	NMR-4

\*All harsh environments at the plant are below the material threshold radiation and maximum service temperature levels  
\*\*Combined gamma and beta doses for both the environment and the process fluid.

AC - Acceptable by Comparison  
AE - acceptable by Evaluation  
U - Outstanding  
N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO. 12179-34 MARK NO. 351B\*RV01,05,06,  
11,12 DRAWING NO(S): 2472-110-186-403C  
404B  
406A

SPECIFICATION NO.: 2472-110-186

NAME: MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: CIM-186-1B

SHEET NO.: SDS-6 OF 8

CLIENT: NORTHEAST UTILITIES SERVICE CO

DATE: 7/13/84

COMPILED BY: K. MANKARTOUS

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation {See Ref. NM}	Harsh Environment		Material Data		Status	Reference
Norm. to EED Subcomponent	Material		Radia- tion {Rads}	Temper- ature {°F}	Threshold Radiation {rads}	Max. Service Temperature {°F}		
Bellows Gasket	Nonasbestos* Composition	N/A	**	**	$1 \times 10^4$	225	AC	NMR-6
Body Gasket	Nonasbestos* Composition	N/A	**	**	$1 \times 10^4$	225	AC	NMR-6
"O" Ring Seal	Viton A	40*	**	**	$5 \times 10^4$	450	AC	NMR-83 NMA-6

\*Nonasbestos composition on drawing numbers 2472-110-186-403, 404 implies Armstrong IN-9000 for the bellows gasket and Klinger SLL for the body gasket (Attachment "A"). This material consists of polyacrylonitrile butadiene synthetic rubber binder (Buna N), synthetic organic fibers (made of Kevlar polyarymid fiber and kynol phenolic fiber) and domestic clay filler (Kaolin type) (Attachment "B").

\*\*These surplus valves are evaluated to be used in environmental zones of less than  $1 \times 10^4$  rads and 225 F in case they are used in a harsher environment, evaluation should be performed considering the effects in Attachment "C".

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
U - Outstanding  
N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179 34      MARK NO : 3SER-RV01, 02, 03, 04, 05, 06, 07      DRAWING NO(S) : 2472.110-186-407A      SPECIFICATION NO. : 2472.110-186

NAME : MILESTONE 3      OPERATION AND MAINTENANCE MANUAL NO. : OIM-186-1B      SHEET NO. : SDS-7 OF 8

CLIENT : NORTHEAST UTILITIES SERVICE CO.      DATE : 7/13/84

COMPILED BY : K MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By Thermal Aging Calculation (See Ref. NM)	<u>Harsh Environment</u> Radia-      Temper- tion      ature (Rads)      (°F)		<u>Material Data</u> Threshold      Max. Service Radiation      Temperature (rads)      (°F)		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>							
"D" Ring Seat	Viton A	40+	.	.	5 x 10 <sup>4</sup>	450	AC	NMR-83 NMA-6

\*These surplus valves are evaluated to be used in environmental zones of less than 5 x 10<sup>4</sup> rad and 450 F in case they are used in harsher environment, evaluation should be performed.

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
D - Outstanding  
N.A - Not Applicable





## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34

MARK NO : 3M55\*PV20A,B,C,D

DRAWING NO(S) : 2472-110-188-003A

SPECIFICATION NO. : 2472-110-188

NAME : MILESTONE 3

OPERATION AND MAINTENANCE

MANUAL NO. : OIM 188-1A

SHEET NO. : SDS-1 OF 2

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 8/15/84

COMPILED BY : G. POWERS

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. 1M)	Harsh Environment		Material Data		Status	Reference
Nonmetallic Subcomponent	Material		Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Pack ring ring	Graphite filament	N/A	$1.1 \times 10^4$	300	$9.1 \times 10^4$	500	AC	NMR-20
Pack ring ring	Graphite laminar	N/A	$1.1 \times 10^4$	300	$9.1 \times 10^4$	500	AC	NMR-20
Piston ring	Graphite	N/A	$1.1 \times 10^4$	300	$9.1 \times 10^4$	500	AC	NMR-20
Cage gasket	Asbestos	N/A	$1.1 \times 10^4$	300	$1 \times 10^{10}$	1200	AC	NMR-4
Seal ring gasket	Asbestos	N/A	$1.1 \times 10^4$	300	$1 \times 10^{10}$	1200	AC	NMR-4

AC : Acceptable by Comparison

AE : Acceptable by Evaluation

D : Outstanding

N/A : Not Applicable

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM-188-1A

SHI NO : SDS-2 OF 2

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 8/15/84

COMPILED BY : G. POWERS

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
Homometric Subcomponent	Material		Radia- tion (Rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
70 Type 667NS Actuator								
Diaphragm	Nitrile	N/A	$1.1 \times 10^4$	300	$1 \times 10^4$	225	AE	NMR-6 NMA-2 EAS-1
Gasket	Asbestos	N/A	$1.1 \times 10^4$	300	$1 \times 10^{10}$	1200	AC	NMR-4 NMR-6
	Nitrile	N/A	$1.1 \times 10^4$	300	$1 \times 10^4$	225	AE	NMA-2 EAS-2
O-Ring (2)	Viton	40+	$1.1 \times 10^4$	300	$8.7 \times 10^5$	350	AC	NMR-34 NMA-6
Vent	Valox 311	N/A	$1.1 \times 10^4$	300	$2.0 \times 10^4$	284	AE	NMR-88 EAS-3
Lubricant	Lubriplate Mag-1							See attached letter from manufacturer (NE Control)
Lubricant	NYE Nyogel 718B							

NOTE: Lubricants not further evaluated because used for assembly only.

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
B - Outstanding  
N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34 MARK NO. : 3CCP\*PIA,B,C

DRAWING NO(S) : 2214.412-336-007B  
2214.412-336-008B  
2214.412-336-009B

SPECIFICATION NO. : 2214.412-336

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM 336-1A

SHT. NO. : SDS-1 OF 1

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : SEPTEMBER 21, 1984

COMPILED BY : R.F. CONLON

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> <u>Calculation</u> (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Case Gasket	Anchor Target (Asbestos Buna-N)	13 years (Note 1)	1.3x10 <sup>3</sup>	185	1.0x10 <sup>4</sup>	225	AC	NMA-2 NMR-92
O-Ring	Buna-N	13 years	1.3x10 <sup>3</sup>	185	1.0x10 <sup>4</sup>	225	AC	NMA-2 NMR-6
Cooling Coil Gasket and Bulb Extrusion Dye	Buna-N	13 years	1.3x10 <sup>3</sup>	185	1.0x10 <sup>4</sup>	225	AC	NMA-2 NMR-6
Mechanical Seal Anti X Ring	Teflon (PTFE)	40+	1.3x10 <sup>3</sup>	185	1.5x10 <sup>4</sup>	400	AC	NMA-3 NMR-33
Bearing Lubri- cant	Mobil DTE 24 DTE 797	NA	1.3x10 <sup>3</sup>	185	3.0x10 <sup>4</sup>	170	AE	EAS-1 NMR-95
Coupling Lubri- cant	Mobiltemp No. 1	NA	1.3x10 <sup>3</sup>	185	3.0x10 <sup>4</sup>	300	AC	NMR-89

Note: 1. Thermal aging calculation is based on Buna-N material. Asbestos has a service life of 40+ years.

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
O - Outstanding  
N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34

MARK NO :

DRAWING NO(S) : 2190-430-339-008C

SPECIFICATION NO. : 2190-430-339

31VU\*V1 &amp; 3 (CIV32A8B)

2190-430-339-015D

2190-430-339-102B

NAME : MILESTONE J

OPERATION AND MAINTENANCE

SHT. NO. : SDS-1 OF 2

MANUAL NO. : OIM-339-1A

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 8/27/84

COMPLETED BY : K MANKARIDUS

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radiation (Rads)</u>	<u>Temperature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max Service Temperature (°F)</u>		
Seat	EPT	10*	1.1x10 <sup>4</sup>	185	8.77x10 <sup>4</sup>	300	AC	NMR-15
O Ring	EPT							
Chevron Packing	EPT							
Gasket	Granite	N/A	1.1x10 <sup>4</sup>	185	2.6x10 <sup>7</sup>	400	AC	NMR-90
Grease	Dow Corning III Compound	N/A	1.1x10 <sup>4</sup>	185	N/A	400	AE	NMR-93 EAS-3

## NOTE :

The manual operator of 31VU\*V5 and the valve actuator of 31VU\*V183 are not required during an accident, and have not been evaluated.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 D - Outstanding  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34

MARK NO :

DRAWING NO(S) : 2190-430-339-015D

SPECIFICATION NO. : 2190-430-339

2190-430-339-102B

NAME : MILLSTONE 3

31101V2 &amp; 4 (CIV33A8B)

OPERATION AND MAINTENANCE

SHT. NO. : SDS-2 OF 2

MANUAL NO. : OIM 339-1A

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 8/27/84

COMPILED BY : K. MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Subcomponent</u>	<u>Material</u>		<u>Radia- tion (Rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Seat	EPI							
O Ring	EPI	40*	1.82x10**	350	8.77x10*	300	AE	NMA-1 NMR-15 EAS-0
chevron Packing	EPI							
Gasket	Granite	N/A	1.82x10**	350	2.6x10*	400	AE	NMR-90 EAS-2
Grease	Dow Corning 111 Compound	N/A	1.82x10**	350	N/A	400	AE	NMR-93 EAS-3

## NOTE:

The valve actuator is not required during an accident, and has not been evaluated.

\*The harsh environmental radiation level is the summation of the gamma rads ( $2.2 \times 10^7$ ) and the beta rads ( $1.6 \times 10^8$ ).

AC = Acceptable by Comparison  
 AE = Acceptable by Evaluation  
 O = Outstanding  
 N/A = Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO. : 12179-34      MARK NO. : ALL VALVES LISTED IN CRS 1 OF 2      DRAWING NO(S) : 2282.050-468-005D  
 2282.050-468-006D  
 2282.050-468-007D  
 2282.050-468-008D  
 2282.050-468-009E      SPECIFICATION NO. : 2282.050-468

NAME : MILLSTONE 3      OPERATION AND MAINTENANCE MANUAL NO. : OIM-468-1A      SHE. NO. : SDS-1 OF 3  
 CLIENT : NORTHEAST UTILITIES SERVICE CO.      DATE : 8/20/84  
 COMPILED BY : K. MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging Calculation</u> (See Ref. NM)	<u>Harsh Environment</u> Radiation (Rads)      Temperature (°F)		<u>Material Data</u> Threshold Radiation (rads)      Max. Service Temperature (°F)		<u>Status</u>	<u>Reference</u>
Nonmetallic Subcomponent	<u>Material</u>							
Gasket	Asbestos	N/A	*	*	1 x 10 <sup>11</sup>	1200	AC	NMR-4

\*Asbestos is qualified for all environments of Millstone 3

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable



## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34 MARK NO : JS11-MVB80BA,B,C,D DRAWING NO(S) : 2282.050-468-0044 SPECIFICATION NO. : 2282.050-468  
 NAME : MILESTONE 3 OPERATION AND MAINTENANCE MANUAL NO. : OIM 468-1A SHEET NO. : SDS-2 OF 3  
 CLIENT : NORTHEAST UTILITIES SERVICE CO. DATE : 8/20/84  
 COMPILED BY : K. MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> <u>Calculation</u> (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Gasket	Asbestos	N/A	1.0 x 10 <sup>4</sup>	350	1 x 10 <sup>10</sup>	1200	AC	NMR-4
Packing	Crane 1871 (Asbestos)	N/A	1.0 x 10 <sup>4</sup>	350	1 x 10 <sup>10</sup>	1200	AC	NMR-4
Lubricant	Mobiltemp SHC32*	N/A	1.0 x 10 <sup>4</sup>	350	3 x 10 <sup>8</sup>	350	AC	NMR-99

\*At present the lubricant used is American Oil Company Rykon Grease No. 2E.P. for which no information is available. Lubrication is performed during regularly scheduled shutdown periods for refueling. Mobil equivalent lubricant is Mobiltemp SHC32 and is recommended for use.

Note: Unit torque operators, including their lubricants, are included under IEEE qualification program.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO.: 3RHS\*MV8701A,C  
3RHS\*MV8702B,C

DRAWING NO(S) : 2282.050-468-012D

SPECIFICATION NO.: 2282.050-468

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-468-1A

SHI NO. : SDS-3 OF 3

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 8/20/84

COMPILED BY : K MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> Calculation (See Ref. NM)	<u>Harsh Environment</u> Radiation (Rads)		<u>Material Data</u> Threshold Radiation (rads)		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Temper-</u> <u>ature</u> (°F)		<u>Max. Service</u> <u>Temperature</u> (°F)			
Gasket	Asbestos	N/A	1.0 x 10 <sup>4</sup>	350	1 x 10 <sup>4</sup>	1200	AC	NMR-4
Packring	Crane 1871 (Asbestos)	N/A	1.0 x 10 <sup>4</sup>	350	1 x 10 <sup>4</sup>	1200	AC	NMR-4
Gasket	Asbestos	N/A	1.82 x 10 <sup>4</sup>	350	1 x 10 <sup>4</sup>	1200	AC	NMR-4
Packring	Crane 1871 (Asbestos)	N/A	1.82 x 10 <sup>4</sup>	350	1 x 10 <sup>4</sup>	1200	AC	NMR-4
Lubricant	Mobiltemp SCH32* NA		1.82 x 10 <sup>4</sup>	350	3 x 10 <sup>4</sup>	350	AC	NMR-99

\*At present the lubricant used is American Oil Company Rykon Grease No. 2E.P. for which no information is available. Lubrication is performed during regularly scheduled shutdown periods i.e., for refueling. Mobil equivalent is Mobiltemp SCH32 and is recommended for use.

\*\*The harsh environment radiation level is the summation of the gamma rads (2.2 x 10<sup>4</sup>) and the beta rads (1.6 x 10<sup>4</sup>).

Note: Limit torque operators, including their lubricants are under IEEE qualification program.

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
D - Outstanding  
N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO 12179 11 MARK NO ALL VALVES ON THIS ORDER

DRAWING NO(S) : 2262 350 472 001E, 002A SPECIFICATION NO. : 2262 350 472

NAME : MILESTONE 3

OPERATION AND MAINTENANCE MANUAL NO : DIM-472 1B

SHEET NO. : SDS-1 OF 1

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 6/26/84

COMPILED BY : G. WEBSTER

Subcomponent Identification	Material	Service Life {Years} By Thermal Aging Calculation {See Ref. NM}	Harsh Environment		Material Data		Status	Reference
			Radiation {Rads}	Temperature {°F}	Threshold Radiation {rads}	Max. Service Temperature {°F}		
Packing	Crane Packing 1B7I (asbestos)	N/A	*		$1 \times 10^{10}$	1200	AC	NMR-4
Packing	Crane Packing 1B7J (asbestos)	N/A	*		$1 \times 10^{10}$	750	AC	NMR-42

\*All harsh environments at the plant are below the material threshold radiation and maximum service temperature level.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - No. Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179 34      MARK NO : 3EWS\*CV41A,B,C,D DRAWING NO(S) : 2362 850-476-7,9,10,11      SPECIFICATION NO : 2362 850-476

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM 476 1A,B

SHT. NO. : SDS-1 OF 1

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : JUNE 14, 1984

COMPILED BY : G. POWERS

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
Subcomponent	Material		Radia- tion (Rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
HB-11-1B 900 FWV Carbon Steel Double Disc Valve								
Gasket, Bonnet	Asbestos	N/A	1 x 10 <sup>4</sup>	300	1 x 10 <sup>4</sup>	1200	AC	NMR-4
Packing Rings	BR ABS W/Inc Wire		1 x 10 <sup>4</sup>	300	1 x 10 <sup>4</sup>	1200	AC	NMR-4

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
D - Outstanding  
N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34 I.D. NO. : VARIOUS

DRAWING NO(S) : (VENDOR SUBMITTAL IN  
Job Book No. 17-1)

SPECIFICATION NO. : 2170.430-565

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : DIM-N/A

SHEET NO. : SDS-1 OF 2

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 10/3/84

COMPILED BY : R. DUTKA

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Intake and Duct Insulation	Glass Fiber	N/A	$1.1 \times 10^4$	120	$1 \times 10^4$	480	AE	NMR-19 EAS-1
Flanged Ductwork	Neoprene Gaskets	5.5 (Note 1)	$2.0 \times 10^4$	350	$8 \times 10^4$	250	AE	NMR-23 EAS-2 NMA-5
Flexible Connections	Glass Fiber and Neoprene	5.5 (Note 1)	$1.3 \times 10^4$	300	$1 \times 10^4$ $8 \times 10^4$	200	AE	NMR-98 EAS-3 NMA-5
Access Door Gaskets	SEB (Buna)	1.5 (Note 2)	$1.7 \times 10^4$	300	$2 \times 10^4$	176	AE	NMR-7 EAS-4 NMA-10
Sealant	(Nitrile) Buna-N	13 (Note 3)	$1.7 \times 10^4$	300	$1 \times 10^4$	225	AE	NMR-6 EAS-5 NMA-2 and 15

NOTES

1. Service Life shown is not applicable for the reactor containment. Reactor containment ventilation duct is not required for safe shutdown or mitigation of the consequences of an accident.
2. Service Life shown is not applicable for the reactor containment and main steam valve building.
3. Service Life, for the reactor containment use, is 4.5 years.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 D - Outstanding  
 N/A - Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO : 3HVQ\*F1113

DRAWING NO(S) : 2170.430-565-506B

SPECIFICATION NO. : 2170.430-565

NAME : MILESTONE 3

3HVQ\*F1114A, B

OPERATION AND MAINTENANCE  
MANUAL NO : OIM-N/A

SHI. NO. : SDS-2 OF 2

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 10/3/84

COMPILED BY : R DUTKA

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radiation (Rads)</u>	<u>Temperature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Housing Access Door Gasket	Neoprene	5.5	*5.9 x 10 <sup>1</sup> **1.1 x 10 <sup>2</sup>	120 185	8 x 10 <sup>2</sup>	250	AC	NMR-23 NMA-5
Housing Seam Caulking	Silicone Rubber	10 <sup>1</sup>	*5.9 x 10 <sup>1</sup> **1.1 x 10 <sup>2</sup>	120 185	5 x 10 <sup>2</sup>	302	AC	NMR-13 NMA-7
Filter Media and Packing Sealant	Glass Fiber	N/A	*5.9 x 10 <sup>1</sup> **1.1 x 10 <sup>2</sup>	120 185	1 x 10 <sup>2</sup>	480	AE	NMR-19 EAS-6

\*For HVQ\*F1113  
\*\*For HVQ\*F1114A, B

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
O - Outstanding  
N/A - Not Applicable



## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34 MARK NO : 3CCP-VB77-VB80  
(VPS015 E 3)

DRAWING NO(S) : 2282.400.568-068

SPECIFICATION NO. : 2282.400.568

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM-568-1A

SHT. NO. : SDS-1 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 7/19/84

COMPILED BY : R. DUTKA

Subcomponent Identification	Material	Service Life {Years} By Thermal Aging Calculation {See Ref. NM}	Harsh Environment		Material Data		Status	Reference
			Radiation {rads}	Temperature {°F}	Threshold Radiation {rads}	Max. Service Temperature {°F}		
Steeve	UHMW polyethylene	40 <sup>+</sup>	1.0x10 <sup>6</sup>	350	1.5x10 <sup>6</sup>	180	AE	NMR-41 NMA-4 EAS-1
Diaphragm	UHMW polyethylene	40 <sup>+</sup>	1.0x10 <sup>6</sup>	350	1.5x10 <sup>6</sup>	180	AE	NMR-41 NMA-4 EAS-1
Delta ring	UHMW polyethylene	40 <sup>+</sup>	1.0x10 <sup>6</sup>	350	1.5x10 <sup>6</sup>	180	AE	NMR-41 NMA-4 EAS-1

## NOTES:

- The threshold radiation for UHMW polyethylene is undetermined. 1.5 x 10<sup>6</sup> rads is the radiation resistance. (Reference NMR-41)
- The service life of UHMW polyethylene is taken to be the same as that for polyethylene based on the fact that the activation energies of the two are approximately equal. The service life shown is for normal operating temperature without accident temperature spikes.

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
U - Outstanding  
N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179 34 MARK NO.: 3CHS\*V21 24, 26, DRAWING NO(S): 2282.400-568-026  
 27, 91-93, 95-103, 2282.400-568-028  
 105, 107, 108, 110,  
 117, 118, 132, 134,  
 136, 138, 140, 188,  
 189, 192-197, 199,  
 200, 202-205, 213-224,  
 226, 227, 229-233,  
 235, 236, 239, 244,  
 569-579  
 (VPW030 E-3)

SPECIFICATION NO.: 2282.400-568

NAME: MILLSIE

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-568-1A

SHEET NO.: SDS-2 OF 18

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 7/19/84

COMPILED BY: R. DUTKA

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
Nonmetallic Subcomponent	Material		Radia- tion {rads}	Temper- ature {°F}	Threshold Radiation {rads}	Max. Service Temperature {°F}		
Sleeve	UHMW polyethylene	40*	2.3x10 <sup>6</sup>	280	1.5x10 <sup>6</sup>	180	AE	NMR-41 NMA-4 EAS-2
Diaphragm	UHMW polyethylene	40*	2.3x10 <sup>6</sup>	280	1.5x10 <sup>6</sup>	180	AE	NMR-41 NMA-4 EAS-2
Delta Ring	UHMW polyethylene	40*	2.3x10 <sup>6</sup>	280	1.5x10 <sup>6</sup>	180	AE	NMR-41 NMA-4 EAS-2

## NOTES:

- The threshold radiation for UHMW polyethylene is undetermined.  $1.5 \times 10^6$  rads is the radiation resistance. (Reference NMR-41)
- The service life of UHMW polyethylene is taken to be the same as that for polyethylene based on the fact that the activation energies of the two are approximately equal. The service life shown is for normal operating temperature without accident temperature spikes.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34 MARK NO : 3CHS-VBB 90, 101 DRAWING NO(S) : 2282.400-568-026  
 106, 109, 111, 112, 2282.500-568-028  
 190, 191, 210-212,  
 967-971, 980-985  
 (VPW030 E 3)

SPECIFICATION NO. : 2282.400-568

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM-568-1A

SHT. NO. : SDS-3 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 7/19/84

COMPILED BY : R. DUTKA

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
Nonmetallic Subcomponent	Material		Radia- tion (rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Sleeve	UHMW polyethylene	40*	2.3x10 <sup>6</sup>	215	1.5x10 <sup>6</sup>	180	AE	NMR-41 NMA-4 EAS-3
Diaphragm	UHMW polyethylene	40*	2.3x10 <sup>6</sup>	215	1.5x10 <sup>6</sup>	180	AE	NMR-41 NMA-4 EAS-3
Delta ring	UHMW polyethylene	40*	2.3x10 <sup>6</sup>	215	1.5x10 <sup>6</sup>	180	AE	NMR-41 NMA-4 EAS-3

## NOTES:

1. The threshold radiation for UHMW polyethylene is undetermined.  $1.5 \times 10^6$  rads is the radiation resistance. [Reference NMR-41].
2. The service life of UHMW polyethylene is taken to be the same as that for polyethylene based on the fact that the activation energies of the two are approximately equal. The service life shown is for normal operating temperature without accident temperature spikes.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 U - Outstanding  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO : 3CHS\*V79-1 797,  
779, 800  
(VPW030 E 2)

DRAWING NO(S) : 2282-400-568-116

SPECIFICATION NO. : 2282-400-568

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM 568 1A

SII NO. : SDS-4 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 7/19/84

COMPILED BY : R. DUTKA

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation {See Ref. NM}	Harsh Environment		Material Data		Status	Reference
			Radiation (rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Steeve	UHMW polyethylene	40 <sup>1</sup>	1.4x10 <sup>4</sup>	200	1.5x10 <sup>4</sup>	180	AE	NMR-41 NMA-4 EAS-4
Diaphragm	UHMW polyethylene	40 <sup>1</sup>	1.4x10 <sup>4</sup>	200	1.5x10 <sup>4</sup>	180	AE	NMR-41 NMA-4 EAS-4
Delta ring	UHMW polyethylene	40 <sup>1</sup>	1.4x10 <sup>4</sup>	200	1.5x10 <sup>4</sup>	180	AE	NMR-41 NMA-4 EAS-4

## NOTES

- The threshold radiation for UHMW polyethylene is undetermined.  $1.5 \times 10^4$  rads is the radiation resistance. (Reference NMR-41)
- The service life of UHMW polyethylene is taken to be the same as that for polyethylene based on the fact that the activation energies of the two are approximately equal. The service life shown is for normal operating temperature without accident temperature spikes.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 D - Outstanding  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO : 3CMS-V994, 995,  
998, 999  
(VPS015 AA 3)

DRAWING NO(S) : 2282.400-568-002

SPECIFICATION NO. : 2282.400 568

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : DIM-568-1A

SHT. NO. : SDS-5 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 7/19/84

COMPILED BY : R. DUTKA

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. 11M)	Harsh Environment		Material Data		Status	Reference
Nonmetallic Subcomponent	Material		Radiation (rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Strave	UHMW polyethylene	40 <sup>1</sup>	1.1x10 <sup>4</sup>	185	1.5x10 <sup>4</sup>	180	AE	NMR-41 NMA-4 EAS-5
Diaphragm	UHMW polyethylene	40 <sup>1</sup>	1.1x10 <sup>4</sup>	185	1.5x10 <sup>4</sup>	180	AE	NMR-41 NMA-4 EAS-5
Delta Ring	UHMW polyethylene	40 <sup>1</sup>	1.1x10 <sup>4</sup>	185	1.5x10 <sup>4</sup>	180	AE	NMR-41 NMA-4 EAS-5

## NOTES:

- The threshold radiation for UHMW polyethylene is undetermined. 1.5 x 10<sup>4</sup> rads is the radiation resistance. (Reference NMR-41)
- The service life of UHMW polyethylene is taken to be the same as that for polyethylene based on the fact that the activation energies of the two are approximately equal. The service life shown is for normal operating temperature without accident temperature spikes.

Ac - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 B - Outstanding  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34

MARK NO : 3DAS\*V924  
3PGS\*V948  
3SFC\*VB63, 864  
(VPS015 AA 2)

DRAWING NO(S) : 2282.400-568-001

SPECIFICATION NO. : 2282.400-568

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-568-1A

SHT. NO. : SDS-6 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 7/19/84

COMPILED BY : R. DUTKA

<u>Subcomponent Identification</u>		<u>Service Life</u> {Years} By <u>Thermal Aging</u> <u>Calculation</u> {See Ref. NM}	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> {rads}	<u>Temper-</u> <u>ature</u> {°F}	<u>Threshold</u> <u>Radiation</u> {rads}	<u>Max. Service</u> <u>Temperature</u> {°F}		
Steeve	UHMW polyethylene	40 <sup>+</sup>	2.0x10 <sup>4</sup>	350	1.5x10 <sup>4</sup>	180	0	NMR-41 NMA-4
Diaphragm	UHMW polyethylene	40 <sup>+</sup>	2.0x10 <sup>4</sup>	350	1.5x10 <sup>4</sup>	180	0	NMR-41 NMA-4
Delta ring	UHMW polyethylene	40 <sup>+</sup>	2.0x10 <sup>4</sup>	350	1.5x10 <sup>4</sup>	180	0	NMR-41 NMA-4

## NOTES

1. The threshold radiation for UHMW polyethylene is undetermined. 1.5 x 10<sup>4</sup> rads is the radiation resistance. [Reference NMR-41]
2. The service life of UHMW polyethylene is taken to be the same as that for polyethylene based on the fact that the activation energies of the two are approximately equal. The service life shown is for normal operating temperature without accident temperature spikes.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 0 - Outstanding  
 N/A - Not Applicable



## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34 MARK NO : 35FC-V63-76, 877-878, 893-897, 924, 925, 927, 928, 984 (VPF015 AA-3)  
 DRAWING NO(S) : 2282-400-568-002 SPECIFICATION NO. : 2282-400-568

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM 568 1A

SHT NO : SDS-7 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 7/19/84

COMPILED BY : R DUTKA

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Sleeve	UHMW polyethylene	40*	5.9x10 <sup>4</sup>	120	1.5x10 <sup>5</sup>	180	AC	NMR-41 NMA-4
Diaphragm	UHMW polyethylene	40*	5.9x10 <sup>4</sup>	120	1.5x10 <sup>5</sup>	180	AC	NMR-41 NMA-4
Delta ring	UHMW polyethylene	40*	5.9x10 <sup>4</sup>	120	1.5x10 <sup>5</sup>	180	AC	NMR-41 NMA-4

## NOTES

- The threshold radiation for UHMW polyethylene is undetermined. 1.5 x 10<sup>5</sup> rads is the radiation resistance. (Reference NMR-41)
- The service life of UHMW polyethylene is taken to be the same as that for polyethylene based on the fact that the activation energies of the two are approximately equal. The service life shown is for normal operating temperature without accident temperature spikes.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 2179 31

MARK NO : 3SWP1V22, 55,  
144, 146, 158,  
159  
(VPFO15-A 3)

DRAWING NO(S) : 2282.400-568-060  
2282.400-568-004

SPECIFICATION NO. : 2282.400-568

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM-568-1A

SII NO : SDS-8 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 7/19/84

COMPILED BY : R DUTKA

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Steeve	Teflon (TFE)	40+	2.6x10 <sup>4</sup>	120	1.5x10 <sup>4</sup>	400	0	NMR-33 NMA-3
Diaphragm	Teflon (TFE)	40+	2.6x10 <sup>4</sup>	120	1.5x10 <sup>4</sup>	400	0	NMR-33 NMA-3
Delta ring	Teflon (TFE)	40+	2.6x10 <sup>4</sup>	120	1.5x10 <sup>4</sup>	400	0	NMR-33 NMA-3

AC = Acceptable by Comparison  
AE = Acceptable by Evaluation  
0 = Outstanding  
N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO. : 12179-34 MARK NO. : 3SWP1V23, 56,  
145, 117  
(VPFO15 A 3)

DRAWING NO(S) : 2282-400-568-060  
2282-400-568-004

SPECIFICATION NO. : 2282-400-568

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-568-1A

SHT. NO. : SDS-9 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 7/19/84

COMPILED BY : R. DUTKA

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By Thermal Aging Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Sleeve	Teflon (TFE)	40+	2.6x10 <sup>4</sup>	120	1.5x10 <sup>4</sup>	400	AE	NMR-33 NMA-3 EAS-6
Diaphragm	Teflon (TFE)	40+	2.6x10 <sup>4</sup>	120	1.5x10 <sup>4</sup>	400	AE	NMR-33 NMA-3 EAS-6
Delta ring	Teflon (TFE)	40+	2.6x10 <sup>4</sup>	120	1.5x10 <sup>4</sup>	400	AE	NMR-33 NMA-3 EAS-6

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
O - Outstanding  
N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179 34 MARK NO : 35MP-V168 173, 175-178, 180-183, 185-188, 190, 191 (VPFD15-A 3) DRAWING NO(S) : 2282 400 568-004 SPECIFICATION NO. : 2282 400 568

NAME : MILLSTONE 3 OPERATION AND MAINTENANCE MANUAL NO. : OIM-568-1A SHH NO. : SDS-10 OF 18 DATE : 7/19/84

CLIENT : NORTHEAST UTILITIES SERVICE CO  
 COMPILED BY : R DUTKA

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment Radiation (rads)	Temperature (°F)	Material Data Threshold Radiation (rads)	Max. Service Temperature (°F)	Status	Reference
Nonmetallic Subcomponent Sleeve	Teflon (TFE)	40*	1.3x10 <sup>6</sup>	120	1.5x10 <sup>6</sup>	400	0	NMR-33 NMA-3
Diaphragm	Teflon (TFE)	40*	1.3x10 <sup>6</sup>	120	1.5x10 <sup>6</sup>	400	0	NMR-33 NMA-3
Delta ring	Teflon (TFE)	40*	1.3x10 <sup>6</sup>	120	1.5x10 <sup>6</sup>	400	0	NMR-33 NMA-3

AC = Acceptable by Comparison  
 AE = Acceptable by Evaluation  
 U = Outstanding  
 N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO :

3SWP\*V174, 179  
184, 189, 974 977  
(VPFO15 A 3)

DRAWING NO(S) : 2282 400-568-004

SPECIFICATION NO. : 2282.400 568

NAME : MILESTONE 3

OPERATION AND MAINTENANCE

MANUAL NO. : OIM-568-1A

SHEET NO. : SDS-11 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 7/19/84

COMPILED BY : R. DUTKA

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Steeve	Teflon (TFE)	40*	1.3x10 <sup>7</sup>	120	1.5x10 <sup>4</sup>	400	AE	NMR-33 NMA-3 EAS-7
Diaphragm	Teflon (TFE)	40*	1.3x10 <sup>7</sup>	120	1.5x10 <sup>4</sup>	400	AE	NMR-33 NMA-3 EAS-7
Delta Ring	Teflon (TFE)	40*	1.3x10 <sup>7</sup>	120	1.5x10 <sup>4</sup>	400	AE	NMR-33 NMA-3 EAS-7

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 B - Outstanding  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34 MARK NO : 35WP1V197, 199,  
972, 973  
(VPFO15 A 3)

DRAWING NO(S) : 2282.400-568-G04

SPECIFICATION NO. : 2282.400-568

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-568-1A

SHT. NO : SDS-12 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 7/19/84

COMPILED BY : R DUTKA

Subcomponent Identification	Material	Service Life {Years} By Thermal Aging Calculation {See Ref. NM}	Harsh Environment		Material Data		Status	Reference
			Radia- tion {rads}	Temper- ature {°F}	Threshold Radiation {rads}	Max Service Temperature {°F}		
Nonmetallic Subcomponent								
Sleeve	Teflon (TFE)	40*	1.4x10 <sup>4</sup>	210	1.5x10 <sup>4</sup>	400	AE	NMR-33 NMA-3 EAS-8
Diaphragm	Teflon (TFE)	40*	1.4x10 <sup>4</sup>	210	1.5x10 <sup>4</sup>	400	AE	NMR-33 NMA-3 EAS-8
Delta ring	Teflon (TFE)	40*	1.4x10 <sup>4</sup>	210	1.5x10 <sup>4</sup>	400	AE	NMR-33 NMA-3 EAS-8

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
U - Outstanding  
N/A - Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179-34 MARK NO : J5MP-V222 225 (VPFO15 A 3) DRAWING NO(S) : 2282 400-568-004 SPECIFICATION NO : 2282 400 568  
 NAME : MILLSTONE 3 OPERATION AND MAINTENANCE MANUAL NO : DIM 568-1A SHI NO : SDS-13 OF 18  
 CLIENT : NORTHWEST UTILITIES SERVICE CO DATE : 7/19/84  
 COMPILED BY : R DUTKA

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Steeve	Teflon (TFE)	40*	1.4x10 <sup>6</sup>	210	1.5x10 <sup>6</sup>	400	0	NMR-33 NMA-3
Diaphragm	Teflon (TFE)	40*	1.4x10 <sup>6</sup>	210	1.5x10 <sup>6</sup>	400	0	NMR-33 NMA-3
Delta ring	Teflon (TFE)	40*	1.4x10 <sup>6</sup>	210	1.5x10 <sup>6</sup>	400	0	NMR-33 NMA-3

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 0 - Not Satisfying  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO. : 12179 J4 MARK NO. : 35WP+V739, 740  
(VPFO15 A J)  
NAME : MILESTONE 3

DRAWING NO(S) : 2282.400-568-004  
OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-568-1A

SPECIFICATION NO. : 2282.400-568  
SHT. NO. : SDS-14 OF 18  
DATE : 7/19/84

CLIENT : NORTHEAST UTILITIES SERVICE CO.

COMPILED BY : R. DUTKA

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Steeve	Teflon (TFE)	40*	7.0x10 <sup>4</sup>	120	1.5x10 <sup>4</sup>	400	AE	NMR-33 NMA-3 EAS-9
Diaphragm	Teflon (TFE)	40*	7.0x10 <sup>4</sup>	120	1.5x10 <sup>4</sup>	400	AE	NMR-33 NMA-3 EAS-9
Delta ring	Teflon (TFE)	40*	7.0x10 <sup>4</sup>	120	1.5x10 <sup>4</sup>	400	AE	NMR-33 NMA-3 EAS-9

AC = Acceptable by Comparison  
AE = Acceptable by Evaluation  
D = Outstanding  
N/A = Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO. : 12179 34 MARK NO. : JSMP-VB12 R21, R70, R7J (VPFO15 A 3)

DRAWING NO(S) : 2282.400-568-004

OPERATION AND MAINTENANCE MANUAL NO. : 01M-568-1A

SPECIFICATION NO. : 2282.400 568

NAME : MILLSTONE 3

CLIENT : NORTHWEST UTILITIES SERVICE CO

DATE : 7/19/84

COMPILED BY : R DUTKA

SIT. NO. : SDS-15 OF 18

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. #)	Harsh Environment		Material Data		Status	Reference
			Radiation (rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Steeve	teflon (TFE)	40*	1.1x10*	120	1.5x10*	400	AC	NMR-33 NMA-3
Diaphragm	teflon (TFE)	40*	1.1x10*	120	1.5x10*	400	AC	NMR-33 NMA-3
Delta ring	teflon (TFE)	40*	1.1x10*	120	1.5x10*	400	AC	NMR-33 NMA-3

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 D - Discontinuing  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO : 3SWP1VB16, B47  
(VPFO15-A J)

DRAWING NO(S) : 2282.400-568-004

SPECIFICATION NO : 2282.400-568

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM-568-1A

SHEET NO : SDS-16 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 7/19/84

COMPILED BY : R DUTKA

<u>Subcomponent Identification</u>		<u>Service Life {Years} By Thermal Aging Calculation {See Ref. NM}</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion {rads}</u>	<u>Temper- ature {°F}</u>	<u>Threshold Radiation {rads}</u>	<u>Max. Service Temperature {°F}</u>		
Steeve	Teflon (TFE)	40+	6.5x10 <sup>4</sup>	130	1.5x10 <sup>4</sup>	400	0	NMR-33 NMA-3
Diaphragm	Teflon (TFE)	40+	6.5x10 <sup>4</sup>	130	1.5x10 <sup>4</sup>	400	0	NMR-33 NMA-3
Delta ring	Teflon (TFE)	40+	6.5x10 <sup>4</sup>	130	1.5x10 <sup>4</sup>	400	0	NMR-33 NMA-3

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 0 - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

job no. : 12179 34 mark no. : 3SWP\*V922  
(VPFO15 A 3)

drawing no(s) : 2282.400-568-004

specification no. : 2282.400-568

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM 568 1A

SHT. NO. : SDS-17 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 7/19/84

COMPILED BY : R DUTKA

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
Subcomponent	Material		Radia- tion {rads}	Temper- ature {°F}	Threshold Radiation {rads}	Max. Service Temperature {°F}		
Sleeve	Teflon (TFE)	40*	8.2x10 <sup>4</sup>	200	1.5x10 <sup>4</sup>	400	0	NMR-33 NMA-3
Diaphragm	Teflon (TFE)	40*	8.2x10 <sup>4</sup>	200	1.5x10 <sup>4</sup>	400	0	NMR-33 NMA-3
Delta ring	Teflon (TFE)	40*	8.2x10 <sup>4</sup>	200	1.5x10 <sup>4</sup>	400	0	NMR-33 NMA-3

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
0 - Outstanding  
N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34 MARK NO : 3SWP\*MOV130A,B  
(VPFO15-A-3)

DRAWING NO(S) : 2282-400-568-100

SPECIFICATION NO : 2282-400-568

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM-568-1A

SHEET NO : SDS-18 OF 18

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 7/19/84

COMPILED BY : R. DUTKA

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Steeve	Teflon (TFE)	40*	1.1x10 <sup>4</sup>	185	1.5x10 <sup>4</sup>	400	AC	NMR-33 NMA-3
Diaphragm	Teflon (TFE)	40*	1.1x10 <sup>4</sup>	185	1.5x10 <sup>4</sup>	400	AC	NMR-33 NMA-3
Delta ring	Teflon (TFE)	40*	1.1x10 <sup>4</sup>	185	1.5x10 <sup>4</sup>	400	AC	NMR-33 NMA-3

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable



## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO : 311VR\*DMPB1A,B  
2A,B, 3A,B4A,B  
5A,B, 6A,BDRAWING NO(S) : 2176.430 583- 506C  
and 534C

SPECIFICATION NO. : 2176.430 583

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-583-1A

SHT. NO. : SDS - 1 OF 4

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 7-24-84

COMPILED BY : R. DUTKA

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
Nonmetallic Subcomponent	Material		Radia- tion (Rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Blade Seals	Neoprene Sponge	5.5	$1.1 \times 10^4$	185	$8 \times 10^3$	250	AC	NMR-23 NMA-5
Jamb Wedge	EPT	40*	$1.1 \times 10^4$	185	$8.77 \times 10^3$	300	AC	NMR-15 NMA-1
Sealant	Silicone Com- pound 732 RTV	40*	$1.1 \times 10^4$	185	$5 \times 10^3$	302	AC	NMR-13 NMA-7
Adhesive	Scotch Grip No. 1300	*	$1.1 \times 10^4$	185	*	300	AE	NMR-77 EAS-2

\*See EAS 2

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 U - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO. : 12179-34      MARK NO. : 31WR\*DM1P/A AND B      DRAWING NO(S) : 2176-430-583-506C      SPECIFICATION NO. : 2176-430-583

NAME : MILLSTONE 3      OPERATION AND MAINTENANCE      SHI. NO. : SDS - 2 OF 4

CLIENT : NORTHEAST UTILITIES SERVICE CO.      MANUAL NO. : OIM-583-1A      DATE : 7-24-84

COMPLETED BY : R DUTKA

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Bleed Seals	Neoprene Sponge	5-5	2.4x10 <sup>4</sup> *	140	8x10 <sup>4</sup> *	250	AC	NMR-23 NMA-5
Clamp Wedge	EPI	40*	2.4x10 <sup>4</sup> *	140	8.77x10 <sup>4</sup> *	300	AC	NMR-15 NMA-1
Sealant	Silicone Compound 732 RTV	40*	2.4x10 <sup>4</sup> *	140	5x10 <sup>4</sup> *	302	AC	NMR-13 NMA-7
Adhesive	Scotch Grip No. 1300	*	2.4x10 <sup>4</sup> *	140	*	300	AE	NMR-77 EAS-2

\* See EAS 2

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 U - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO. : 12179-34      MARK NO. : 3HVV'DMPBIC.D      DRAWING NO(S) : 2176.430-583- 506C      SPECIFICATION NO. : 2176.430-583

NAME : MILESTONE 3      OPERATION AND MAINTENANCE      SHI. NO. : SDS - 3 OF 4

CLIENT : NORTHEAST UTILITIES SERVICE CO.      MANUAL NO. : OIM-583-1A      DATE : 7-24-84

COMPILED BY : R. DUTKA

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> <u>Calculation</u> (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Blade Seals	Neoprene Sponge	5-5	1.1x10 <sup>4</sup>	300	8x10 <sup>3</sup>	250	AE	NMR-23 NMA-5 EAS-1
Jamb Wedge	EPI	40+	1.1x10 <sup>4</sup>	300	8.77x10 <sup>3</sup>	300	AC	NMR-15 NMA-1
Sealant	Silicone Com- pound 732 RTV	40+	1.1x10 <sup>4</sup>	300	5x10 <sup>3</sup>	302	AC	NMR-13 NMA-7
Adhesive	Scotch Grip No. 1300	*	1.1x10 <sup>4</sup>	300	*	300	AE	NMR-77 EAS-2

\*See EAS-2

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179 34

MARK NO.: 31VQ\*DMPB1A,B,  
and 2A,B

DRAWING NO(S): 2176.430-583-506C

SPECIFICATION NO.: 2176.430-583

NAME: MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-583-1A

SHEET NO.: SDS - 4 OF 4

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 7-24-84

COMPILED BY: R. DUTKA

<u>Subcomponent Identification</u>		<u>Service Life</u> <u>(Years) By</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>	<u>Thermal Aging</u> <u>Calculation</u> <u>(See Ref. NM)</u>	<u>Radia-</u> <u>tion</u> <u>(Rads)</u>	<u>Temper-</u> <u>ature</u> <u>(°F)</u>	<u>Threshold</u> <u>Radiation</u> <u>(rads)</u>	<u>Max. Service</u> <u>Temperature</u> <u>(°F)</u>		
Blade Seals	Neoprene Sponge	5.5	$5.9 \times 10^1$	120	$8 \times 10^4$	250	AC	NMR-23 NMA-5
Jamb Wedge	EPT	40*	$5.9 \times 10^1$	120	$8.77 \times 10^4$	300	AC	NMR-15 NMA-1
Sealant	Silicone Com- pound 732 RTV	40*	$5.9 \times 10^1$	120	$5 \times 10^4$	302	AC	NMR-13 NMA-7
Adhesive	Scotch Grip No. 1300	*	$5.9 \times 10^1$	120	*	300	AE	EAS-77 EAS-2

\*See EAS 2

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179 34 MARK NO : 35III\*SIRIIA8B

DRAWING NO(S) : 2360 000 589 089B

SPECIFICATION NO. : 2360 000 589

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE

SHT. NO. : SDS-1

MANUAL NO. : DIM-589-1A

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : JUNE 12, 1984

COMPILED BY : R. E. CONLON

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> <u>Calculation</u> (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Flange Gasket	Graphoil	NA	*2.2x10 <sup>4</sup>	250	9.1x10 <sup>4</sup>	500	AC	NMR-20

\*The environment indicated is due to the fluid in the system which is higher than the location zone condition.

AC = Acceptable by Comparison

AE = Acceptable by Evaluation

O = Outstanding

N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179 34 MARK NO.: VARIOUS

DRAWING NO(S): 2472.900-594-  
002F & 007E

SPECIFICATION NO.: 2472.900-594

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-594-1A

SHEET NO.: SDS-1 OF 1

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 08/09/84

COMPILED BY: R. DUTKA

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radia- tion (Rads)</u>	<u>Temper- ature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Blade Seals	Neoprene Sponge	5.5	$1.3 \times 10^4$	300	$8 \times 10^4$	250	AE	NMR-23 NMA-5 EAS-1
Jamb Wedge	EPT	40*	$1.3 \times 10^4$	300	$8.77 \times 10^4$	300	AE	NMR-15 NMA-1 EAS-2
Sealant	Silicone Compound 732RTV	40*	$1.3 \times 10^4$	300	$5 \times 10^4$	302	AE	NMR-13 NMA-7 EAS-3
Adhesive	Scotch Grip No. 1300	*	$1.3 \times 10^4$	300	*	300	AE	NMR-77 EAS-6
Actuator Diaphragm	EP	40*	$1.3 \times 10^4$	300	$1 \times 10^4$	300	AE	NMR-14 NMA-1 EAS-4
Press Regulator Diaphragm	Nitrile	13 40**	$1.3 \times 10^4$	300	$1 \times 10^4$	225	AE	NMR-6 NMA-2 NMA-15 EAS-5

NOTE: Elec -hydraulic actuators, solenoids, and limit switches for the motor operated dampers are qualified under IEEE program.

\*See EAS-6

\*\*For Hydrogen Recombiner Bldg only

AC - Acceptable by Comparison

AE - Acceptable by Evaluation

O - Outstanding

N/A - Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179-34      MARK NO : 3HVR+ACHTA & B      DRAWING NO(S) : 2176-430-648-540F      SPECIFICATION NO. : 2176-430-648  
 NAME : MILLSTONE 3      OPERATION AND MAINTENANCE      SHEET NO. : SH 1 OF 1  
 MANUAL NO. : OIM 648-1B  
 CLIENT : NORTHEAST UTILITIES SERVICE CO.      DATE : 8/10/84  
 COMPILED BY : R. DUTKA

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Unit Housing Insulation	Fiberglass	N/A	$1.1 \times 10^4$	120	$1 \times 10^4$	225	AC	NMR-44
Gaskets and Fan Belts	Neoprene	5.5	$1.1 \times 10^4$	120	$8 \times 10^3$	250	AC	NMR-23 NMA-5
Lubricant	2NLG1 grease (Exxon)	N/A	$1.1 \times 10^4$	120	$2 \times 10^4$	300	AC	NMR-76

NOTE: Motor Lubricant is qualified under the IEEE Program

- AC - Acceptable by Comparison
- AE - Acceptable by Evaluation
- O - Outstanding
- N/A - Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179 34      MARK NO : 3FWS\*V988 THRU V991      DRAWING NO. : 2362 050-651-136E      SPECIFICATION NO. : 2362.050-651  
 NAME : MILESTONE 3      OPERATION AND MAINTENANCE      SHE NO. : SDS-2 OF 5  
 CLIENT : NORTHEAST UTILITIES SERVICE CO.      MANUAL NO. : DIM 651-1A      DATE : 9/21/84  
 COMPILED BY : K. MANKARTOUS

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radia- tion (Rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Packing	John Crane 187-1 (Asbestos)	N/A	1.1x10 <sup>4</sup>	300	1x10 <sup>4</sup> *	1200	AC	NMR-4
Lubricant	Never Seeze Pure Nickel Special	N/A	1.1x10 <sup>4</sup>	300	1x10 <sup>4</sup> *	2600	AC	NMR-35
Valve Operator								
Oil Seats	Buna N	*	1.1x10 <sup>4</sup>	300	1.0x10 <sup>4</sup> *	225	AE	NMR-6 EAS-1
Gasket	Spaulding Fiber No. 44	N/A	1.1x10 <sup>4</sup>	300	1.0x10 <sup>4</sup> *	196	AE	NMR-12 EAS-3

\*See EAS-1

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179 34 MARK NO. : JCCP'V32  
 3FPW'V661, V666

DRAWING NO. : 2362 050-651-139E  
 2362 050-651-140E

SPECIFICATION NO. : 2362.050-651

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
 MATERIAL NO. : OIM 651-1A

SII NO. : SDS-3 OF 5

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 8/27/84

COMPILED BY : K MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By Thermal Aging Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Packing	John Crane 187 I (Asbestos)	N/A	*	*	$1 \times 10^6$	1200	AC	NMR-4
Lubricant	Never Seize Pure Nickel Special	N/A	**	**	$1 \times 10^6$	2600	AC	NMR-35

\*John Crane 187 I is asbestos which is qualified for all environment of Millstone 3.

\*\*The worst cases are for valves located in CS-02 having harsh environment of  $1.82 \times 10^6$  rads (the summation of  $2.2 \times 10^6$  gamma rads, and  $1.6 \times 10^6$  beta rads) and temperature 350°F. Lubricant doesn't see the beta rads as it is encased by the valve body.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO. : 12179-34

MARK NO. : 31WA\*ADV62A.B

DRAWING NO. : 2362.050-651-180  
2362.050-651-181

SPECIFICATION NO. : 2362.050-651

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM 651-1A

SHT. NO. : SDS-4 OF 5

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 8/28/84

COMPILED BY : K. MARKARIOUS

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Packing	John Crane 187 L (Asbestos)	N/A	2.6x10 <sup>4</sup>	146	1x10 <sup>4</sup>	1200	AC	NMR-4
Cylinder Assembly:								
Cup Seal	Viton	40*	2.6x10 <sup>4</sup>	146	8.7x10 <sup>4</sup>	350	AE	NMA-6
Piston to rod seal	(for all these subcomponents)							NMR-34
Tube end seal								EAS-2
Rod bushing seal								
Rod packing								
Rod wiper								
Piston O Ring								

AC - Acceptable by Comparison  
AE - Acceptable by Evaluation  
D - Outstanding  
N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179-34

MARK NO : 3MSS\*MOV71A,B,C,D

DRAWING NO. : 2362.050-651-161E

SPECIFICATION NO. : 2362.050-651

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE

MATERIAL NO. : OIM-651-1A

SHT. NO. : SDS-5 OF 5

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 10/27/84

COMPILED BY : K MANKARIC

Subcomponent Identification	Material	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Packing	John Crane 187-1 (Asbestos)	N/A	1.1x10 <sup>4</sup>	300	1x10 <sup>4</sup>	1200	AC	NMR-4
Lubricant	Never Seize Pure Nickel Special	N/A	1.1x10 <sup>4</sup>	300	1x10 <sup>4</sup>	2600	AC	NMR-35

NOTE:

The Limit torque is qualified under IEEE qualification program

- AC - Acceptable by Comparison
- AE - Acceptable by Evaluation
- U - Outstanding
- N/A - Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179 34      MARK NO : 3FWA\*HV36A,B,C,D      DRAWING NO(S) : 2472.110-654-409, 418, 420      SPECIFICATION NO.: 2472.110-654  
 3SPR\*SDV7

NAME : MILLSTONE 3      OPERATION AND MAINTENANCE      SHEET NO.: SDS-1 OF 7  
 MANUAL NO.: OIM-654-7

CLIENT : NORTHEAST UTILITIES SERVICE CO      DATE: 7/9/84

COMPILED BY: K. MANKARTOUS

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
Nonmetallic Subcomponent	Material		Radia- tion (Rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
O-Ring	Silicone Rubber	40'	1.3 x 10 <sup>4</sup>	120	5 x 10 <sup>3</sup>	302	AE	NMA-7 NMR-13 EAS-1

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO.: 12179.34      MARK NO.: 3FWA\*11V31A,B,C,D      DRAWING NO(S): 2472.110-654-409, 418, 420      SPECIFICATION NO.: 2472.110-654

NAME: MILLSTONE 3      OPERATION AND MAINTENANCE MANUAL NO.: OIM-654-7      SHEET NO.: SDS-2 OF 7

CLIENT: NORTHEAST UTILITIES SERVICE CO.      DATE: 7/9/84

COMPILED BY: K. MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radiation (Rads)</u>	<u>Temperature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
O Ring	Silicone Rubber	40*	2.6 x 10*	146	5 x 10**	302	AE	NMA-7 NMR-13 EAS-1

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO. : 12179 34      MARK NO. : 3FWA\*HV32A,B,C,D      DRAWING NO(S) : 2472.110-654-409, 418, 420      SPECIFICATION NO. : 2472.110-654

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM 654-7

SHT. NO. : SDS-3 OF 7

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 7/9/84

COMPILED BY : K. MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life</u> <u>(Years) By</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>	<u>Thermal Aging</u> <u>Calculation</u> <u>(See Ref. NM)</u>	<u>Radia-</u> <u>tion</u> <u>(Rads)</u>	<u>Temper-</u> <u>ature</u> <u>(°F)</u>	<u>Threshold</u> <u>Radiation</u> <u>(rads)</u>	<u>Max. Service</u> <u>Temperature</u> <u>(°F)</u>		
O-Ring	Silicone Rubber	40 <sup>1</sup>	7.7 x 10 <sup>3</sup>	162	5 x 10 <sup>5</sup>	302	AC	NMA-7 NMR-13

AC = Acceptable by Comparison  
AE = Acceptable by Evaluation  
D = Outstanding  
N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179 34

MARK NO.: 35SR\*SOV150A, B

DRAWING NO(S): 2472.110-654-  
357C, 365C

SPECIFICATION NO.: 2472.110-654

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-654-3

SHT. NO.: SDS-4 OF 7

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 7/9/84

COMPILED BY: K. MANKARTOUS

<u>Subcomponent Identification</u>		<u>Service Life</u> <u>(Years) By</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>	<u>Thermal Aging</u> <u>Calculation</u> <u>(See Ref. NM)</u>	<u>Radia-</u> <u>tion</u> <u>(Rads)</u>	<u>Temper-</u> <u>ature</u> <u>(°F)</u>	<u>Threshold</u> <u>Radiation</u> <u>(rads)</u>	<u>Max. Service</u> <u>Temperature</u> <u>(°F)</u>		
O Ring	Silicone Rubber	40*	$1.3 \times 10^{1*}$	120	$5 \times 10^6$	302	AC	NMA-7 NMR-13
Disc	Polyamide-imide insert	40*	$1.3 \times 10^{1*}$	120	$1 \times 10^6$	500	AC	NMA-14 NMR-97

\*Process fluid radiation level is not considered because the valves will be isolated at the time of an accident.

AC = Acceptable by Comparison  
 AE = Acceptable by Evaluation  
 O = Outstanding  
 N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34

MARK NO.: 35SR\*50V172

DRAWING NO(S): 2472-654-357C,  
365C

SPECIFICATION NO.: 2472-110-654

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-654-3

SHEET NO.: SDS-5 OF 7

CLIENT: NORTHEAST UTILITIES SERVICE CO

DATE: 8/6/84

COMPILED BY: K. MANKARIOUS

<u>Subcomponent Identification</u>		<u>Service Life</u> <u>(Years) By</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>	<u>Thermal Aging</u> <u>Calculation</u> <u>(See Ref. NM)</u>	<u>Radia-</u> <u>tion</u> <u>(Rads)</u>	<u>Temper-</u> <u>ature</u> <u>(°F)</u>	<u>Threshold</u> <u>Radiation</u> <u>(rads)</u>	<u>Max. Service</u> <u>Temperature</u> <u>(°F)</u>		
O Ring	Silicone Rubber	40*	1.0 x 10 <sup>4</sup>	350	5 x 10 <sup>4</sup>	302	AE	NMA-7 NMR-13 EAS-3
Disc	Polyamide-imide insert	40*	1.0 x 10 <sup>4</sup>	350	1 x 10 <sup>4</sup>	500	AC	NMA-14 NMR-97

AC - Acceptable by Comparison

AE - Acceptable by Evaluation

U - Outstanding

N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO. : 3SSR\*CV8026

DRAWING NO(S) : 2472-654-358C,  
365C

SPECIFICATION NO. : 2472.110-654

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-654-3

SHEET NO. : SDS-6 OF 7

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 8/6/84

COMPILED BY : K. MANKARIJUS

<u>Subcomponent Identification</u>		<u>Service Life</u> <u>(Years) By</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>	<u>Thermal Aging</u> <u>Calculation</u> <u>(See Ref. NM)</u>	<u>Radia-</u> <u>tion</u> <u>(Rads)</u>	<u>Temper-</u> <u>ature</u> <u>(°F)</u>	<u>Threshold</u> <u>Radiation</u> <u>(rads)</u>	<u>Max. Service</u> <u>Temperature</u> <u>(°F)</u>		
O Ring	Silicone Rubber	40*	1.82 x 10**	350	5 x 10*	302	AE	NMA-7 NMR-13 EAS-2
Disc	Polyamide-imide Insert	40*	1.82 x 10**	350	1 x 10*	500	AC	NMA-14 NMR-97

\*The harsh environment radiation level is the summation of the gamma rads (2.2 x 10<sup>4</sup>) and the beta rads (1.6 x 10<sup>4</sup>).

AC = Acceptable by Comparison  
AE = Acceptable by Evaluation  
O = Outstanding  
N/A = Not Applicable



## SUBCOMPONENT DATA SHEET

JOB NO : 12179 34

MARK NO : 3SSR+CV8025

DRAWING NO(S) : 2472-654-358C,  
365C

SPECIFICATION NO : 2472.110-654

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM-654-3

SHEET NO : SDS-7 OF 7

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 8/6/84

COMPILED BY : K. MANKARTIUS

<u>Subcomponent Identification</u>		<u>Service Life</u> <u>(Years) By</u> <u>Thermal Aging</u> <u>Calculation</u> <u>(See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> <u>(Rads)</u>	<u>Temper-</u> <u>ature</u> <u>(°F)</u>	<u>Threshold</u> <u>Radiation</u> <u>(rads)</u>	<u>Max. Service</u> <u>Temperature</u> <u>(°F)</u>		
O-Ring	Silicone Rubber	40*	1.4 x 10 <sup>4</sup>	210	5 x 10 <sup>5</sup>	302	AE	NMA-7 NMR-13 EAS-4
Disc	Polyamide-imide Insert	40*	1.4 x 10 <sup>4</sup>	210	1 x 10 <sup>6</sup>	500	AC	NMA-14 NMR-97

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34 MARK NO : VARIOUS

DRAWING NO(S) : 2262-350-472-001E, 002A SPECIFICATION NO : 2282-150-655

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO : OIM 655 1A

SHEET NO : SDS-1 OF 1

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 6/26/84

COMPILED BY : G WEBSTER

Subcomponent Identification	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
		Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Nonmetallic Subcomponent	Material						
Packng	Crane Packing 187J (asbestos)	N/A		$1 \times 10^{10}$	1200	AC	NMR-4
	Crane Packing 187J (asbestos)	N/A		$1 \times 10^{10}$	750	AC	NMR-42

\*All harsh environments at the plant are below the material threshold radiation and maximum service temperature level

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 D - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO.: 12179-34 MARK NO.: 311VR\*DMPB13A,B

DRAWING NO(S): 2103.430-668-035B

SPECIFICATION NO.: 2103.430-668

NAME: MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO.: OIM-668-3A

SHEET NO.: SDS-1 OF 1

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 7/3/84

COMPILED BY: R. DUTKA

<u>Subcomponent Identification</u>		<u>Maximum Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radiation (Rads)</u>	<u>Temperature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>		
Blade Seal	Neoprene	5.5	1.7x10*	170	8x10*	250	AE	NMR-23 NMA-5 EAS-1
Lubricant	2NLGI Grade Grease	N/A	1.7x10*	170	2x10*	300	AC	NMR-76
Alternative Lubricant Equivalent to 2NLGI	Mobilux EP-2	N/A	1.7x10*	170	3.8x10**	250	AC	NMR-36

\*Radiation Resistance Value

- AC - Acceptable by Comparison
- AE - Acceptable by Evaluation
- B - Outstanding
- N/A - Not Applicable

SUBCOMPONENT DATA SHEET

1.13

JOB NO.: 12179.34      MARK NO.: 3SVV\*EFV26A1, A2      DRAWING NO(S): 2472.110-673-001      SPECIFICATION NO.: 2472.110-673      1.16  
 thru D1, D2  
 3SVV\*EFV27A1, A2      1.17  
 thru D1, D2      1.18  
 1.19

NAME: MILLSTONE 3      OPERATION AND MAINTENANCE      1.21  
 MANUAL NO.: OIM-673-1B      SHT. NO.: SDS-1 OF 1      1.22

CLIENT: NORTHEAST UTILITIES SERVICE CO.      DATE: 7/12/84      1.24

COMPILED BY: G. WEBSTER      1.26

<u>Subcomponent Identification</u>		<u>Service Life (Years) By Thermal Aging Calculation (See Ref. NM)</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>	1.28
<u>Nonmetallic Subcomponent</u>	<u>Material</u>		<u>Radiation (Rads)</u>	<u>Temperature (°F)</u>	<u>Threshold Radiation (rads)</u>	<u>Max. Service Temperature (°F)</u>			1.29
Insulation	Ceramic Fiber	*	1.1x10*	300	*	*	AE	EAS-1	1.34
Thermal Strip	Thermosetting Plastic	*	1.1x10*	300	*	*	AE	EAS-1	1.36 1.37
Reed Switch (housing)	Fiberglass	*	1.1x10*	300	1.0x10**	225*	AE	NMR-44, EAS-1	1.39 1.40
Washer	Nylon	*	1.1x10*	300	8.7x10**	167*	AE	NMR-25, EAS-1	1.42 1.43

\*See the Engineering Analysis Sheet attached.

AC = Acceptable by Comparison  
 AE = Acceptable by Evaluation  
 O = Outstanding  
 N/A = Not Applicable

## SUBCOMPONENT DATA SHEET

JOB NO : 12179-34

MARK NO : ALL VALVES IN  
SPECIFICATION  
2282-050-676DRAWING NO(S) : 2282-050-676-103, 110,  
112, 114, 123, 124,  
126, 135

SPECIFICATION NO. : 2282-050-676

NAME : MILESTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-676-1A

SHEET NO. : SDS-1 OF 1

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 07/05/84

COMPILED BY : K. CONKELMAN

Subcomponent Identification	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
		Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Nonmetallic Subcomponent	Material						
Packing	Asbestos (John Crane 187-1)	N/A	Note 1	$1.0 \times 10^4$	1200	Q	NMR-4
Lubricants	Never-Seez Nickel Spectral 160 or Mobilux EP 2	N/A	Note 2	$1.0 \times 10^4$	2600	Q	NMR-35
		N/A		$3.8 \times 10^4$	250		NMR-36

## NOTES

- Asbestos is qualified for all environments in Milestone 3.
- Valves in Specification No. 676 are located in the containment, the ESI building and CW and SW pump house. Never-Seez NS-160 is qualified for any environment in these buildings. Mobilux EP 2 is qualified for valves located in the ESI building and the CW and SW pump house. Lubricants to be used on the limit torque operators for valves located in the containment and the ESI building have been qualified under the IEEE qualification program.

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable

SUBCOMPONENT DATA SHEET

JOB NO : 12179-31      DESCRIPTION NOS : V05150 W-1      DRAWING NO(S) : 2282.150-713-005C      SPECIFICATION NO. : 2282.150-713  
 NAME : MILLSTONE 3      V05150 W 2      OPERATION AND MAINTENANCE  
                                  V05150 W 3      MANUAL NO. : OIM-713-001      SHEET NO : SDS-1 OF 3  
 CLIENT : NORTHEAST UTILITIES SERVICE CO.      V0W150 W 2      DATE : 07/30/84  
                                  V0W150 W 1  
 COMPILED BY : R. E. COBURN

Subcomponent Identification		Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
Nonmetallic Subcomponent	Material		Radia- tion (Rads)	Temper- ature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Packing Ring	J.C. 187-1 (asbestos)	N/A	Note 2	Note 2	$1 \times 10^4$ *	1200	AC	NMR-4
Packing Ring	Graphite (carbon)	N/A	$2.3 \times 10^4$	280	$9.1 \times 10^4$	500	AE	NMR-20 EAS-3
G-Ring	Nitrile Rubber (Buna N)	Note 1	$1 \times 10^4$	350	$1 \times 10^4$	225	AE	NMR-6, EAS-1
Lubricants	Lubriplate 7930AA	N/A	Note 3	Note 3	Note 3	Note 3	AE	EAS-2

Notes: 1. See EAS-1

2. All harsh environments at Millstone 3 are below threshold radiation and maximum service temperature level of asbestos.

3. See EAS-2

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable



SUBCOMPONENT DATA SHEET

JOB NO : 12179 34  
 NAME : MILESTONE 3

DESCRIPTION NO : VCS060 X 2

DRAWING NO(S) : 2282.150-713-005B  
 OPERATION AND MAINTENANCE  
 MANUAL NO : OIM-713 001A

SPECIFICATION NO. : 2282.150-713

SHT. NO. : SDS-2 OF 3

CLIENT : NORTHEAST UTILITIES SERVICE CO.

DATE : 07/30/84

COMPILED BY : R. E. CONLON

<u>Subcomponent Identification</u>		<u>Service Life</u>	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Subcomponent</u>	<u>Material</u>	<u>(Years) By</u> <u>Thermal Aging</u> <u>Calculation</u> <u>(See Ref. NM)</u>	<u>Radia-</u> <u>tion</u> <u>(Rads)</u>	<u>Temper-</u> <u>ature</u> <u>(°F)</u>	<u>Threshold</u> <u>Radiation</u> <u>(rads)</u>	<u>Max. Service</u> <u>Temperature</u> <u>(°F)</u>		
Gasket	Asbestos	N/A	Note 1	Note 1	$1 \times 10^{12}$	1200	AC	NMR-4
Lubricants	Lubriplate #930AA	N/A	Note 2	Note 2	Note 2	Note 2	AE	EAS-2

Note 1: All harsh environments at the plant are below the threshold radiation and maximum service temperature level of asbestos.

Note 2: See EAS 2

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 O - Outstanding  
 N/A - Not Applicable



## SUBCOMPONENT DATA SHEET

JOB NO. : 12179-34 DESCRIPTION NOS. : VDS150-F-3  
VDS150-F-2

DRAWING NO(S) : 2362.150-714-006C

SPECIFICATION NO. : 2362.150-714

NAME : MILLSTONE 3

OPERATION AND MAINTENANCE  
MANUAL NO. : OIM-N/A

SHEET NO. : SDS-1 OF 2

CLIENT : NORTHEAST UTILITIES SERVICE CO

DATE : 7/24/84

COMPILED BY : R. E. CONLON

Subcomponent	Identification	Service Life (Years) By Thermal Aging Calculation (See Ref. NM)	Harsh Environment		Material Data		Status	Reference
			Radiation (Rads)	Temperature (°F)	Threshold Radiation (rads)	Max. Service Temperature (°F)		
Packing Ring	J. Crane 187-1 (asbestos)	N/A	Note 1	Note 1	$1 \times 10^6$	1200	AC	NMR-4
Wound Gasket	S/S 347 and Asbestos	N/A	Note 1	Note 1	$1 \times 10^6$	1200	AC	NMR-4
Packing Ring	Grafoil (Carbon)	N/A	Note 2	Note 1	$9.1 \times 10^5$	500	AC	NMR-20
O Ring	Nitrile Rubber (Buna N)	Note 4	$1 \times 10^6$	350	$1.0 \times 10^6$	225	AE	NMR-6, EAS-1
Lubricants	Lubriplate #930AA	N/A	Note 3	Note 3	Note 3	Note 3	AE	EAS-2

Note 1: All harsh environments at the plant are below the material threshold radiation and maximum service temperature level.

Note 2: This material is acceptable in all zones except AB-14 and AB-28. However, since these valves are not located in these zones, this is not a problem.

Note 3: See EAS-2

Note 4: See EAS-1

AC = Acceptable by Comparison  
AE = Acceptable by Evaluation  
O = Outstanding  
N/A = Not Applicable

SUBCOMPONENT DATA SHEET (Cont)

JOB NO : 12179-34 DESCRIPTION NO.: VG5060-B-3  
 V05060-C-2  
 V05060-C-3

DRAWING NO(S) : 2362.150-714-007A  
 2362.150-714-005A  
 2362.150-714-001A

SPECIFICATION NO.: 2362.150-714

NAME: MILLSTONE 3

OPERATION AND MAINTENANCE  
 MANUAL NO.: OIM-N/A

SHEET : SDS-2 OF 2

CLIENT: NORTHEAST UTILITIES SERVICE CO.

DATE: 7/24/84

COMPILED BY: R. E. CONLON

<u>Subcomponent Identification</u>		<u>Service Life</u> (Years) By <u>Thermal Aging</u> Calculation (See Ref. NM)	<u>Harsh Environment</u>		<u>Material Data</u>		<u>Status</u>	<u>Reference</u>
<u>Nonmetallic</u> <u>Subcomponent</u>	<u>Material</u>		<u>Radia-</u> <u>tion</u> (Rads)	<u>Temper-</u> <u>ature</u> (°F)	<u>Threshold</u> <u>Radiation</u> (rads)	<u>Max. Service</u> <u>Temperature</u> (°F)		
Packing Ring	J. Crane 1811 (asbestos)	N/A	Note 1	Note 1	1 x 10 <sup>1*</sup>	1200	AC	NMR-4
Wound Gasket	Flexitallic S/347 and asbestos)	N/A	Note 1	Note 1	1 x 10 <sup>1*</sup>	1200	AC	NMR-4
Lubricants	Lubriplate #930AA	N/A	Note 2	Note 2	Note 2	Note 2	AE	EAS-2

Note 1: All harsh environments at the plant are below the material threshold radiation and maximum service temperature level.

Note 2: See EAS-2

AC - Acceptable by Comparison  
 AE - Acceptable by Evaluation  
 D - Outstanding  
 N/A - Not Applicable