July 22, 2002

Mr. J. Alan Price, Vice-President -
Nuclear Technical Services/Millstone
c/o Mr. D. A. Smith, Process Owner -
Regulatory Affairs
Dominion Nuclear Connecticut, Inc.
Rope Ferry Road
Waterford, CT 06385

SUBJECT: MILLSTONE UNIT 2 - NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT NO. 50-336/02-009

Dear Mr. Price:

On June 21, 2002, the NRC completed a triennial fire protection team inspection at your Millstone Nuclear Power Station, Unit 2. The enclosed report documents the inspection findings which were discussed at an exit meeting on June 21, 2002, with you and other members of the Dominion Nuclear staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's regulations and with the conditions of your license. The purpose of the inspection was to evaluate your post-fire safe shutdown capability and fire protection program. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

No findings of significance were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

James C. Linville, Chief
Electrical Branch
Division of Reactor Safety

Docket No. 50-336
License No. DPR-65

Enclosure: NRC Inspection Report 50-336/02-009

cc w/encl:
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W. R. Matthews, Vice President and Senior Nuclear Executive - Millstone
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N. Burton, Esquire
V. Juliano, Waterford Library
S. Comley, We The People
J. Buckingham, Department of Public Utility Control
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REGION I

Docket No:	50-336
License No:	DPR-65
Report No:	50-336/02-009
Licensee:	Dominion Nuclear Connecticut, Inc.
Facility:	Millstone Nuclear Power Station, Unit 2
Location:	P. O. Box 128 Waterford, Connecticut 06385
Dates:	June 2 - June 21, 2002
Inspectors:	A. Della Greca, Sr. Reactor Inspector, Division of Reactor Safety P. Cataldo, Resident Inspector MP2, Division of Reactor Projects K. Young, Reactor Inspector, Division of Reactor Safety
Approved By:	James C. Linville, Chief Electrical Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000336/02-009, on 6/3 - 6/21/2002, Millstone Unit 2. Fire Protection.

The inspection was conducted by a team composed of regional specialists. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "no color" or by the severity level of the applicable violation.

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- No findings of significance were identified.

Report Details

Background

This report presents the results of a triennial fire protection team inspection conducted in accordance with NRC Inspection Procedure (IP) 71111.05, “Fire Protection.” The objective of the inspection was to assess whether Dominion Nuclear has implemented an adequate fire protection program and that post-fire safe shut down capabilities have been established and are being properly maintained. The following fire areas were selected for detailed review based on risk insights from the Millstone Nuclear Power Station, Unit 2, Individual Plant Examination of External Events:

- A-1B, Auxiliary Building - RBCCW Pump and Heat Exchanger Area, (-)25'
- A-1G, Auxiliary Building - General Area, (-)5'
- A-12A, Auxiliary Building - Boric Acid and Chemical Addition Tank Area, 14'
- A-24, Cable Spreading Room
- T-1 throughT-10, Turbine Building (Selected Zones)

This inspection was a reduced scope inspection in accordance with the March 23, 2001, revision to IP 71111.05, “Fire Protection.” Issues regarding equipment malfunction due to fire-induced failures of associated circuits were not inspected. Criteria for review of fire-induced circuit failures are currently the subject of a voluntary industry initiative. The definition of associated circuits of concern used was that contained in the March 22, 1982, memorandum from Mattson to Eisenhut, which clarified the requests for information made in Generic Letter 81-12.

3. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems

1R05 Fire Protection (71111.05)

.1 Programmatic Controls

a. Inspection Scope

During tours of the facility, the team observed the material condition of fire protection systems and equipment, the storage of permanent and transient combustible materials, and control of ignition sources. The team also reviewed the procedures that controlled hot-work activities and combustibles at the site. Additionally, the team reviewed several ignition source and combustible control permits. These reviews were accomplished to ensure that the licensee was maintaining the fire protection systems, controlling hot-work activities, and controlling combustible materials in accordance with WC 7, “Fire Protection Program,” and other fire protection program procedures.

b. Findings

No findings of significance were identified.

.2 Passive Fire Barriers

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe material condition and the adequacy of design of fire area boundaries, fire doors, and fire dampers. The team reviewed engineering evaluations, as well as surveillance and functional test procedures for selected items. The team also reviewed the licensee submittals and NRC safety evaluation reports (SERs) associated with fire protection features at Millstone, Unit 2, Nuclear Power Station. Additionally, the team reviewed the design and qualification testing of raceway fire barriers and performed a walkdown of selected barriers and reviewed surveillance procedures for fire wrap and structural steel. These reviews were performed to ensure that the passive fire barriers were properly maintained and met the licensing and design bases as described in the licensee submittals, NRC SERs, and the Millstone, Unit 2, Fire Hazards Analysis (FHA) Report."

The team randomly selected three fire barrier penetration seals in the cable vault and conducted a detailed inspection of the seals to confirm that they had been properly installed and qualified. The team reviewed associated design drawings, barrier and penetration seal engineering evaluations, test reports, and the fire barrier and penetration seal inspection procedure. The team compared the installed seal configurations with the design drawings and tested or evaluated configurations. The team also compared the penetration seal ratings with the ratings of the barriers in which they were installed. This was accomplished to ensure that the licensee had installed and maintained fire barrier penetration seals in accordance with the design and licensing bases as described in the licensee submittals, NRC SERs, and the Millstone Unit 2 Technical Requirements Manual (TRM).

b. Findings

No findings of significance were identified.

.3 Fire Detection Systems

a. Inspection Scope

The team reviewed the adequacy of the fire detection systems in the selected plant fire areas. This included a walkdown of the systems and review of the type of installed detectors as shown per location drawings. The team also reviewed licensee submittals and NRC SERs associated with the selected fire areas. Additionally, the team reviewed the licensee's National Fire Protection Association (NFPA) conformance report. These reviews were performed to ensure that the fire detection systems for the selected fire areas were installed and maintained in accordance with the design and licensing bases as described in the licensee submittals and NRC SERs. The team also reviewed fire detection surveillance procedures and the Millstone, Unit 2, TRM to determine the

adequacy of fire detection component testing and to ensure that the detection systems could function when needed.

b. Findings

No findings of significance were identified.

.4 Fixed Fire Suppression Systems and Equipment

a. Inspection Scope

The team reviewed the adequacy of the automatic wet-pipe sprinkler and deluge spray suppression systems in the cable vault, and selected areas of the turbine and auxiliary buildings by performing walkdowns of the systems and observing their material condition. Additionally, the team compared the sprinkler system installation drawings to the actual installed system in the cable vault. The team verified suppression system functionality and the adequacy of surveillance procedure testing by reviewing completed surveillance procedures, the TRM for Unit 2, the NFPA compliance report and the hydraulic calculations for the sprinkler and deluge systems. These reviews were performed to ensure that the automatic fixed suppression systems in the selected risk significant fire areas met the design and licensing bases as described in the licensee submittals and NRC SERs, and that the systems could perform their intended functions in the event of a fire in the respective areas.

b. Findings

No findings of significance were identified.

.5 Manual Fire Suppression Capability

a. Inspection Scope

The team walked down selected standpipe systems and observed portable extinguishers to determine the material condition of manual fire fighting equipment and verify locations as specified in the fire fighting strategies (pre-fire plans) and fire protection program documents. The team also reviewed electric fire pump and diesel fire pump flow and pressure tests to ensure that the pumps were meeting their design requirements. The team inspected the fire brigade's protective ensembles, self-contained breathing apparatus (SCBA), and various fire brigade equipment to determine operational readiness for fire fighting. The review included a walkdown of pre-staged equipment for smoke control purposes.

The team reviewed the fire brigade leader/member training and qualifications to assure that fire fighting personnel were properly trained and qualified. The team verified that selected fire brigade leaders and members had recently participated in a minimum of two fire drills and had current SCBA certification. The team also reviewed the fire brigade leader and fire brigade training documents.

The team reviewed fighting strategies for the selected areas to determine if appropriate information was provided to fire brigade members and plant operators to identify safe shutdown equipment and instrumentation, and to facilitate suppression of a fire that could impact safe shutdown.

The team reviewed the Millstone Unit 2 fire suppression effects analysis to determine if a pipe rupture, inadvertent actuation of a suppression system, or manual fire suppression activities in the selected fire areas could inhibit the plant's ability reach a safe shutdown condition. Additionally, the team performed in-plant walk-downs to evaluate the physical configuration of electrical raceways and safe shutdown components in the selected fire areas to determine whether water from an inadvertent pipe rupture or from manual fire suppression activities in these areas could cause damage that could inhibit the plant's ability to safely shutdown.

b. Findings

No findings of significance were identified.

.6 Safe Shutdown Capability

a. Inspection Scope

The team reviewed the Millstone Unit 2 Fire Hazards Analysis (FHA) and the Appendix R Compliance Report (Safe Shutdown Analysis) to confirm that the licensee had identified the methods and the structures, systems, and components (SSCs) necessary to achieve hot shutdown and cold shutdown, following postulated fires in the selected risk significant fire zones. In specific cases, the team verified that NRC-approved exemptions and appropriate Generic Letter 86-10 engineering evaluations had been performed in support of continued availability of SSCs during a fire. The team further reviewed the applicable piping and instrumentation drawings (P&IDs) to identify the components required for establishing the specified flow paths and for isolating the flow diversion paths. The team confirmed that the specified components had been identified as required safe shutdown equipment.

The team confirmed that the electrical power sources were adequate and evaluated the separation of selected power, control and instrumentation cables necessary to achieve safe shutdown. The team walked-down a sample of cable raceways and compared the as-built raceways to the related drawings and cable routing printouts to confirm the accuracy of the safe shutdown analysis.

The team evaluated, on a sample basis, electrical protective device coordination studies to ensure that the selected breaker/relay trip settings or fuse ratings adequately protected redundant or alternate safe shutdown equipment and prevented the inadvertent opening of upstream protective devices.

The team reviewed one line diagrams, electrical schematics and instrument loop diagrams to ensure that the transfer of safe shutdown control functions to the alternate shutdown facility adequately isolated fire affected circuits and included sufficient controls and instrumentation to safely shutdown the reactor. The team also performed field

walk-downs to validate the locations of equipment considered in the analysis and to evaluate the protection of the equipment from the effects of fires. Specifically, the team verified that fire or suppression activities would not damage redundant equipment necessary to achieve hot shutdown.

The team sampled sections of abnormal operating procedures (AOPs), associated with shutdown following a fire, to confirm the availability of selected components required for different fire scenarios.

The team verified that the applicable requirements of 10 CFR 50, Appendix R, sections III.G and III.L for achieving and maintaining safe shutdown were properly addressed. The team verified that systems necessary to assure the safe shutdown functions of reactivity control, reactor coolant makeup, reactor heat removal, and process monitoring were protected or independent from the selected areas. Where deviations from Appendix R requirements were identified, the team verified that the deviations had been approved and that conditions required by the deviations were implemented and being maintained.

b. Findings

No findings of significance were identified.

.7 Safe Shutdown Circuit Analyses

a. Inspection Scope

The team reviewed applicable system flow diagrams, electrical one line diagrams, control panel diagrams, control circuit schematic diagrams, cable tray designations, fire zone/area arrangements drawings, panel and rack wiring diagrams, operating procedures, circuit breaker coordination curves, calculations, modifications, vendor information and the electrical cable and raceway information system to verify that the conclusions of selected sections of the safe shutdown analysis were correct and that the procedures, equipment, fire barriers, and systems provided were sufficient to assure post-fire safe shut down of the plant.

Due to the issuance of Change Notice 00-020 against Inspection Procedure 71111.05, “Fire Protection,” the team did not review associated circuit issues during this inspection. This change notice has suspended this review pending completion of an industry initiative in this area.

b. Findings

No findings of significance were identified.

.8 Operational Implementation of Post-Fire Safe Shutdown Capability

a. Inspection Scope

The team reviewed post-fire shutdown procedures for the selected areas to determine if appropriate information is provided to plant staff to perform required actions to achieve and maintain safe shutdown. This review included a comparison of the procedures with the safe shutdown analysis to ensure that the actions assumed in the safe shutdown analysis were included in the procedures. Postulating a fire scenario that requires shutdown of the plant from outside of the control room, the team conducted a detailed review of AOP 2579A, Revision 009-02, "Fire Procedure for Hot Standby Appendix R Fire Area R-1." The review included a walk down of the procedure with a licensed senior reactor operator and a non-licensed equipment operator. This review also addressed:

1. usability of the procedure from a human factors standpoint;
2. operator familiarity with the steps of an infrequently used procedure;
3. verification that appropriate equipment was staged for specific Appendix R fire usage, i.e., tools for manual valve operation;
4. existence of adequate and accessible communications and emergency ingress/egress capability, i.e., radios and security door keys;
5. verification that operator actions in the field would not be impeded due to the existence of fire in the area; and
6. verification that hot shutdown and entry into cold shutdown could be achieved from the alternate shutdown panel.

The team also verified that various aspects of the operator training programs adequately addressed alternate shutdown capability, such as the use of Job Performance Measures (JPMs) for various tasks, as well as applicable aspects of the emergency plan.

The team reviewed applicable maintenance procedures to ensure that post-fire repairs of potentially damaged equipment could be accomplished and that cold shutdown could be achieved and maintained within the required time. This review also verified availability, storage and condition of staged safety-related equipment that would be used for the repair of damaged equipment.

b. Findings

No findings of significance were identified.

.9 Post-Fire Safe Shutdown Emergency Lighting and Communications

a. Inspection Scope

The team observed the placement and aim of emergency battery light units throughout the plant to evaluate their adequacy for illuminating access and egress pathways and any equipment requiring local operation for post-fire safe shutdown. The team also evaluated installed and portable communication systems to determine if communications could be maintained in the event of a fire in the selected areas and during a shutdown from outside of the control room.

The team reviewed preventive maintenance procedures, surveillance procedures and vendor information to determine if adequate surveillance testing was being accomplished to ensure operation of the emergency lights.

b. Findings

No findings of significance were identified.

.10 Electrical Raceway Fire Barrier Systems

a. Inspection Scope

The team reviewed the design and qualification testing for raceway fire barriers and performed a walk-down of installed barriers in the selected fire areas. These reviews were performed to ensure that the electrical raceway fire barrier systems met the licensing and design bases as described in the licensee submittals, NRC SERs, and the Millstone, Unit 2, Fire Hazards Analysis (FHA) report.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

.1 Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team reviewed self-assessment reports and quality assurance audit reports for fire protection activities conducted during the past three years. Selected condition reports (CRs) for fire protection and post-fire safe shutdown equipment were also reviewed. This review included the CRs initiated to address issues identified during this inspection. The team also reviewed selected outstanding and completed fire protection equipment work requests. These reviews were conducted to determine if the Millstone, Unit 2, was identifying fire protection deficiencies and implementing appropriate corrective actions.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

.1 Exit Meeting Summary

The inspectors presented their preliminary inspection results to Mr. A. Price and other members of the Millstone, Unit 2, staff at an exit meeting on June 21, 2002.

The inspectors asked whether any materials examined during the inspection should be considered proprietary. Materials identified as proprietary were returned to the licensee at the completion of the inspection.

PARTIAL LIST OF PERSONS CONTACTED

Dominion Nuclear Connecticut, Inc.

J. Armstrong	Fire Protection Engineer
D. Dodson	Supervisor, Licensing
D. Federicks	Regulatory Affairs Engineer
S. Garvin	Supervisor, Site Fire Protection
P. Grossman	Nuclear Engineering Specialist
B. Hayes	Technical Programs Specialist
J. Healey	Fire Protection Engineer
D. Hicks	Director, Nuclear Safety/Licensing
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S. Kuzel	Technical Programs Engineer
P. Lessard	Fire Protection Systems Engineer
J. Mangano	Fire Protection Engineer
F. Pellizzari	Safe Shutdown Consultant (EPM)
A. Price	Site Vice President
P. Raimondi	Technical Programs Engineer- Appendix R
S. Scace	Director, Engineering
D. Scott	Technical Programs Engineer
D. Smith	Manager, Licensing
J. Tarpinian	Appendix R Consultant (EPM)
S. Wainio	Supervisor Nuclear Engineering Technical Programs

Nuclear Regulatory Commission

W. Lanning	Director, Division Reactor Safety
J. Linville	Chief, Electrical Branch, DRS
S. Schneider	Senior Resident Inspector

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

LIST OF ACRONYMS USED

AOP	Abnormal Operating Procedures
CFR	Code of Federal Regulations
CR	Condition Report
FHA	Fire Hazards Analysis
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
JPM	Job Performance Measure
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
P&ID	Piping and Instrumentation Drawing
RBCCW	Reactor Building Closed Cooling Water
SCBA	Self Contained Breathing Apparatus
SDP	Significance Determination Process
SER	Safety Evaluation Report
SSC	Structures, Systems, Components
TRM	Technical Requirements Manual

LIST OF DOCUMENTS REVIEWED

Fire Protection Program Documents

Updated Final Safety Analysis Report (Selected Sections)
Millstone Unit 2 Fire Fighting Strategies (Pre-Fire Plans), April 2001
Millstone Unit 2 Fire Hazards Analysis (FHA), Rev. 6

U2-14-OPS-BAP02	MP2 Technical Requirements Manual, 3/19/02
25203-SP-M2-SU-1046	MP2 Appendix R Compliance Report, Rev. 00

Modification Packages

DCR No. M2-97034	Thermo-Lag Modifications for MP2, Rev. 0
DCR No. M2-97043	Pipe Cross Tie Between Fire Protection and Service Wtr. Systems, Rev 1
DCR No. M2 98035	Compensatory Measures for Vital Switchgear Rooms - Loss of Ventilation, Revision 1
DCR No. M2-98055	Modification to Provide Alternate Power for Valves 2-CH-517 & 2-CH-519
DCR No. M2-98095	TDAFWP Redundant Power Supply
DCR No. M3-00012	Millstone Unit 3 Repowering of MP1 Fire Pump, Stack and Auxiliaries, Rev. 0
DM2-00-1851-98	Code # for Firezone R, Appendix “R,” Fireproof Cable
MMOD M2-98045	Appendix R Radio Communication Modification, Rev. 1
MMOD M2-98066	Turbine Building Fire Sprinkler System Additions, Rev. 0
PDCR 2-80-86	Millstone Unit 2 Fire Shutdown System

Piping and Instrumentation Drawings

25203-2006 Sh. 1/5	Main Steam From Generators
25203-24020	Area Drains & Underground Piping Turbine Building EL. 14'-6"
25203-26011	Fire Protection System
25203-26012	Cond. Air Removal Water Box Priming & Turbine Bldgs. Sump
25203-29242	Plant Sprinkler Systems
25203-34306	Conduit Plan, Fire Detection Cable Vaults (45'0")(25'6"), & Intake Structure, Millstone Unit 2
25205-25003	Station Fire Loop Operating and Hydraulic Analysis Schematic
25212-26970	P&ID Fire Protection System (Fire Pump House and Spray)

Miscellaneous Drawings

23203-24091	Fire and Air Seal, Conduit Silicone Foam Floor/Wall
25203-24091	Notes for Standard Penetration Seal Designs
25203-24092	Penetration Seal Survey Map and Inspection Record
25203-24100	Turbine and Auxiliary Bldg. EL. 25'6" and Turbine Bldg. EL. 45'0" Maps
25203-30100	Arrangement Fire Shutdown Panel C09
25203-30101	Arrangement Fire Shutdown Panel C10
25203-30102	Instrument Rack Loading Diagram Fire Shutdown Panel C09
25203-31234 Sh.1-6	Connection Diagram Fire Shutdown Panel C10
25203-54030	Auxiliary Building Access Hatch and Fire Barrier Between HVAC Room and Cable Spreading Area

25212-29680	TCO-050 Silicone Foam Fire or Air Seals For Sleeve, Conduit, Cast, or Core Bored Openings up to 5" Dia.

Control Circuit Schematics

25203-32002 Sh 16	4.16kV Switchgear Kirk Key Interlocks
25203-32007 Sh 23	Pressurizer Relief SOV RC402
25203-32007 Sh 24	Pressurizer Relief SOV RC404
25203-32009 Sh 35	Aux Spray SOV CH517 (2-CH-517)
25203-32009 Sh 37	Charging Line Distribution SOV CH519 (2-CH-519)
25203-32009 Sh 38	Charging Pmp Disc to Regen Hx MOV HV2524 (CH-429)
25203-32009 Sh 39	Letdown Heat Exchanger Isolation Valves Ltdn Ctmt Iso (2-CH-089) & RBCCW Outlet (RB402)
25203-32009 Sh 40	Charging Pump MP 18A
25203-32009 Sh 41	Charging Pump Control MP18B
25203-32009 Sh 42	Charging Pump Pwr Supply Crossover P18B
25203-32009 Sh 42A	Charging Pump Control MP18B
25203-32009 Sh 43	Charging Pump MP 18C
25203-32009 Sh 43A	Charging Pump MP 18C
25203-32012 Sh 12	Aux Feedwater Pump MP9B
25203-32012 Sh 22	Aux Feedwater Control Valve HV 5279 (2-FW-43B)
25203-32012 Sh 22A	Aux Feedwater Control Valve HV 5279 (2-FW-43B)
25203-32020 Sh 1	Main Stm Iso Bypass Valve HV4218 (2-MS-65A)
25203-32020 Sh 2	Main Stm Iso Bypass Valve HV4222 (2-MS-65B)
25203-32020 Sh 14	Stm Gen #1 Blowdown Line Isolation Valve HV4246 (2-MS-220A)
25203-32020 Sh 15	Stm Gen #2 Blowdown Line Isolation Valve HV4248 (2-MS-220B)
25203-32020 Sh 18	SG #1 Main Steam Iso Trip Vlv HV4217 2-MS-64A Channel #1
25203-32020 Sh 19	SG #1 Main Steam Iso Trip Vlv 2-MS-64A Channel #2 HV 4217
25203-32020 Sh 20	SG #2 Main Steam Iso Trip Vlv HV4221 2-MS-64B Channel #2
25203-32020 Sh 21	SG #2 Main Steam Iso Trip Vlv 2-MS-64B Channel #1 HV 4221
25203-32020 Sh 27	Steam Generator 2 Dump to Atmosphere PV 4224
25203-32020 Sh 42	Aux SGFP Turbine H21 Gov. Speed Adjusting Motor
25203-32020 Sh 43	Steam Dump & Bypass Valves
25203-32020 Sh 50	Steam Dump & Bypass Valves
25203-32020 Sh 49	Steam Gen. Aux Feed Pump Turbine H21 MOV SV4188 Schematic
25203-32020 Sh 49A	Steam Gen. Aux Feed Pump Turbine H21 MOV SV4188 Schematic
25203-32020 Sh 61	Atmospheric Steam Dump Valves Quick Open Control PY 4223A, PY4224A

Loop Diagrams

25203-28500 Sh.4	JI-002 RPS Output Wide Range NI (Ch. B) Loop Diagram
25203-28500 Sh.5	JI-002B RPS Output Wide Range Ch. B Loop Diagram
25203-28500 Sh.55	PT-102B-1 Pressurizer Pressure Wide Range 0-3000 Psig Loop Diagram
25203-28500 Sh.59	LT-103 Pressurizer Level Loop Diagram
25203-28500 Sh.99B	TE-125 & PT-103 Cold Leg Temp. to Reactor Loop Diagram
25203-28500 Sh.100	TE-121X Hot Leg From Reactor To Steam Gen. #2 Loop Diagram
25203-28500 Sh.203	LT 208 Boric Acid Tank T8B Loop Diagram
25203-28500 Sh.356	PT-1023B Stm. Gen. Press. Loop Diagram

25203-28500 Sh.381 LT1123B Steam Generator Level Loop Diagram
25203-28500 Sh.489 PT-4223 Stm. Gen. #1 Dump to Atmos. Loop Diagram
25203-28500 Sh.490 PT-4224 Steam Generator #2 Dump to Atmosphere
25203-28500 Sh.490A PT-4224 Steam Generator #2 Dump to Atmosphere
25203-28500 Sh.598 FT5278B Aux. Fd. Out to Gen. #2 Loop Diagram
25203-28500 Sh.600 LT5282 Condenser Storage Tank Loop Diagram

Raceway Plans

25293-34004	Raceway Plan Turbine Area 2 El. 14’-6"
25293-34011	Raceway Plan Turbine Area El. 45’-0"
25293-34013	Raceway Plan Turbine Area 2 El. 54’-6"
25293-34018	Raceway Plan Turbine Area El. 25’-6" & 36’-6"
25293-34019	Raceway Sections Aux. Bldg.
25293-34020	Raceway Sections Aux. Bldg.
25293-34021	Raceway Plan Aux. Bldg. Area 6 & 7 El. (-) 45’-6"
25293-34022	Raceway Plan Aux. Bldg. Area 6 El. (-) 25’-6"
25293-34023	Raceway Plan Aux. Bldg. Area 7 El. (-) 25’-6"
25293-34024	Raceway Plan Aux. Bldg. Area 6 El. (-) 5’-0"
25293-34025	Raceway Plan Aux. Bldg. Area 7 El. (-) 5’-0"
25293-34026	Raceway Plan Aux. Bldg. Area 6 El. 14’-6"
25293-34027	Raceway Plan Aux. Bldg. Area 7 El. 14’-6"
25293-34027 SH.1	Raceway Plan DC Equipment Room Aux. Bldg. Area 7 El. 14’-6"
25293-34028	Raceway Plan Aux. Bldg. Area 8 & 9 El. 14’-6"
25293-34029	Raceway Plan East Elect Pent. Rm. El. 14’-6"
25293-34030	Raceway Plan West Elect Pent. Rm. El. 14’-6"
25293-34031	Raceway Plan Cable Vault Area 6 El. 25’-6"
25293-34032	Raceway Plan Cable Vault Area 7 El. 25’-6"
25293-34032 Sh. 1/3	Raceway Plan Cable Vault Area 7 El. 25’-6" Fac 1
25293-34032 Sh. 2/3	Raceway Plan Cable Vault Area 7 El. 25’-6" Fac 2
25293-34032 Sh. 3/3	Raceway Plan Cable Vault Area 7 El. 25’-6" Fac Z3, Z4 & 5
25293-34033	Raceway Plans & Sections Cable Vault Penetration Area El. 25’-6"
25293-34034	Main Turbine Vibration Monitoring Raceway Plan El. 54’-6"
25293-34035	Cable Vault Sections

One Line Diagrams

SKE-3.1-ELEC DIST	Emergency System One Line Diagram For Appendix R
25203-30001	Main Single Line Diagram
25203-30002	Single Line Meter and Relay Diagram Generator No. 2, Main, Norm & Reserve Station Service Transformers
25203-30005	Single Line Meter and Relay Diagram 4.16 kV Emerg. Buses 24C, 24D
25203-30006 Sh.1	Single Line Meter and Relay Diagram 4160V Emergency Diesel Generator H7A (15G-12U)
25203-30006 Sh.2	Single Line Meter and Relay Diagram 4160V Emergency Diesel Generator H7B (15G-13U)
25203-30008	Single Line Diagram 480V Unit Substation Emerg. 22E (B5) & 22F (B6)
25203-30009	Single Line Meter & Relay Diagram 4.16kV Emerg Bus 24E(A5), 24G(A7)

25203-30022 Sh.1	(DV10) 125 VDC & 120VAC Distribution Panel Schedule
25203-30024	Single Line Diagram 125 VDC Emerg. & 120VAC Vital Sys.
25203-30025	Single Line Riser Diagram Lighting Panels & Transformers
25203-30044 Sh.8	Schematic Diagram 4.16kV Bus 24D (A4)

Engineering Evaluations/Safety Evaluations/Reports/Qualification Tests

FP-EV-98-0005	Technical Evaluation of the Partial Suppression and Partial Detection in Appendix R Fire Area R-3, Rev. 2
FP-EV-98-0013	Technical Evaluation of the Separation Between Appendix R Fire Areas R-1 and R-2 and the MCC B61 Enclosure, Millstone Unit 2, Rev. 1
FP-EV-98-0023	Technical Evaluation for Lack of a Rated Fire Door Penetrating the Appendix R Boundary Wall Separating the Unit 2 Control Room and East 480 V Load Center Room, Millstone Unit 2, Rev. 0
FP-EV-98-0048	Technical Evaluation for Cable Vault Access Hatch Seals, (Old Evaluation #122), Millstone Unit 2, Rev. 0
FP-EV-98-0049	Seismic Gap Fire Seals Around Column E 15 in the Floor of the Aux., Bldg. Cable Vault Floor at EL 25'6", Millstone Unit 2, Rev. 0
FP-EV-98-0059	Technical Evaluation for Available of MCC B61 Air Conditioning Unit following a Fire on 14'6" Elevation of the Auxiliary Building (Fire Zone A-12A), Millstone Unit 2, Rev. 0
FP-EV-98-0006	Technical Evaluation for The Partial Suppression and Partial Detection in Appendix R Fire Area R-1, Rev. 0
FP-EV-99-0010	Technical Evaluation for The Configuration of Fire Dampers 2-HV-140A & 2-HV-140B in Aux. Bldg. 14'6" EL., Millstone Unit 2, Rev. 1
FP-EV-00-0001	Technical Evaluation for The Configuration of Fire Damper 2-HV-188 in Auxiliary Building 14'6" EL., Millstone Unit 2, Rev 1
M2-EV-98-0206	Technical Evaluation for Review of EWR 98006 Fire Protection Improvements Against Fire Protection/Appendix R requirements and NFPA Codes
S2-EV-99-0011	TDAFWP Redundant Power Supply
Test 1-4	Three hour Fire Endurance Test of Thermo-Lag 330-1 Fire Protection Envelope (24" Cable Tray with Air Drop Assembly), Rev. 1
Test 1-6	One hour Fire Endurance Test of Thermo-Lag 330-1 Fire Protective Envelope (5", 3" & 3/4" Alum. and 3" Steel Conduit Assemblies), Rev. 1
Test 3-3	NEI Fire Endurance Test of a Thermo-Lag 330-1 Fire Protective Envelope, Two Large Box Enclosures (Each Containing Two Pair of Nested 6" wide x 4" deep Aluminum Cable Trays For Framing)
86-10 Eng. Eval. #96	Internal Conduit Seal Design - 8" Silicone Foam Without Permanent Damming, 8/24/90
VN2000-R-01	Millstone Point Unit 2 Station Thermo-Lag Reduction Report, Rev. 1
0024-00119-TR-01	Thermo-Lag Assessment Report for Northeast Utilities Haddam Neck and Millstone Unit 1 and 2, Rev.1
14980-100676	Fire Endurance Test of Articles Protected with Thermo-Lag Fire Barrier Systems, 1/24/97
25203-ER-98-0151	Fire Test Performed for Florida Power & Light Co. for Electrical Raceways Protected with Thermo-Lag Fire Barrier Systems, Rev. 0
25203-ER-99-0066	MP2 Appendix R Cold Shutdown Repair for SI Tank Nitrogen Vent Valves, Revision 0.

25203-ER-99-0092	Millstone Unit 2 Appendix R Cooldown Analysis Assumptions and Results, Revision 3.

Calculations

91-FPE-111GF	Millstone Site Fire Water Hydraulic Calculation Verification to 1989 Flush/Flow Test Data, Rev. 0
96-ENG-01528E2	Ampacity Derating of Cables Due to Thermo-Lag, Rev. 2
97-ENG-01912E2	4.16 kV Switchgear Relay Settings, Rev 0
97-FIRE-1016CG	Proto-Flo Database for the Millstone Site Fire Water Loop, Rev.1
EPM Calc. # 186	Millstone Point Nuclear Power Plant Unit 2 Combustible Loading Re-Analysis Calculation, Revision 1.
PA84-065-753GE	480V Breaker Overcurrent Trip Devices Coordination Study, Rev 2
PA85-082-0812GE	125 VDC Coordination Study, Rev 3
W2-517-744-RE	MP2 Appendix R Cooldown, Revision 3.
Fire Suppression	An Engineering Evaluation of the Consequences of Inadvertent Operation or Rupture of Fire Suppression Systems at Millstone Unit 2," 1/1998

Procedures

AOP 2551	Shutdown From Outside the Control Room, Revision 8
AOP 2559	Fire, Revision 07-01.
AOP 2579A	Fire Procedure for Hot Standby Appendix R Fire Area R-1, Rev. 09-02
AOP 2579AA	Fire Procedure for Cooldown and Cold Shutdown, Appendix R Fire Area R-1, Revision 04-01.
C SP 600.6	Electric Fire Pump M7-8 Monthly Operability Demonstration, Completed 5/3/02 & 5/25/02
C SP 600.7	Electric Fire Pump M7-8 Annual Operability Demonstration, Completed 2/1/01 & 1/3/02
C SP 600.8	Diesel Fire Pump M7-7 Monthly Operability Demonstration, Completed 5/8/02 & 5/28/02
C SP 600.9	Diesel Fire Pump M7-7 Annual Operability Demonstration, Completed 2/1/01 & 12/13/01
C SP 600.13	P-82 Electric Fire Pump Monthly Operability Demonstration, Completed 4/26/02 & 5/17/02
C SP 600.14	P-82 Electric Fire Pump Annual Operability Demonstration, Completed 10/10/01
DCM-01	Program Policy and Overview, Rev. 009-01
DCM-03	Plant Changes, Rev. 011-01
DCM-04	Design Inputs and Design Verification, Rev. 7
DCM-05	Calculations, Rev. 009-01
DCM-06	Specifications and Design Basis Summaries, Rev. 009
DCM-07	Design Drawing Control, Rev. 009
EOP 2541	Appendix 18, Simultaneous Hot and Cold Leg Injection
MP-24-FPP-FAP1.1	Performing Detailed Fire Protection Reviews, and Developing and Maintaining the Unit Fire Hazards Analysis, Rev. 000
MP-24-FPP-FAP1.2	Performing Detailed Fire Safe Shutdown Reviews and Developing and Maintaining Fire Safe Shutdown Analyses, Rev. 000

MP-24-FPP-FAP1.3	Fire Protection and Appendix R/BTP CMEB 9.5-1 GL 86-10 Technical Evaluations," Rev. 000
MP-24-FPP-FAP1.4	Guidance for Fire Fighting Strategies (Pre-Fire Plans), Rev. 000
MP-24-FPP-GDL01	Fire Protection Program Reportability/Operability Evaluation Guidance, Rev. 000
MP-24-FPP-PRG	Fire Protection Program, Rev. 002-01
MP-26-EPA-REF02	Millstone Unit 2 Emergency Action Level (EAL) Technical Basis Document
MP 2720N	Portable Emergency Lighting Unit Inspection, Compl. 8/20/00 & 3/23/02
MP 2720U1	Cold Shutdown Fire Damage Repair Procedure for Fire Area R-1 (Appendix R), Revision 04-02.
NGP 6.05	Processing and Control of Purchased Material, Equipment, Parts, and Services, Revision 011-01
NMM 002	Storage of Items, Revision 04-04
OA-11	Self-Assessment Process, Rev. 003
OP 2255	Unit 2 AOP Upgrade User's Guide
OP 2348A	6,900 and 4,160 Volt Breaker Operation, Revision 02-02.
RAC-03	Changes and Revisions to Final Safety Analysis Reports, Rev. 1
RAC-05	Reportability Determinations and Licensee Event Reports, Rev. 002-01
RAC-12	50.59 Screens and Evaluations, Rev. 003-01
SFP 6	Fire Protection System Underground Main Flow and Flush Test, Completed 2/13/98 and 11/22/00
SFP 9	Unit 2 Fire Extinguisher Inspection Data Sheet, Completed 5/17/02
SFP 21	Appendix "R" Fire Cage Inventory, Revision 00–03.
SP 2618C	Fire Protection System Smoke and Heat Detector Test, Completed 5/10/02 & 5/17/02
SP 2618D	Fire Protection System Sprinkler and Deluge Design Function Test, Completed 7/21/00 & 1/24/02
SP 2618F	Fire Pump Performance Test," Completed 4/1/97, 2/13/98, 1/7/99, 1/4/00 & 11/9/00
SP 2618K	Unit 2 Fire Protection System Alignment Verification, Completed 3/15/02, 4/12/02 & 5/9/02
SP 2618L	Fire Protection Coating Inspection, Rev. 1
SP 2618L	Fire Protection Coating Inspection, Completed 10/17/01
SP 2652A	Fire Protection System Water Flow Alarm Test, Compl. 4/30/02 & 5/27/02
SP 2652B	Fire Protection System Tamper Alarm Test, Completed 4/14/02 & 5/10/02
TPD-7.204	Plant Access Training, Rev. 12
TPD-7.205	Emergency Services Training Program Description, Rev. 4
WC-7	Fire Protection Program," Rev. 003-03
WC-16	Engineering Program Indicators, Rev. 002

Training Documents

Fire Brigade Continuous Training Matrix, 6/18/02
Fire Brigade Student Qualification/Training Status, 6/18/02
Fire Brigade Drill Statistics, 2002
Fire Scenarios, Drills and Critiques

2002-5	Cable Spreading Room 24' 6" Unit 3
2002-7	3BYS-CHGR6 38'6" Unit 3, 4/15/02

2002-12 Cable Vault 25'6" Unit 2, 1/30/02

Fire Brigade Training Material

Fire Brigade Training Manual, Rev. 1

Fire Brigade Leader Training Manual, Rev. 0

FB-00012 Self Contained Breathing Apparatus Scott 4.5, Rev. 7
FB-00016 Fire Behavior, Rev. 2
FB-00017 Site Fire Protection Systems, Rev. 6
FB-00019 Fire Fighting and Electrical Hazards, Rev. 3
FB-00021 Portable Fire Extinguishers, Rev. 4
FB-00024 Flammable and Combustible Liquids, Rev. 2
FB-00026 Lighting, Rev. 1
FB-00027 Fire Brigade Makeup and Indoctrination, Rev. 2
FB-00029 Ventilation, Rev. 4
FB-00030 Fire Brigade Practice Scenarios, Rev. 2
FB-00031 Introduction to Firefighting Streams, Rev. 2
FB-00032 Communications, Rev. 2
FB-00033 Fire Brigade Tactical Operations, Rev. 2
FB-00034 Personal Protective Clothing and Equipment, Rev. 2
FB-00037 Introduction to Fire Brigade Initial Training, Rev. 4
FB-00063 Fire Area Review and Strategies, Rev. 4
FB-00140 Fire Brigade Advisor Orientation, Rev. 0
FB-00141 Fire Brigade Advisor Practice Scenario(s), Rev 0
FB-00142 Fire Protection Advisor Site Fire Protection Tour, Rev. 0
FB-00144 Fire Brigade Captain, Rev. 1

Operator Training Lesson Plan A51-01-C, Shutdown from outside the Control Room

Operator Training Job Performance Measures:

JPM 085 Local Manual Operation of the Turbine Driven Auxiliary Feedwater Pump, Revision 9.
JPM 088 Commence Shutdown From Outside the Control Room, Revision 3.
JPM 092 Transfer Controls from the Control Room to C-10, Revision 4.
JPM 093 Local Manual Operation of the "A" Atmospheric Dump Valve, Revision 8.

Audits, Observations, and Self-Assessments

MP-99-A17 Fire Protection Program, August 30, 1999
MP-00-A11 Fire Protection Program, November 29, 2000
MP-01-A11 Fire Protection Program, August, 22, 2001
MPS-ENG-02-001-19 Walkdown of the MP2 Turbine Bldg. for Combustibles/Safety/Equipment Conditions, 3/13/02
MPS-ENG-02-001-28 Walkdown of MP2 Turbine and Auxiliary Buildings Prior to Restart, 3/26/02
MPS-ENG-02-002-01 Observation of Site Fire Brigade Training, Drill, and Post Drill Critiques (1/9-10/2002), 1/9/02
MPS-ENG-02-002-05 Observation of Housekeeping Conditions and Flammable/Combustible Storage - MP2 Turbine Bldg., 1/22/02
MPS-ENG-02-002-11 Observation of Site Fire Brigade Quarterly Drill, 1/30/02
MPS-MNG-01-019-01 Observation of Site Fire Protection Hydro Test of Fire Hoses, 7/28/01
MPS-MNG-01-022-01 Site Fire Brigade Drill Performance," 10/17/01
MPS-MNG-01-022-05 Observation of a Mutual Aid Fire Training Drill, 11/13/01

MPS-MNG-01-022-07 Observation of Fire Watch Hands-0n Training, 11/27/01
MPS-MNG-01-022-08 Partial Fire Protection Site Walkdown-Combustible Material Storage, 11/28/01
MPS-MNG-01-022-12 Observation of Site Firewater System Valve Cycling (SFP 23), 12/17/01
MPS-MNG-02-001-06 Walkdown of MP2 Auxiliary Building to Assess FP/Safety/FME Conditions, 2/25/02
MPS-MNG-02-001-16 Verification of Fire Watch Training and Qualifications, 3/6/02
MPA-SP-00-027-03 SFP 6, Fire Protection System Underground Main Flow & Flush Test, 11/22/00
ES-SA-00-004 Effectiveness Review for CR M3-98-0994, Self Assessment of the Fire Protection Program, Conducted 9/1-29/00
MP-SA-01-089 Fire Brigade Member Structural Fire Fighting PPE, 6/5/01
MP-SA-02-011 Fire Brigade Drill Performance, 6/2002

Corrective Action Program Documents

CR-M2-98-1898	CR-M2-98-1904	CR-M2-98-2707	CR-M2-00-1976
CR-01-00376	CR-01-00892	CR-01-02866	CR-01-00437
CR-01-02211	CR-01-03369	CR-01-03993	CR-01-04283
CR-01-04309	CR-01-04382	CR-01-04561	CR-01-04924
CR-01-05347	CR-01-05750	CR-01-07066	CR-01-07088
CR-01-07375	CR-01-07660	CR-01-07704	CR-01-07711
CR-01-08190	CR-01-08747	CR-01-08766	CR-01-09000
CR-01-11024	CR-01-11031	CR-01-11921	CR-02-00125
CR-02-00196	CR-02-00764	CR-02-01533	CR-02-01601
CR-02-03702	CR-02-04274	CR-02-05139	CR-02-05314
CR-02-05367	CR-02-05536	CR-02-05995	CR-02-06162
CR-02-06298	CR-02-06408	CR-02-06643	CR-02-06446
CR-02-06467	CR-02-06482	CR-02-06518	CR-02-06537
CR-02-06546	CR-02-06552	CR-02-06609	CR-02-06643
CR-02-06649	CR-02-06680	CR-02-06682	CR-02-06733
CR-02-06736	CR-02-06741	CR-M3-00-03020	

Work Requests (WRs)

MP 94 04808	MP 99 08035	MP 99 11725	MP 00 15633
M2 00 20327	M2 01 05448	M2 01 11364	M2 01 14309
M2 01 14706	M2 01 15060	M2 01 15073	M2 01 15863

Automatic Work Orders (AWOs)

M2-99-09622	M2-00-11196	M2-00-12540	M2-01-05291
M2-01-05770	M2-01-11671		

Miscellaneous Documents

Air Balance Inc., Data Sheet for Model 319BLH UL Classified Fire Damper
Control of Combustible and Flammable Material Fire Prevention Permits

24089-02-FP	24090-02-FP	24092-02-FP	24093-02-FP

24094-02-FP
Fire Protection Impairment Log for 6/3/02
Ignition Source Permits
24079-02-IS 24081-02-IS 24083-02-IS 24100-02-IS
24101-02-IS

NRC Letter dated 9/19/78	Millstone Nuclear Power Station, Unit No. 2 Amendment (43) to Facility Operating License
NRC Letter dated 10/21/80	Safety Evaluation of Acceptable Fire Protection Items Millstone Unit No. 2
NRC Letter dated 11/11/81	Fire Protection Exemption - Haddam Neck Plant and Millstone Station, Unit 2
NRC Letter dated 4/15/86	Appendix R Exemption Requests for Millstone Unit 2
NRC Letter dated 7/17/90	Revocation of Exemption From 10 CFR Part 50, Appendix R, Sections III.G. and III.L for Certain Fire Areas - Millstone Unit 2
NRC Letter dated 12/18/98	Completion of Licensing Action for Generic Letter 92-08, “Thermo-Lag 330-1 Fire Barriers,” Dated December 17, 1992, Millstone Nuclear Power Station, Unit No. 2 (TAC No. M85571)
0784-00001-TR-02	NEI Application Guide for Evaluation of Thermo-Lag 330 Fire Barrier Systems, Rev. 1
05-0240-05-005	NFPA Code Compliance Report and Closure Package, 1986
Vendor Manual ELU	Exide Lightguard
Vendor Manual ELU	Holophane Company
UFSAR Change Request 01-MP2-19	Site Water Supply System, 3/26/99
MI-2AI-130	Foxboro Spec 200 Current-to-Voltage Converter Model 2AI-H2V
TI-2AO-120	Foxboro Spec 200 Voltage-to-Current Converter Model 2AO-V2H