January 3, 2005

Mr. David A. Christian
Sr. Vice President and Chief Nuclear Officer
Dominion Resources
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: MILLSTONE POWER STATION UNIT 2 NRC INSPECTION REPORT 05000336/2004017

Dear Mr. Christian:

On November 19, 2004, the U. S. Nuclear Regulatory Commission (NRC) completed an engineering team inspection at Millstone Unit 2. The enclosed inspection report presents the results of that inspection, which were discussed at an exit meeting on November 19, 2004 with Mr. J. Alan Price and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety, and compliance with the Commission's rules and regulations and with the conditions of your license. The inspection consisted of system walkdowns; examination of selected procedures, drawings, modifications, calculations, surveillance tests and maintenance records; and interviews with station personnel.

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 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/

Lawrence T. Doerflein, Chief
Safety Systems Branch
Division of Reactor Safety

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

Enclosure: Inspection Report 05000336/2004017
w/attachment: Supplemental Information

cc w/encl:
J. A. Price, Site Vice President - Millstone
C. L. Funderburk, Director, Nuclear Licensing and Operations Support
D. W. Dodson, Supervisor, Station Licensing
L. M. Cuoco, Senior Counsel
C. Brinkman, Manager, Washington Nuclear Operations
W. Meinert, Massachusetts Municipal Wholesale Electric Company
First Selectmen, Town of Waterford
V. Juliano, Waterford Library
J. Markowicz, Co-Chair, NEAC
E. Woollacott, Co-Chair, NEAC
E. Wilds, Director, State of Connecticut SLO Designee
J. Buckingham, Department of Public Utility Control
G. Proios, Suffolk County Planning Dept.
R. Shadis, New England Coalition Staff
G. Winslow, Citizens Regulatory Commission (CRC)
S. Comley, We The People
D. Katz, Citizens Awareness Network (CAN)
R. Bassilakis, CAN
J. M. Block, Attorney, CAN

Distribution w/encl: (VIA E-MAIL):
S. Collins, RA
J. Wiggins, DRA
J. Jolicoeur, OEDO
J. Clifford, NRR
V. Nerses, PM, NRR
S. Wall, Backup, NRR
S. Schneider, Senior Resident Inspector
E. Bartels, Resident OA
M. Miller, RI
K. Jenison, RI
T. Madden, OCA
Region I Docket Room (with concurrences)

SISP Review Complete: LTD

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.	05000336
License No.	DPR-65
Report No.	05000336/2004017
Licensee:	Dominion Nuclear Connecticut, Inc.
Facility:	Millstone Power Station, Unit 2
Location:	P. O. Box 128 Waterford, CT 06385
Dates:	November 1 - 5 and November 14 - 19, 2004
Inspectors:	F. Arner, Senior Reactor Engineer, DRS N. Della Greca, Senior Reactor Engineer, DRS H. Gray, Senior Reactor Inspector, DRS J. D'Antonio, Chief Examiner, DRS K. Kolaczyk, Senior Resident Inspector, Ginna, DRP (Team Leader) B. Wittick, Reactor Inspector, (Trainee) DRS
Approved by:	Lawrence T. Doerflein, Chief Safety Systems Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000336/2004017; 11/1/2004 - 11/19/2004; Millstone Unit 2; Engineering Team Inspection.

This inspection was conducted by five Region I inspectors, and one Inspector Trainee. No findings of significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, Reactor Oversight Process, Revision 3 dated July 2000.

A. <u>NRC-Identified and Self-Revealing Findings</u>

No findings of significance were identified.

B. <u>Licensee-Identified Violations</u>

None

REPORT DETAIILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R21 Safety System Design and Performance Capability (IP 71111.21)

a. Inspection Scope

The inspectors reviewed the design and performance capability of the safety injection and containment spray systems at Millstone Unit 2. The inspection also included a sample of several supporting/supported components that interface with the selected systems. The containment spray (CS) and high pressure safety injection (HPSI) systems were selected because of their risk significance in initiating events, mitigating systems, and barrier integrity. In addition, the risk insights and probabilistic risk assessment (PRA) information relative to the selected systems were used to focus inspection activities on components and procedures that would mitigate the effects of postulated events. Components selected for a detailed design basis review are discussed, as applicable, in the following paragraphs. The inspection procedure used for this effort was IP 71111, Attachment 21.

To perform this review, the inspection team reviewed the electrical and mechanical capabilities of the systems. The electrical review involved examining the logic and control wiring diagrams for the HPSI and CS pumps to verify that their operation and automatic initiation, when applicable, were in conformance with the system operation descriptions contained in the respective design basis documents and the Updated Final Safety Analysis Report (UFSAR). The review also verified that the control of valves critical to the correct operation of the systems was as specified in the same design bases documents. In addition, the team reviewed the refueling water storage tank (RWST) level setpoint calculations to ensure that an adequate water volume was available to the emergency core cooling system pumps, when needed, and that the swap-over of these pumps from the RWST to the containment sump did not impair their ability to cool down the reactor.

The team reviewed Alternating Current (AC) and Direct Current (DC) power distribution single line diagrams and the protective relay/breaker/fuse coordination studies to ensure that a fault or single failure of an electrical component or source did not impair the ability of the systems reviewed to perform their specified safety function. The team also confirmed that sufficient instrumentation had been provided to initiate automatic functions and to monitor the operation of the systems during and following a plant abnormal event.

The team reviewed the load flow analysis and emergency diesel generator (EDG) loading calculation to verify that the loads addressed had been correctly identified in the calculation and to assure that the EDGs were capable of meeting the load requirements under worst-case conditions. Through a review of a voltage drop calculation, the team verified that adequate voltage was provided to the safety-related loads during normal, abnormal, and emergency loading conditions. The team reviewed environmental qualification of motors and valves within the scope of the inspection, to verify that they would be capable of performing their required safety function in the environment stated in the specification for environmental service conditions under certain postulated accident scenarios. The team examined enclosures that protected motor control centers from adverse environmental conditions to ensure the enclosures were maintained, and were in the maintenance rule structure monitoring program. In addition, the team reviewed selected design modifications related to the HPSI and CS systems to confirm that such changes were reasonable, and did not impact the original design bases of the systems.

The team examined the Inservice Inspection (ISI) and Inservice Testing (IST) program activities that are conducted on these systems. To perform this review, the team reviewed surveillance procedures, program documents, and examined active and passive components in the plant during system walkdowns. IST program requirements for pumps and valves in the CS and HPSI systems, and how issues with those components were resolved, were reviewed for comparison to the American Society of Mechanical Engineers (ASME) Code requirements. Fourteen high-risk HPSI system valves were examined to ensure they were in the IST program. In the ISI program area, portions of the CS and HPSI systems were compared to the plant piping and ISI isometric drawings to confirm that welds and components were appropriately included in the ISI program for evaluation as required by the ASME Code.

Maintenance activities, including corrective maintenance (CM), preventive maintenance (PM), system restoration, and post-maintenance testing were evaluated. The plant history of issues and status of vibration on pumps and motors were reviewed. As part of steps to minimize HPSI pump vibration, the team observed the HPSI B pump-to-motor alignment verification. The HPSI and CS motor/pump vibration monitoring and bearing oil analysis practices and results were evaluated. The process used to defer planned maintenance on components was reviewed as well as planned component improvement programs.

The team reviewed the UFSAR and the technical specifications (TS) for both the CS and HPSI systems to verify that licensing basis requirements had been appropriately translated into design calculations and safety evaluations. To ensure vortexing had been addressed in calculations, data for the HPSI and CS pumps were reviewed to verify that adequate water levels existed in the RWST and containment sump. Specifically, pump flowrates were checked to ensure appropriate Froude numbers were calculated when determining minimum submergence requirements and the minimum level when pump suction is transferred to the containment sump from the RWST.

The team selected the RWST for a detailed component review, as it serves as the process medium for early injection for both the containment spray and HPSI pumps. The team reviewed drawings and volume calculations to ensure that the design inputs utilized in the net positive suction head calculations for the HPSI pumps were appropriate and conservative. The containment level calculation was reviewed to ensure that water inventory assumed when determining the head available during containment sump recirculation was in accordance with design drawings and conservative assumptions. The minimum flow recirculation valves (2-SI-659, 2-SI-660), were also selected for a detailed review. These air-operated valves were reviewed to ensure that their design would allow them to operate under the worst case differential pressures, and that the air supply was adequate to ensure the valves would be maintained closed during containment sump post-accident recirculation conditions with a loss of the normal instrument air supply.

The team reviewed the analysis of the peak temperatures in the engineered safeguards rooms during a postulated loss of coolant accident to verify the proper utilization of design inputs and assumptions, and to ensure they were reasonable and conservative. The team reviewed the engineering analyses associated with calculating the minimum closed cooling water flow requirements for the HPSI pumps. This minimum flowrate mode of operation was applicable during the containment sump recirculation phase which results in a higher heat load on the safety injection pump seals and bearing coolers. The analyses were reviewed to determine that the minimum required flowrates calculated for acceptable heat removal had been proven via testing or analysis.

The team reviewed completed test results to assess Dominion's actions to verify and maintain the safety function, reliability, and availability of selected components in the HPSI system. Test results were reviewed to verify that: 1) test acceptance criteria and test results appropriately considered differences between testing conditions and design requirements during accident conditions for both early injection and long term sump recirculation modes; 2) test results met established acceptance criteria; and, 3) test results considered instrument inaccuracies and differences. Components reviewed included the HPSI and CS pumps, and the common minimum flowrate valves which protect the pumps during low or minimum flow conditions. Additionally, the evaluations for backleakage to the RWST during post loss of coolant accident sump recirculation were reviewed to ensure that associated procedures were consistent with the assumptions utilized.

The team reviewed the IST program requirements for RWST suction check valves and the motor-operated valves to ensure applicable procedures incorporated acceptance limits which were consistent with the required safety function. The team reviewed selected design changes to verify that system and equipment functions were appropriately evaluated and maintained, and that they had not reduced system performance or introduced additional risk into the design. Design changes reviewed included, the installation of a piping vent line to preclude pressure locking effects on the containment sump isolation valves. This review was performed to ensure that no changes have taken place since the initial implementation of the modification which would currently render the assumptions of the modification invalid. Additionally, a modification to the design for the HPSI pump bearings was reviewed to ensure that design considerations such as cooling water had been considered in the analysis.

To ensure system operating, off normal, and emergency procedures could be performed as written, the team observed the procedures being implemented during simulator scenarios. The simulator was also evaluated as to whether or not it accurately modeled system response during these events. The events observed included the following: a large break Loss of Coolant Accident (LOCA) run until a Sump Recirculation Actuation Signal (SRAS) actuation; a small LOCA caused by a failed open Power Operated Relief Valve (PORV) with a loss of a DC bus; boron precipitation control lineups; and single train containment sump suction isolation, RWST allowed to empty.

The team also walked down several abnormal and emergency operating procedures (EOP) in the plant, and simulated the implementation of procedurally-directed compensatory actions. Specific procedures walked down in the field included: walkdowns of local operator actions required by EOP 2532, EOP 2541 Appendices 18 and 40, and Fire Procedure 2579AA. During the walkdowns, the team verified that the required equipment was available, components accessible, remote reach rods attached, and the required actions could be performed.

The team reviewed Millstone EOP 2532, supporting attachments, and the associated technical guides to verify these procedures had been maintained in accordance with the Combustion Engineering (CE) owners group emergency operating procedures guidelines and all deviations were appropriately justified. Calculation No. S-01228-S2 Millstone EOP Setpoint Documentation and referenced supporting calculations were reviewed for adequacy of HPSI and CS related EOP setpoint determinations.

The team performed a walkdown with the system engineer and a licensed operator of those portions of the HPSI and CS systems outside containment. System valve lineups, system prints, and the HPSI and CS portions of OP2353A, Filling And Venting Various Emergency Core Cooling System Piping and Components, were used for the conduct of these walkdowns.

To verify Dominion has developed, implemented, and maintained procedures that would be used in the event a fire developed in areas where the HPSI and CS systems are located, the team reviewed fire mitigation strategies. The team also examined areas that would be accessed during certain fire scenarios and verified emergency lights were located in those areas.

To ensure industry operating experience and vendor information were used to improve operation of the HPSI and CS systems, the team examined how several NRC generic communications that pertained to those systems had been evaluated. Further, the control and use of vendor recommendations and engineering review practices of vendor inputs, which included maintenance procedures changes were reviewed.

Several engineering inputs and analyses used to evaluate how containment sump performance would be affected by insulation, paint fragments, or other debris were reviewed and evaluated against the necessary flow requirements. Additionally, the inputs used to assess the propensity of boric acid to come out of solution under certain temperature requirements were reviewed to establish their technical adequacy.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA2 Identification and Resolution of Problems (IP 71152)

a. Inspection Scope

The team reviewed Dominion's effectiveness in identifying and resolving problems associated with the HPSI and CS systems. The team reviewed the effectiveness of selected corrective actions in resolving the condition identified and reviewed several condition reports where corrective actions were canceled to ensure there was no adverse impact on safety function. To conduct this review, the inspectors reviewed condition reports, Licensee Event Reports (LERs), and work orders to assess plant performance and corrective actions. Condition reports which had design aspects were specifically focused on with respect to the review of the mechanical design for both the containment spray and safety injection systems. For some corrective action documents, system walkdowns were completed to verify changes were made.

Regarding procedural quality, the team reviewed the process for affecting corrective actions where procedural revision was required. Several of the condition reports listed in Attachment 1 of this document were generated as a result of this inspection and were noted to require procedural changes as part of the corrective measures. The types of procedures reviewed included: system operating and surveillance test procedures, and emergency operating procedures. Discussions with the cognizant operations and engineering personnel revealed proper consideration of the identified problems.

b. Findings

No findings of significance were identified.

4OA5 Other

1. Plant Simulator Response

The team noted that the facility Emergency Operating Procedure (EOP) setpoint calculation for the SRAS setpoint was based on switching the suction path for the CS and HPSI pumps to the containment sump prior to emptying the RWST. In order to facilitate this action, Dominion engineering calculations indicated that due to the containment sump being at a lower level than the RWST, approximately 13.5 psig containment pressure was necessary to hold the RWST suction check valves shut to prevent continued RWST drawdown until the RWST suction isolation valves were shut by the operator. The team noted that this pressure would not be available at the time of SRAS for all small break LOCA scenarios.

To determine if the simulator modeled this effect, the team observed Dominion training personnel initiate a large break LOCA in the simulator to pump down the RWST, and vent the containment to reduce pressure. The team noted that after swapover to the containment sump, the simulator did properly draw down the RWST with pressure below approximately 14 psig. The simulator personnel then closed one containment sump suction valve to simulate a failure of the valve to open. As expected, the RWST continued to pump down to a level of 5%, then remained steady. However, the running HPSI and CS pumps in both trains continued to indicate design flow with no indications of cavitation even though there was no suction source for the one train. Dominion training personnel then ran a subsequent scenario in which they shut both a containment sump suction valve and the associated RWST suction valve; this yielded proper indications of cavitation on the affected train.

The team noted that CE EOPs do not address a failure of containment sump suction valves to open when required, and operators are not specifically trained on this failure. The team questioned whether it was appropriate to expect the simulator to model the consequences of such a failure. The issue regarding the Unit 2 simulator not replicating the expected plant response when the Refueling Water Storage Tank (RWST) had emptied is unresolved pending further NRC review. **(URI 05000336/2004017-01)**

2. (Closed) URI 05000336/2004007-06: Trisodium phosphate (TSP) activity and availability.

A minimum of 282 cubic feet of trisodium phosphate is required to be located in screened containers on the basement elevation of the containment structure for the purpose of raising the pH of dilute (approximately 2000 ppm) boric acid solution should the plant be placed in the post containment spray recirculation mode of operation. This unresolved item was opened by the inspector when he questioned the current condition of the TSP with respect to its solubility, the adequacy of the sampling process for the purpose of meeting surveillance requirements described in sections 4.5.5.1 and 4.5.5.2 of the MS Unit 2 Technical Specifications, and the engineering calculation that established the necessary amount of TSP.

To resolve this item, in addition to observing a video tape record of the TSP in one of the screened containers made during the 2003 MS Unit 2 outage and examining drawings of the TSP containers, the team reviewed engineering analysis, procedures, and specifications for the TSP. Items reviewed included the following: condition report CR-04-09202, which evaluated the solubility characteristics of the TSP; Technical Specification 3.5.5 for the TSP limiting conditions for operation; SP2868, TSP Solubility and Potency Verification Procedure, Rev. 0; Calculation 97-ENG-1784-M2, RCS Leak Rate Volume Calculations, Rev. 0; and, a MS Unit 2 Technical Evaluation of the TSP issues dated November 17, 2004 and its supporting documentation.

Regarding the solubility of the TSP, the initial concern was that the granular TSP would compress over time with a resulting decrease in cubic feet and the potential for reduced solubility with the corresponding reduction of intergranular voids. The team noted a test report dated February 28, 1973 (MP2-CE-2506) demonstrated adequate solubility after compression of TSP pellets up to 20ksi. The team also noted plant-specific conditions in the area of the TSP containers in MS Unit 2 have resulted in almost no volume reduction. Concerning the questions regarding the adequacy of the sampling process for meeting the surveillance requirements and the adequacy of the engineering calculation that established the necessary amount of TSP, the team concluded that the applicable Technical Specification was being met and MS Unit 2 had a sufficient engineering basis to show that the solubility of the TSP has not been significantly degraded. The design basis requirement for the quantity and pH adjustment capability for TSP continue to be satisfied. This URI is closed.

3. (Closed) URI 05000336/2002012-03: Service Water System Performance Capability

This unresolved item was opened to follow up Dominion's evaluation and resolution of several potential deficiencies related to the performance capability of the service water system (SWS). These deficiencies included: (1) lack of an up-to-date and accurate flow model; (2) discrepancies between the reactor building closed cooling water heat loads identified in various calculations; (3) potential losses in SWS inventory through non-safety-related branches and unmonitored valves; (4) uncertainty of flow measurement; and, (5) lack of acceptance criteria in system Procedure EN 21203 could potentially reduce the predicted flows below their acceptance values. The team reviewed the analyses and calculations prepared by Dominion to address the NRC concerns and concluded no operability issues or violations of NRC requirements were identified. No findings of significance were identified. This item URI is closed.

4OA6 Exit Meeting Summary

On November 19, 2004, the inspectors presented the overall inspection results to Mr. J. Alan Price and other members of his staff who acknowledged the findings. A subsequent telephone call was held on December 28, 2004 with Mr. S. Scace to discuss the unresolved item. The inspectors confirmed that proprietary information that was provided to the inspectors during the course of the inspection was returned to Dominion personnel or destroyed.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

T. Cleary, Licensing Engineer
G. Closius, Senior Specialist
M. Cote, Engineer
D. Dodson, Supervisor, Licensing
A. Elms, Assistant Engineering Director
G. Filippides, Senior Engineer
J. Hochdorfer, Operations Water Treatment Supervisor
A. Jordan, Director, Nuclear Engineering
J. Langon, Manager Site Engineering
N. Nowlan, Engineer
A. Price, Site Vice President - Millstone
S. Sarver, Director, Nuclear Station Operations & Maintenance
S. Scace, Director, Nuclear Station Safety and Licensing
B. Smith, Technical Analyst

NRC

S. R. Kennedy, Resident Inspector
K. A. Mangan, Resident Inspector
S. M. Schneider, Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000336/2004017-01	URI	The Plant Simulator Does Not Correctly Model Failure of Containment Sump Valve

Closed

05000336/2004007-06	URI	Trisodium Phosphate Surveillance
05000336/2002012-03	URI	Service Water System Performance

LIST OF DOCUMENTS REVIEWED

Design and Licensing Basis Documents

DBS-2309, Design Bases Summary for the Containment Spray System, Rev. 0

Calculations

1D00-2, MP2 Containment Spray Flow Following LOCA, Rev. 0
96020-1367-M2, Change 02. Insulation Debris and Head Loss, Rev. 1
A-MP-FE-0003, M2 Post LOCA Long Term Cooling Analyses, Rev. 0
03-ENG-04035M2, MP2 Service Water System Design Basis Summary Calculation, Rev. 0
07077-US(B)-002, Maximum Containment Water Level During LOCA, Rev. 0
07077-US(B)-003, MP2 Minimum Sump Water Level Following a Loss of Coolant Accident (LOCA), Rev. 00
07077-US(B)-004, Containment Spray Coverage After LOCA, Rev. 0
92-030-1259E2, Refueling Water Storage Tank Level - Setpoint Analysis L-3001, L-3002, L-3003, L-3004, Rev. 2
96-ENG-01529M2, Determination of Max Room Temps For ESF Rooms, Rev. 1
96020-1366-M2, Water Hold-Up In Containment, Rev. 0
97-061 02801-12, RWST Level Transmitter Calibration Calculation - LT-3001, LT-3002, LT3003, LT-3004, Rev. 00
97-ENG-01740-M2, Auxiliary Building - MCC B51, B61 Enclosures - Vital Cooling System, Rev. 00
97-ENG-01773-E2, Direct Current System Analysis, Methodology, & Scenario Development, Rev. 1
97-ENG-01774-E2, Battery 201A & Charger Associated Cable and Device Electrical Verification, Rev. 2, and Change No. 8
97-ENG-01775-E2, Battery 201B & Charger Associated Cable and Device Electrical Verification, Rev. 2, Change No. 6
97-ENG-01912E2, 4.16 kV Switchgear Relay Settings, Rev. 00
98-ENG-02558M2, Determination of Minimum Submergence Criteria for RWST Suction Piping, Rev. 00, and Change 01
98-ENG-02678E2, Cable Size Assessment for Class 1E Cables and Select Non-Class 1E (4160 VAC, 480 VAC, 120 V Vital AC, and 125 VDC), Rev. 00
98-ENG-02709M2, Containment Spray Pump Acceptance Criteria, Rev. 1
98-ENG-02712M2, HPSI Pump Acceptance Criteria
ABB-006-ST97-C-023, Combustion Engineering Nuclear Power Systems and Transients, Pages 63 - 75, Rev.1
PA 079-126-01027E2, MP2 EDG Loading Calculation, Rev. 02
PA XX-XXX-1006GE, HPSI Flow - Loop Accuracy F-311, F-321, F-331, F-341, Rev. 1, and Calculation Change Notices No. 01 and 02
PA XX-XXX-1042GE, Millstone Unit 2 Refueling Water Storage Tank Level - Loop Accuracy L-3001, L-3002, L-3003, L-3004, Rev. 03, and Calculation Change Notices No. 01 and 02

RWST-02648-D2, ECCS Back-Leakage to RWST During Post LOCA Sump Recirc, Rev. 0
S-01357-S2, Minimum Time to Sump Recirculation Actuation Signal on Millstone 2, Rev. 01
006-ST97-C-024 MP-2 Containment Related Main Steam Line Break Analysis for FSAR Update
97-122 Millstone Unit 2 ECCS System Analysis
A-MP-FE-0003 Millstone Point Unit 2 Post-LOCA Long Term Cooling Analysis

Technical Evaluations

M2-EV-97-0035, Technical Evaluation for Existing T-Drains on EEQ Limitorque Motor Operated Valves, Rev. 2
M2-EV-98-0098, Post LOCA Boron Precipitation Control, Rev. 0
M2-EV-99-0014, IST Pump Performance Testing, Rev. 4
M2-EV-99-0020, EOP 2532 Boron Precipitation Control, Rev. 0
M2-EV-00-0035, Technical Evaluation for 4.16kV Switchgear 24C and 24E Suitability at Elevated Temperature, Rev. 0
M2-EV-00-0050, Evaluate Bus 24E for Loss of Cooling, Rev. 0
M2-EV-00-0057, Technical Evaluation for Reduced Diameter Instrument Air Supply Tubing to ASCO Solenoid Valves, Rev. 0
M2-EV-00-0066, Technical Evaluation for Steam Intrusion into the Lower 4160V Switchgear Room, Rev. 0
M2-EV-01-0012, Technical Evaluation for Establishing RPS, ESFAS, and EOP Transmitter Calibration Temperature Limits, Rev. 4
M2-EV-02-0007, Technical Evaluation for Anticipated EDG Terminal Voltage Resulting from Maximum Excitation, Rev. 0
M2-EV-02-0029, HPSI Pump Availability During Surveillance Testing, Rev. 0
M2-EV-02-0030, Technical Evaluation for MP2 AA Emergency Diesel Generator Common Cause Failure Determination, Rev. 1
M2 EV-03-0001, MP2 Licensing Basis for Crediting the Pressure Integrity of
Non-Safety-Related Service Water Piping Concurrent with an LOCA, Rev. 0

Equipment Qualification Records

EQR 113-02, General Electric Containment Spray Pump Motors, Rev. 1
EQR 114-01, ASCO Solenoid Valve, Rev. 3
EQR 122-02, Limitorque Corp. Motor Operated Valve Actuator, Rev. 1
EQR 122-03, Limitorque Corp. Motor Operated Valve Actuator, Rev. 1
EQR 122-05, Limitorque Corp. Motor Operated Valve Actuator, Rev. 1
EQR 126-01, Siemens-Allis High Pressure Safety Injection Pump Motors, Rev. 1
EQR 253-01, EEI Vital MCC Coolers - Air Conditioner Unit, Rev. 1
QR-034008-1, Qualification Report GE HGA Relay, Rev. 0

System Piping and Instrumentation Drawings

P&ID 25203-26015 sheets 1 (Rev. 30); 2 (Rev. 31) and 3 (Rev. 24) for Safety Injection.
25203-26015, L.P. Safety Injection System, Sh. 1, Rev. 30
25203-26015, High Pressure Safety Injection Pumps, Sh. 2, Rev. 31

25203-26015, Safety Injection Tanks, Sh. 1, Rev. 24

Drawings and Isometrics

MS2 25203-20155 Sheet 1, Shutdown Cooling, Zone 2-05, ISI, Rev. 4
MS2 25203-20155 Sheet 3, Shutdown Cooling, Zone 2-07, ISI, Rev. 4
MS2 25203-20155 Sheet 5, Shutdown Cooling, Zone 2-09, ISI, Rev. 4
MS2 25203-20155 Sheet 7, Shutdown Cooling, Zone 2-11, ISI, Rev. 4
MS2 25203-20155 Sheet 26, To HPSI Pump 41A, Zone 2-26, ISI, Rev. 1
MS2 25203-20155 Sheet 27, To HPSI Pump 41C, Zone 2-27, ISI, Rev. 1
MS2 25203-20155 Sheet 28, To HPSI Pump 41B, Zone 2-28, ISI, Rev. 1
MS2 25203-20155 Sheet 33, Shutdown Cooling, Zone 2-33, ISI, Rev. 1
MS2 25203-20155 Sheet 34, Shutdown Cooling, Zone 2-34, ISI, Rev. 1
MS2 25203-20155 Sheet 35, Shutdown Cooling, Zone 2-35, ISI, Rev. 1
MS2 25203-20155 Sheet 36, Shutdown Cooling, Zone 2-36, ISI, Rev. 1
MS2 25203-20160, HPSI, Zone 2-15, ISI, Rev. 4
MS2 25203-20160 Sheet 30, HPSI, Small Bore Piping, Zone 2-30, ISI, Rev. 1
MS2 25203-20160 Sheet 31, HPSI, Small Bore Piping, Zone 2-31, ISI, Rev. 1
MS2 25203-20160 Sheet 32, HPSI discharge, Zone 2-32, ISI, Rev. 1
D-72-253, Refueling Water Storage Tank, Rev. 10
D-72-267, Details - Refueling Water Storage Tank, Rev. 8
Y08-7011-20, Engineered Safety Logic Relay Wiring Diagram, Sh.2, Rev. A.
Y08-7011-21, Engineered Safety Logic Relay Wiring Diagram, Sh.2, Rev. A.
25203-24028 Area Drains -Auxiliary Building Plan EL-14"-6" and EL 25"-6'
25203-24028 Area Drains -Auxiliary Building El-14"-6'
25203-24012 Piping and Instrument Diagram Condenser Air Removal Water Box Priming and Turbine Building Sumps, Rev. 59
25203-26024 Auxiliary Building Drains, Rev. 30
25203-28025, Instrument Location Intake Structure, Boiler Room. & Misc. Tanks, Rev. 13
25203-28115, Logic Diagram Safety Injection and Containment Spray System, Sh. 1, 11-12, 21-
25, 31-32, 41-48
25203-28150, Engineered safety Logic, Sh. 1, 3, & 4
25203-28408, Refueling Water Storage Tank Instrumentation, Sh. 84, Rev. 6
25203-28500, Loop Diagrams, Sh. 400, 403 & 404
25203-30001, Main Single Line Diagram, Rev. 20
25203-30004, Single Line Meter & Relay Diagram - 4.16 KV Buses 24A & 24B, Rev. 14
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LIST OF ACRONYMS

CE	Combustion Engineering
CS	Containment Spray
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EOP	Emergency Operating Procedure
HPSI	High Pressure Safety Injection
ISI	Inservice Inspection
IST	Inservice Testing
kV	Kilo-Volt
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
NRC	U.S. Nuclear Regulatory Commission
P&ID	Piping and Instrumentation Drawings
PRA	Probabilistic Risk Assessment
RCS	Reactor Coolant System
RWST	Refueling Water Storage Tank
SAP	Station Administrative Procedure
SDC	Shutdown Cooling
SRAS	Sump Recirculation Actuation Signal
SWS	Service Water System
TS	Technical Specification
TSP	Trisodium Phosphate
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item