November 16, 2007

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

SUBJECT: MILLSTONE POWER STATION, UNIT 3 - TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000423/2007007

Dear Mr. Christian:

On October 5, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed a triennial fire protection team inspection at your Millstone Power Station, Unit 3. The enclosed report documents the inspection results which were discussed on October 5, 2007, with Mr. J. Alan Price, Site Vice President, and other members of your staff.

The 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 inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents three NRC-identified findings of very low safety significance (Green). All of these findings were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs), consistent with Section VI.A.1 of the NRC's Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Millstone Power Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) 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/

John F. Rogge, Chief
Engineering Branch 3
Division of Reactor Safety

Docket No. 50-423
License No. NPF-49

Enclosure: NRC Inspection Report 05000423/2007007

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.	50-423
License No.	NPF-49
Report No.	05000423/2007007
Licensee:	Dominion Nuclear Connecticut, Inc.
Facility:	Millstone Power Station, Unit 3
Location:	P.O. Box 128 Waterford, CT 06385
Dates:	September 17 - October 5, 2007
Inspectors:	D. Orr, Senior Reactor Inspector, Division of Reactor Safety M. Patel, Reactor Inspector, Division of Reactor Safety J. Tifft, Reactor Inspector, Division of Reactor Safety
Approved by:	John F. Rogge, Chief Engineering Branch 3 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000423/2007007; 09/17 - 10/05/ 2007; Millstone Power Station, Unit 3; Dominion Nuclear Connecticut, Inc.; Triennial Fire Protection Team Inspection; Fire Protection.

The report covered a two-week triennial fire protection team inspection by three Region I specialist inspectors. Three Green Non-Cited Violations (NCVs) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings

Cornerstone: Initiating Events

- Green. The team identified a Green NCV of the Millstone Unit 3 Technical Specification 6.8.1.g, in that the procedure for shutting down the plant in response to an auxiliary building fire scenario did not provide precautions to operators to prevent thermal shock to two reactor coolant pump (RCP) seal packages. This procedure deficiency was contrary to Westinghouse Technical Bulletin, TB-04-22, "Reactor Coolant Pump Seal Performance - Appendix R Compliance and Loss of All Seal Cooling," Rev. 1, which specifically recommended to all applicable licensees that if any plant specific procedure or guidance was not consistent with the Westinghouse recommendations, then the licensee should modify either the procedure or guidance to be consistent, or document the technical basis for any deviation. Dominion entered this issue into the corrective action program as CR-07-09685 and initiated corrective actions to expeditiously revise the procedure.

  This finding was more than minor because it affected the procedure quality attribute of the initiating events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, not including precautions in EOP 3509.2, "Auxiliary Building Fire," Rev. 003-01, prior to RCP seal restoration does not limit the likelihood of an RCP seal loss of a coolant accident. The team assessed this finding in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process (SDP)." This finding affected post-fire safe shutdown procedures and systems. This finding screened to very low safety significance (Green) in phase one of the SDP because it was assigned a low degradation rating. A low degradation rating was assigned because the procedural deficiency was compensated by operator experience and familiarity. The team noted that several other operating procedures provided adequate precautions to prevent thermal shock to RCP seals. Operators were further instructed on RCP thermal shock considerations in the requalification training program. The team determined that this finding has a cross-cutting aspect in the area of human

performance because Dominion did not provide procedure precautions to prevent thermal shock to RCP seals for an auxiliary building fire scenario. [H.29(c)] (Section 1R05.01.2)

Cornerstone: Mitigating Systems

- Green. The team identified a Green NCV of Millstone Unit 3 operating license condition 2.H, "Fire Protection," in that Dominion did not ensure for a control room fire that the control circuits for the reactor head vent valves would not be damaged by fire when control was transferred to the auxiliary shutdown panel (ASP). As a result, the valves were subject to spurious failure even after ASP control was established. Immediate corrective actions included: fire protection compensatory measures were initiated to minimize the potential for a fire in the areas of concern; an extent of condition review was performed for other potential circuit issues for credited equipment operated from the ASP; and the affected control circuit seal-in relays were relocated outside of the control room. Dominion entered this issue into the corrective action program as CR-07-09905.

  This team determined that this finding was more than minor because it was associated with the external factors attribute (fire) of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, a letdown path necessary to achieve cold shutdown boron conditions would be subject to spurious isolation during a control room fire. The team assessed this finding in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process." This finding affected post-fire safe shutdown procedures and systems. This finding screened to very low safety significance (Green) in phase 1 of the SDP because it only affected the ability to reach and maintain cold shutdown conditions. The reactor vessel head vent valves are also credited for hot standby conditions to maintain inventory control, but uncomplicated operator actions to reduce charging flow will maintain adequate inventory control during hot standby conditions. (Section 1R05.07)

- Green. The team identified a Green NCV of the Millstone Unit 3 operating license condition 2.H, "Fire Protection," in that Dominion failed to correct an adverse trend in emergency lighting unit (ELU) performance. Dominion entered this issue into the corrective action program as CR-07-09034 and CR-07-09319 and initiated corrective actions to: revise the ELU maintenance rule action plan; reevaluate and implement an accelerated battery replacement interval; consider additional actions for ELU batteries located in high temperature areas; and benchmark ELU preventive maintenance with other utilities.

  This performance deficiency is more than minor because it affected the external factors attribute (fire) of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the reliability and availability of the ELUs were affected. ELUs illuminate access and egress paths for safe shutdown operations as well as areas where safe shutdown manual actions are

performed. The team assessed this finding in accordance with NRC IMC 0609, Appendix F, “Fire Protection Significance Determination Process.” This finding affected post-fire safe shutdown. This finding screened to very low safety significance (Green) in phase 1 of the SDP because it was assigned a low degradation rating. A low degradation rating was assigned because the issue did not have a significant impact on safe shutdown operations: operators as a good operating practice carry flashlights and the ELU failures were generally random in location, i.e., no plant areas had widespread ELU outages at any one time. The team determined that this finding has a cross-cutting aspect in the area of problem identification and resolution because Dominion did not correct a long standing ELU high failure rate. [P.1(d)] (Section 1R05.09)

B. Licensee-Identified Violations

None

REPORT DETAILS

Background

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure (IP) 71111.05T, "Fire Protection." The objective of the inspection was to assess whether Dominion Nuclear Connecticut, Inc. (Dominion), has implemented an adequate fire protection program and that post-fire safe shutdown capabilities have been established and are being properly maintained at the Millstone Power Station, Unit 3. The following fire areas (FAs) were selected for detailed review based on risk insights from the Unit 3 Individual Plant Examination of External Events (IPEEE):

- Fire Area CB-9
- Fire Area AB-1
- Fire Area AB-6
- Fire Area EG-4

The inspection team evaluated the Dominion's fire protection program against applicable requirements which included plant technical specifications, operating license condition 2.H, NRC safety evaluation reports, 10 CFR 50.48, and Branch Technical Position (BTP) Chemical Engineering Branch (CMEB) 9.5-1. The team also reviewed related documents that included the Updated Final Safety Analysis Report (UFSAR), the fire hazards analysis, and the safe shutdown analysis.

Specific documents reviewed by the team are listed in the attachment.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R05 Fire Protection

.01 Post-Fire Safe Shutdown From Outside Main Control Room (Alternative Shutdown) and Normal Shutdown

a. Inspection Scope

Methodology

The team reviewed the safe shutdown analysis, operating procedures, piping and instrumentation drawings, electrical drawings, the UFSAR and other supporting documents to verify that hot and cold shutdown could be achieved and maintained from outside the control room for fires that rely on shutdown from outside the control room. This review included verification that shutdown from outside the control room could be performed both with and without the availability of offsite power. Plant walkdowns were also performed to verify that the plant configuration was consistent with that described in the safe shutdown and fire hazards analyses. These inspection activities focused on ensuring the adequacy of systems selected for reactivity control, reactor coolant

makeup, reactor decay heat removal, process monitoring instrumentation and support systems functions. The team verified that the systems and components credited for use during this shutdown method would remain free from fire damage. The team verified that the transfer of control from the control room to the alternative shutdown locations would not be affected by fire-induced circuit faults (e.g., by the provision of separate fuses and power supplies for alternative shutdown control circuits).

Similarly, for fire areas that utilize shutdown from the control room, the team verified that the shutdown methodology properly identified the components and systems necessary to achieve and maintain safe shutdown conditions.

Operational Implementation

The team verified that the training program for licensed and non-licensed operators included alternative shutdown capability. The team also verified that personnel required for safe shutdown using the normal or alternative shutdown systems and procedures were trained and available onsite at all times, exclusive of those assigned as fire brigade members.

The team reviewed the adequacy of procedures utilized for post-fire shutdown and performed an independent walk through of procedure steps to ensure the implementation and human factors adequacy of the procedures. The team also verified that the operators could be reasonably expected to perform specific actions within the time required to maintain plant parameters within specified limits. Time critical actions which were verified included restoration of alternating current (AC) electrical power, establishing the auxiliary shutdown panel, isolating the reactor coolant pumps seal return isolation valve, and establishing charging.

EOP 3509.1, Control Room, Cable Spreading Area, or Instrument Rack Room Fire, Revision (Rev.) 011-02 was specifically reviewed for alternative shutdown and shutdown from outside the control room.

The team reviewed manual actions to ensure that they had been properly reviewed and approved and that the actions could be implemented in accordance with plant procedures in the time necessary to support the safe shutdown method for each fire area. The team also reviewed periodic testing records of the alternative shutdown transfer capability and instrumentation and control functions to ensure the tests demonstrated the functionality of the alternative shutdown capability.

b. Findings

.1 Unresolved Item. Pending further inspector review of control room fire scenario developments, the team identified a potential vulnerability in Dominion's safe shutdown method and operating procedures during a control room fire scenario that would require evacuation. Specifically, the reactor coolant makeup and reactor coolant pump seal injection functions of the charging pumps were potentially affected.

The team reviewed 25212-BTP-9.5-1, "MP3 Branch Technical Position 9.5-1 Compliance Report," Rev. 003, and noted that the charging pump volume control tank (VCT) outlet level control valves were subject to spurious operation during a control room fire. The team questioned engineers regarding the validity of this conclusion and if Dominion considered the impact of the VCT outlet isolating the suction path to an operating charging pump during the time necessary to evacuate the control room and to establish control at the auxiliary shutdown panel. The engineers confirmed that a VCT outlet level control valve spurious closure was possible for a control room fire and that an operating charging pump would fail in a relatively short time without a suction path. Dominion also provided the team condition reports, CR-04-08399 and CR-04-08450, that were initiated on September 16, 2004, for the same potential issue the inspectors raised: catastrophic failure of an operating charging pump due to loss of a suction path from a spurious closure of the VCT outlet level control valves.

Only two charging pumps, A and B, were analyzed for safe shutdown, and only the A charging pump could be operated remotely for a fire requiring control room evacuation. The third charging pump, C, was available but was normally secured without a 4kV breaker installed. The team noted that the C charging pump was also not analyzed for safe shutdown. Dominion's safe shutdown analysis for a Unit 3 control room fire only credited the A charging pump for boration and reactor coolant pump (RCP) seal injection functions. The team further identified that Kirk interlock keys were not available outside of the main control to rack in a normally disconnected 4kV breaker to the C charging pump.

Regarding the potential issue, Dominion completed several immediate corrective actions including: equipment configuration changes (i.e., 4kV breaker alignments and kirk interlock key locations were implemented) to ensure the C charging pump would remain available after such a scenario, operators were notified of the condition through a night order entry, fire protection compensatory measures were initiated to minimize the potential for a fire in the areas of concern, and an extent of condition review was performed to identify additional plant areas where this potential vulnerability may exist. Dominion entered the issue into the corrective action program as CR-07-10124, CR-07-10158, CR-07-10363, and CR-07-10614.

The team determined that the potential vulnerabilities to the reactor coolant makeup and RCP seal injection functions during a control room fire that required evacuation will be treated as an unresolved item (URI), pending further inspector review of credible fire scenarios and their potential impact on the VCT outlet valve control cabling. An unresolved item is an issue requiring further information to determine if it is acceptable,

if it is a finding, or if it constitutes a violation of NRC requirements. In this case, additional NRC inspection will be required to assess credible control room fire scenarios that lead to a loss of reactor coolant makeup and conditions that may require control room evacuation. **URI 05000423/2007007-01, Control Room Fire Evacuation Procedure**

.2 Introduction. The team identified a Green NCV of the Millstone Unit 3 Technical Specification, 6.8.1.g, in that the procedure for shutting down the plant in response to an auxiliary building fire scenario did not provide precautions to operators to prevent thermal shock to two reactor coolant pump seal packages.

Description. The team reviewed 25212-BTP-9.5-1, "MP3 Branch Technical Position 9.5-1 Compliance Report," Rev. 003, and noted that for particular fire locations in the auxiliary building, no charging pumps and only one component cooling water pump would remain available. Such a configuration left two reactor coolant pumps without any seal cooling, thermal barrier heat exchanger cooling or seal injection cooling, because Millstone Unit 3 normally operated with component cooling water headers not cross-connected.

Millstone Unit 3 reactor coolant pumps utilize a Westinghouse RCP shaft sealing system with Westinghouse high temperature O-rings. Westinghouse recommended in Technical Bulletin, TB-04-22, "Reactor Coolant Pump Seal Performance - Appendix R Compliance and Loss of All Seal Cooling," Rev. 1, dated August 9, 2005, that plants using Westinghouse shaft sealing systems with Westinghouse high temperature O-rings only restore seal cooling (seal injection or thermal barrier heat exchanger cooling) if the number 1 seal has not exceeded the shutdown limit specified in the plant specific RCP Instruction Book. Dominion did not calculate a time to achieve the high temperature shutdown limit, but similar plants with Westinghouse reactor coolant pumps have used 13 minutes after a loss of all seal cooling to estimate the time to reach the number 1 seal temperature limit.

Safe shutdown procedure, EOP 3509.2, "Auxiliary Building Fire," Rev. 003-01, established manual actions to restore thermal barrier heat exchanger cooling to the A and D reactor coolant pumps by manually cross-connecting the component cooling water headers. The inspectors considered that the manual actions may not occur for several minutes, probably greater than 13 minutes, and the potential to thermally shock the A and D reactor coolant pump seals existed. EOP 3509.2, "Auxiliary Building Fire," Rev. 003-01, did not provide any precautions to prevent RCP seal thermal shock at the procedure step that reestablished thermal barrier heat exchanger cooling to the A and D RCPs.

Westinghouse Technical Bulletin, TB-04-22, "Reactor Coolant Pump Seal Performance - Appendix R Compliance and Loss of All Seal Cooling," Rev. 1, specifically recommended to all applicable licensees that if any plant specific procedure or guidance is not consistent with the Westinghouse recommendations, then the licensee should modify either the procedure or guidance to be consistent, or document the technical

basis for any deviation. The team concluded that Dominion's failure to incorporate Westinghouse's industry recommendations into the safe shutdown procedure EOP 3509.2, "Auxiliary Building Fire," Rev. 003-01, was a performance deficiency.

Dominion entered this issue into the corrective action program as CR-07-09685 and initiated corrective actions to expeditiously revise the procedure.

Analysis. This performance deficiency is more than minor because it affected the procedure quality attribute of the initiating events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, not including precautions in EOP 3509.2, "Auxiliary Building Fire," Rev. 003-01, prior to RCP seal restoration does not limit the likelihood of an RCP seal loss of coolant accident.

The team assessed this finding in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process." This finding affected post-fire safe shutdown procedures and systems. This finding screened to very low safety significance (Green) in phase 1 of the SDP because it was assigned a low degradation rating. A low degradation rating was assigned because the procedural deficiency was compensated by operator experience and familiarity. The team noted that several other operating procedures provided adequate precautions to prevent thermal shock to RCP seals. Operators were further instructed on RCP thermal shock considerations in the requalification training program.

The team determined that this finding has a cross-cutting aspect in the area of human performance because Dominion did not provide procedure precautions to prevent thermal shock to RCP seals for an auxiliary building fire scenario. [H.2(c)]

Enforcement. Millstone Unit 3 Technical Specification 6.8.1.g states in part that, written procedures shall be established, implemented, and maintained covering fire protection program implementation. Contrary to this requirement, Dominion did not incorporate industry guidance from Westinghouse Electric Company provided in Technical Bulletin, TB-04-22, "Reactor Coolant Pump Seal Performance - Appendix R Compliance and Loss of All Seal Cooling," Rev. 1, dated August 9, 2005, that plants using Westinghouse shaft sealing systems with Westinghouse high temperature O-rings only restore seal cooling (seal injection or thermal barrier heat exchanger cooling) if the number 1 seal has not exceeded the shutdown limit specified in the plant specific RCP Instruction Book. EOP 3509.2, "Auxiliary Building Fire," Rev. 003-01, effective May 1, 2007, was not maintained with this latest industry guidance to preclude thermal shock to the A and D RCP seals when component cooling water would be procedurally directed to be restored. Because this finding was of very low safety significance (Green) and has been entered into Dominion's corrective action program (CR-07-09685), this violation is being treated as a NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **NCV 050004232007007-02, Auxiliary Building Fire Safe Shutdown Procedure Lacked RCP Seal Thermal Shock Precautions**

.02 Protection of Safe Shutdown Capabilities

a. Inspection Scope

The team reviewed the fire hazards analysis, safe shutdown analyses and supporting drawings and documentation to verify that safe shutdown capabilities were properly protected. The team ensured that separation requirements of the UFSAR were maintained for the credited safe shutdown equipment and their supporting power, control and instrumentation cables. This review included an assessment of the adequacy of the selected systems for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring, and associated support system functions.

The team reviewed Dominion's procedures and programs for the control of ignition sources and transient combustibles to assess their effectiveness in preventing fires and in controlling combustible loading within limits established in the Fire Hazard Analysis. A sample of hot work and transient combustible control permits were also reviewed. The team performed plant walkdowns to verify that protective features were being properly maintained and administrative controls were being implemented.

b. Findings

No findings of significance were identified.

.03 Passive Fire Protection

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe the material condition and design adequacy of fire area boundaries (including walls, fire doors and dampers), and electrical raceway fire barriers to ensure they were appropriate for the fire hazards within the area.

The team reviewed installation/repair and qualification records for a sample of penetration seals to ensure the fill material was of the appropriate fire rating and that the installation met the engineering design.

b. Findings

No findings of significance were identified.

.04 Active Fire Protection

a. Inspection Scope

The team reviewed the design, maintenance, testing and operation of the fire detection and suppression systems in the selected plant fire areas. This included verification that the manual and automatic detection and suppression systems were installed, tested,

and maintained in accordance with the National Fire Protection Association (NFPA) code of record, or as NRC approved deviations, and that each suppression system would control or extinguish fires associated with the hazards in the selected areas. A review of the design capability of suppression agent delivery systems was verified to meet the code requirements for the fire hazards involved. The team also performed a walkdown of accessible portions of the detection and suppressions systems in the selected areas as well as a walkdown of major system support equipment in other areas (e.g., fire protection pumps and carbon dioxide and Halon tanks and supply systems) and assessed the material condition of the systems and components.

The team reviewed electric and diesel fire pump flow and pressure tests to ensure that the pumps were meeting their design requirements. The team also reviewed the fire main loop flow tests to ensure that the flow distribution circuits were able to meet the design requirements.

The team assessed the fire brigade capabilities by reviewing training, qualification, and drill critique records. The team reviewed pre-fire plans and smoke removal plans for the selected fire 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 post-fire safe shutdown. In addition, the team inspected the fire brigade's protective ensembles, self-contained breathing apparatus, and various fire brigade equipment (including smoke removal equipment) to verify fire fighting readiness.

b. Findings

No findings of significance were identified.

.05 Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The team reviewed documents and walked down the selected fire areas to verify that redundant trains of systems required for hot shutdown are not subject to damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems. Specifically, the team verified that:

- A fire in one of the selected fire areas would not directly, through production of smoke, heat or hot gases, cause activation of suppression systems that could potentially damage all redundant safe shutdown trains;
- A fire in one of the selected fire areas (or the inadvertent actuation or rupture of a fire suppression system) would not directly cause damage to all redundant safe shutdown trains (e.g., sprinkler caused flooding of other than the locally affected train); and
- Adequate drainage was provided in areas protected by water suppression systems.

b. Findings

No findings of significance were identified.

.06 Alternative Shutdown Capability

Alternative shutdown capability for the areas selected for inspection utilizes shutdown from outside the control room and is discussed in Section 1R05.01 of this report.

.07 Circuit Analyses

a. Inspection Scope

The team verified that Dominion performed a post-fire safe shutdown analysis for the selected fire areas and that the analysis appropriately identified the structures, systems, and components important to achieving and maintaining post-fire safe shutdown. Additionally, the team verified that licensee's analysis ensured that necessary electrical circuits were properly protected and that circuits that could adversely impact safe shutdown due to hot shorts, shorts to ground, or other failures were identified, evaluated, and dispositioned to ensure spurious actuations would not prevent safe shutdown.

The team's review considered fire and cable attributes, potential undesirable consequences and common power supply/bus concerns. Specific items included the credibility of the fire threat, cable insulation attributes, cable failure modes, spurious actuations, and actuations that could result in a loss of coolant event.

The team also reviewed cable routing data sheets and wiring diagrams for a sample of components to verify that all necessary cables had been included in the safe shutdown analysis and that the routing ensures safe shutdown equipment cables remained free from fire damage.

Cable failure modes were reviewed for the following components:

- Volume control tank outlet isolation valve, 3CHS*LCV112B;
- Refueling water storage tank to charging pumps suction valve, 3CHS*LCV112D;
- Reactor vessel head vent isolation valves, 3RCS*SV8905A and B; and,
- Turbine driven auxiliary feedwater pump motor speed changer, 3FWA*M7.

The team reviewed circuit breaker coordination studies to ensure equipment needed to conduct post-fire safe shutdown activities would not be impacted due to a lack of coordination. The team confirmed that the coordination studies addressed multiple faults due to fire. Additionally, the team reviewed a sample of circuit breaker maintenance records to verify that circuit breakers for components required for post-fire safe shutdown were properly maintained in accordance with procedural requirements.

b. Findings

Introduction. The team identified a Green NCV of Millstone Unit 3 operating license condition 2.H, "Fire Protection," in that Dominion did not ensure for a control room fire that the control circuits for the reactor head vent valves would not be damaged by fire when control was transferred to the auxiliary shutdown panel (ASP). As a result the valves were subject to spurious failure even after ASP control was established.

Description. The team requested for review several electrical schematics and wiring diagrams of selected control circuits that were credited to be operable from the ASP and isolated from any effects of a control room fire. The reactor head vent valves, 3RCS*SV8095A and 3RCS*SV8096A, were amongst the components selected for review. In the interim, Dominion reviewed the schematics and diagrams in preparation for potential questions from the inspection team.

During the course of the Dominion review, engineers identified that control circuits for the reactor vessel head vent isolation valves were not fully isolated from the fire area when control was transferred to the ASP. Two seal-in relays, 3/37R (33UX-3RCS*SV8095A) and 3/38R (33UX-3RCS*SV8096A), were located in main control board 3 in the control room, and were associated with reactor head vent valves 3RCS*SV8095A and 3RCS*SV8096A. For cold shutdown, each valve was required to be open to establish a letdown path so that sufficient boric acid from the boric acid storage tanks would be added to the reactor coolant system (RCS) to assure cold shutdown reactivity conditions. With seal-in relays located in the control room, reactor head vent valves 3RCS*SV8095A and 3RCS*SV8096A may spuriously close during a control room fire and cold shutdown reactivity conditions may not be assured. Dominion reported the condition as a non-emergency eight-hour report to the NRC Operations Center on September 28, 2007.

The team determined that Dominion's failure to ensure that the reactor head vent valves were isolated from the effects of a control room fire, such that cold shutdown conditions can be achieved within 72 hours and maintained thereafter, was a performance deficiency. Immediate corrective actions included: fire protection compensatory measures were initiated to minimize the potential for a fire in the areas of concern; an extent of condition review was performed for other potential circuit issues for credited equipment operated from the ASP; and the seal-in relays were relocated to outside of the control room. Dominion entered this issue into the corrective action program as CR-07-09905. No additional circuit issues were identified during Dominion's extent of condition review.

The inspectors determined that this was an original design issue. However, based on IMC 0305, the issue will not be treated as an old design issue since it was identified in response to NRC inspection activities. This finding is an NRC-identified finding.

Analysis. This team determined that this finding was more than minor because it was associated with the external factors attribute (fire) of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to

initiating events to prevent undesirable consequences (i.e., core damage). Specifically, a letdown path necessary to achieve cold shutdown boron conditions would be subject to spurious isolation during a control room fire.

The team assessed this finding in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process." This finding affected post-fire safe shutdown procedures and systems. This finding screened to very low safety significance (Green) in phase 1 of the SDP because it only affected the ability to reach and maintain cold shutdown conditions. The reactor vessel head vent valves are also credited for hot standby conditions to maintain inventory control, but the uncomplicated operator actions to reduce charging flow will maintain adequate inventory control during hot standby conditions and were determined to represent a low degradation rating.

Enforcement. License Condition 2.H for Millstone Unit 3 states in part that, Dominion Nuclear Connecticut shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report. The Fire Protection Evaluation Report of the UFSAR requires Dominion to comply with BTP CMEB 9.5-1, position C.5.c(5) for alternative or dedicated shutdown capability. The BTP CMEB 9.5-1, position C.5.c(5) requires in part that "Equipment and systems comprising the means to achieve and maintain cold shutdown conditions should not be damaged by fire." Contrary to the above, 3RCS*SV8095A and 3RCS*SV8096A are necessary to achieve and maintain cold shutdown conditions, and could be damaged by a control room fire until the seal-in relays were relocated outside of the control room on October 3, 2007. Because this finding is of very low safety significance (Green) and has been entered into Dominion's corrective action program (CR-07-09905), this violation is being treated as an NCV, consistent with section VI.A.1 of the NRC Enforcement Policy. **NCV 05000423/2007007-03, Auxiliary Shutdown Panel Reactor Head Vent Valves Not Isolated from Effects of a Control Room Fire**

.08 Communications

a. Inspection Scope

The team reviewed safe shutdown procedures, the safe shutdown analysis, and associated documents to verify an adequate method of communications would be available to plant operators following a fire. During this review, the team considered the effects of ambient noise levels, clarity of reception, reliability and coverage patterns. The team also inspected the designated emergency storage lockers to verify the availability of portable radios for the fire brigade and for plant operators. The team also verified that communications equipment such as repeaters and transmitters would not be affected by a fire.

b. Findings

No findings of significance were identified.

.09 Emergency Lighting

a. Inspection Scope

The team observed the placement and coverage area of eight-hour emergency lights throughout the selected fire areas and evaluated their adequacy for illuminating access and egress pathways and any equipment requiring local operation and/or instrumentation monitoring for post-fire safe shutdown. The team also verified that the battery power supplies were rated for at least an eight-hour capacity. Preventive maintenance procedures, the vendor manual, completed surveillance tests and battery replacement practices were reviewed to verify that the emergency lighting was being maintained in a manner that would ensure reliable operation.

b. Findings

Introduction. The team identified a Green NCV of the Millstone Unit 3 operating license condition 2.H, Fire Protection, in that Dominion failed to correct an adverse trend in emergency lighting unit performance.

Description. In 1997, Dominion issued CR 97-1984 to document that emergency lighting units (ELUs) were failing eight hour endurance tests. Corrective actions included monitoring and goal setting through the maintenance rule program. Dominion replaced one-third of the 176 ELU battery units in 1999 and another one-third in 2000, but the ELUs continued to fail at a high rate. ELU failures increased from 23 failures in a 24-month period (from 1998-2000) to 64 failures in a 24-month period (from 2000-2002). ELU failure rates were again documented in 2005 (CR 05-13649), where it was noted that 45 failures occurred in the previous 18-month period. In 2007, CR 07-09034 noted 40 ELU failures during an 18-month period of March 2006 to September 2007. Specific ELU failure mechanisms included battery failures, bulb failures, and circuit card failures, with battery failures being the primary cause. While this adverse trend was recognized since 1997, similar failures and failure rates continued to occur and Dominion has not implemented effective corrective actions for the ELU failure rates.

The team concluded that Dominion's failure to effectively correct the high rate of ELU failures since 1997 was a performance deficiency. Dominion entered this issue into the corrective action program as CR-07-09034 and CR-07-09319 and initiated corrective actions to: revise the ELU maintenance rule action plan; reevaluate and implement an accelerated battery replacement interval; consider additional actions for ELU batteries located in high temperature areas; and benchmark ELU preventive maintenance with other utilities.

Analysis. This performance deficiency is more than minor because it affected the external factors attribute (fire) of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the reliability and

availability of the ELUs was affected. ELUs illuminate access and egress paths for safe shutdown operations as well as areas where safe shutdown manual actions are performed.

The team assessed this finding in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process." This finding affected post-fire safe shutdown. This finding screened to very low safety significance (Green) in phase 1 of the SDP because it was assigned a low degradation rating. A low degradation rating was assigned because the issue did not have a significant impact on safe shutdown operations: operators as a good operating practice carry flashlights and the ELU failures were generally random in location, i.e., no plant areas had widespread ELU outages at any one time. The team determined that this finding has a cross-cutting aspect in the area of problem identification and resolution because Dominion did not correct a long standing ELU high failure rate. [P.1(d)]

Enforcement. License Condition 2.H for Millstone Unit 3 states in part that, Dominion Nuclear Connecticut shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report. The Fire Protection Evaluation Report of the UFSAR requires Dominion to comply with BTP CMEB 9.5-1, position C.4.h., Corrective Action. The BTP CMEB 9.5-1, position C.4.h., requires in part that measures should be established to ensure that conditions adverse to fire protection, such as deficiencies, are promptly identified, reported, and corrected. Contrary to this requirement, Dominion did not correct a high ELU failure rate that was first recognized in 1997. Because this finding was of very low safety significance (Green) and has been entered into Dominion's corrective action program (CR-07-09034 and CR-07-09319), this violation is being treated as a NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **NCV 050004232007007-04, Emergency Light Unit High Failure Rate**

.10 Cold Shutdown Repairs

a. Inspection Scope

The team verified that Dominion had dedicated repair procedures, equipment, and materials to accomplish repairs of components required for cold shutdown which might be damaged by fire to ensure cold shutdown could be achieved within the time frames specified in the design and licensing bases. The inspectors verified that the repair equipment, components, tools and materials were available and accessible on site.

b. Findings

No findings of significance were identified.

.11 Compensatory Measures

a. Inspection Scope

The team verified that compensatory measures were in place for out-of-service, degraded or inoperable fire protection and post-fire safe shutdown equipment, systems, or features (e.g., detection and suppression systems and equipment, passive fire barriers, pumps, valves or electrical devices providing safe shutdown functions or capabilities). The team also verified that the short term compensatory measures compensated for the degraded function or feature until appropriate corrective action could be taken and that Dominion was effective in returning the equipment to service in a reasonable period of time.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

.01 Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team verified that the licensee was identifying fire protection and post-fire safe shutdown issues at an appropriate threshold and entering them into the corrective action program. The team also reviewed a sample of selected issues to verify that the licensee had taken or planned appropriate corrective actions.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On October 5, 2007, the team presented the inspection results to Mr. J. Alan Price, Site Vice President, and other members of the site staff. On November 16, 2007, the team leader and John Rogge, Chief, Engineering Branch 3, updated the inspection results to Mr. Robert Griffin, Director, Nuclear Safety and Licensing, and other members of the site staff. No proprietary information was included in this inspection report.

ATTACHMENT

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Dominion Personnel

A. Price	Site Vice President
S. Jordan	Plant Manager (Nuclear)
R. Griffin	Director - Nuclear Safety and Licensing
C. Dempsey	Assistant Plant Manager
M. O'Connor	Manager - Nuclear Site Engineering
A. Elms	Manager - Nuclear Engineering
S. Wainio	Supervisor - Nuclear Engineering
T. Hendy	Nuclear Engineer III
G. Closius	Licensing Engineer
J. Mangeno	Nuclear Engineer III
P. Raimondi	Nuclear Engineer III
D. Scott	Nuclear Engineer III
B. Wilkens	Site Fire Marshal
J. Spaargaren	PRA Analyst
E. Broder	Operations Supervisor

NRC Personnel

J. Rogge	Chief, Engineering Branch 3, Division of Reactor Safety
W. Schmidt	Senior Reactor Analyst, Division of Reactor Safety
S. Shaffer	Senior Resident Inspector
R. Fernandes	Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000423/2007007-01	URI	Control Room Fire Evacuation Procedure (Section IR05.01.01)

Open and Closed

05000423/2007007-02	NCV	Auxiliary Building Fire Safe Shutdown Procedure Lacked RCP Seal Thermal Shock Precautions (Section 1R05.01.02)

05000423/2007007-03	NCV	Auxiliary Shutdown Panel Reactor Head Vent Valves Not Isolated from Effects of a Control Room Fire (Section 1R05.07)
05000423/2007007-04	NCV	Emergency Light Unit High Failure Rate (Section 1R05.09)

LIST OF DOCUMENTS REVIEWED

Fire Protection Licensing Documents

Updated Final Safety Analysis Report Section 9.5.1, Rev. 18.4
Fire Protection Evaluation Report, Rev. 19.2
NUREG 1031, Millstone Unit No. 3 Safety Evaluation Report, 07/84
Supplement No. 1 to NUREG 1031, Millstone Unit No. 3 Safety Evaluation Report, 03/85
Supplement No. 2 to NUREG 1031, Millstone Unit No. 3 Safety Evaluation Report, 09/85
Supplement No. 3 to NUREG 1031, Millstone Unit No. 3 Safety Evaluation Report, 11/85
Supplement No. 4 to NUREG 1031, Millstone Unit No. 3 Safety Evaluation Report, 11/85
Supplement No. 5 to NUREG 1031, Millstone Unit No. 3 Safety Evaluation Report, 01/86
Letter from NNECO to the NRC, Millstone Nuclear Power Station, Unit No. 3 Response to SER Open Item (14.3) Request for Deviations from BTP CMEB 9.5-1, 10/01/85

Design Basis Documents

Technical Requirements Manual Sections 3, 6, & 7
MP-24-FPP-PRG, Fire Protection Program, Rev. 003-04
WC7, Site Fire Protection, Rev. 005-05
25212-BTP-9.5-1, MP3 Branch Technical Position 9.5-1 Compliance Report, Rev. 003

Procedures

EOP 3509, Fire Emergency, Rev. 021-00
EOP 3509.1,Control Room, Cable Spreading Area or Instrument Rack Room Fire, Rev. 011-02
EOP 3509.2, Aux. Bldg. El. 24'6", South Floor Area, 43'6" & 66'6" Fire, Rev. 003-01
EOP 3509.3, Aux. Bldg. El. 4'6" Area and 24'6" North Floor Area Fire, Rev. 001-02
EOP 3509.6, Aux. Bldg. West MCC/Rod Control/ACU Fire, Rev. 001-01
EOP 3509.16, South (B) EDG Enclosure or West (B) F.O. Vault Fire, Rev. 1
EOP 3506, Loss of All Charging Pumps, Rev. 009
EOP 35 ECA-0.0, Loss of All AC Power, Rev. 020-01
EOP 3509.1, Basis Information, Rev. 011-02
EOP 3509.2, Basis Information, Rev. 003
EOP 3509.3, Basis Information, Rev. 001
OP 3304A, Charging and Letdown, Rev. 030
OP 3314J, Auxiliary Building Emergency Ventilation and Exhaust and Removal, Rev. 005-04
OP-MP-100-1000, Millstone Operation Guidance & Reference Document, Rev. 0
MP3783EA, Component Cooling Motor Replacement for Fire Protection, Rev. 005-01
C- MP-790, Emergency Lighting Inspection and Testing, Rev. 001-00

MP-24-FPP-PRG, Fire Protection Program, Rev. 003-04
SFP 3, Fire Brigade Equipment Inspection, Rev. 004-02
SFP 6, Fire Protection System Underground Main Flow and Flush Test, Rev. 002-04
SFP 10, Fire Prevention Inspections, Rev. 004
SFP 14, Appendix "R" Safe Shutdown Ventilation Fan Speed Check, Rev. 002
WC7, Site Fire Protection, Rev. 005-05

Surveillances

SP 3442A02, RCS Wide Range Hot Leg Temperature Calibration Data Sheet: Protection Set 1, Rev. 009-03, Completed 06/25/07
SP 3673.2, Fire Transfer Switch Panel Operational Testing, Rev. 0, Completed 03/26/06
SP 3446C20, Appendix "R" Instrumentation Calibration, Rev. 001-04, Completed 04/19/07

Completed Tests and Surveillances

C-MP-790, Emergency Lighting Inspection and Testing, Completed 03/07 & 08/07
C-SP-600.6, Electric Fire Pump M7-8 Monthly Operability Demonstration, Completed 07/13/07 & 08/10/07
C-SP-600.7, Electric Fire Pump M7-8 Annual Operability Demonstration, Completed 08/24/06 & 07/13/07
C-SP-600.8, Diesel Fire Pump M7-7 Monthly Operability Demonstration, Completed 07/12/07 & 08/15/07
C-SP-600.9, Diesel Fire Pump M7-7 Annual Operability Demonstration, Completed 12/15/06 & 07/30/07
C-SP-600.10-001, Diesel Fire Pump Fuel Oil Storage Tank M7-15 Sample, Completed 05/02/07 & 07/24/07
C-SP-600.10-002, Diesel Fire Pump Fuel Oil Storage Tank M7-15 Sample Results, Completed 05/16/07 & 08/03/07
C-SP-600.13, P-82 Electric Fire Pump Monthly Operability Demonstration, Completed 07/27/07 & 08/24/07
C-SP-600.14, P-82 Electric Fire Pump Annual Operability Demonstration, Completed 10/06/05 & 09/07/06
SFP 3, Fire Brigade Equipment Inspection, Completed 03/07, 04/07, 06/07, & 07/07
SFP 5, Unit 3 Fire Door Inspection, Completed 12/19/06 &, 08/24/07
SFP 6, Fire Protection System Underground Main Flow and Flush Test, Completed 02/22/07
SFP 17, Unit 3 Fire Penetration Seal Inspection, Completed 01/08/03, 7/09/04, & 2/10/06
SFP 26, Functional Check of the CO2 Fire Protection System, West MCC/Rod Control Area, Completed 07/28/05
SP-3641A.4, Functional Check of Deluge and Sprinkler Systems, Completed 06/07/05, 09/27/05, &12/06/06
SP-3641B.1, Valve Lineup Check of the Fire Protection Halon System, Completed 07/30/07 & 08/27/07
SP-3641B.2, Computer/NPR Halon System Actuation Test, Completed 01/26/05, 01/03/06, & 03/20/07
SP-3641C.1, CO2 System Valve Lineup Verification, Completed 07/23/07 & 08/24/07

SP-3641C.2, Functional Check of the CO2 Fire Protection System, West MCC/Rod Control Area, Completed 06/05/06 & 09/20/06
SP-3641D.3-003, Fire Protection Zone Panel 2E Panel Operability Check, Completed 12/22/06 & 09/06/07
SP-3641D.3-004, Fire Protection Zone Panel 2E Detector Operability Checks, Completed 06/28/06, 07/13/06, & 06/03/07
SP-3641D.3-005, Fire Protection Zone Panel 2E Detector Operability Checks (Auxiliary Building CO2 Areas), Completed 03/29/06 & 03/30/07
SP-3641D.3-008, Fire Protection Zone Panel 4E Panel Operability Check, Completed 10/25/05 & 12/22/06
SP-3641D.3-009, Fire Detection Zone Panel 4E Detector Operability Checks E & W Switchgear, Completed 05/17/06 & 03/31/07
SP-3641D.3-012, Fire Detection Zone Panel 5C Panel Operability Check, Completed 10/25/05 & 09/27/06
SP-3641D.3-028, Fire Detection Zone Panel 5C EDG B Area Detector Operability Checks, Completed 11/16/05 & 10/26/06
SP-3641D.6-001, Fire Rated Assemblies Inspection, Completed 09/13/05, 03/19/07, & 05/07/07

Electrical Drawings and Wiring Diagrams

25212-30001, Main One Line/Phase Diagram Power Distribution System Composite, Rev. 22
25212-30004, Main One Line Diagram, 4160V Normal and Emergency Buses, Rev. 19
25212-30027, 480V MCC One Line Diagram, Auxiliary Building, Sheet 3, Rev. 31
25212-30076, One Line Diagram, 125 Vdc & 120 Vac Distribution System Composite, Rev. 26
25212-30106, One Line Diagram, 125 Vdc Battery No. 1 & 5, Rev. 25
25212-34032, Conduit Plan, Containment Structure, El 54'-4", Sheet 2, Rev. 12
25212-31830, Wiring Diagram, Transfer Switch Panel 3CES*PNLTSA, Sheet 5, Rev. 6
25212-31830, Wiring Diagram, Transfer Switch Panel 3CES*PNLTSA, Sheet 9, Rev. 3

Other Drawings

12179-15738, Charging Pump Water Curtain, Sheet 35, Rev. 11/83
25212-24036, Fire Stop and Seals Map Locations, Rev. 2
25212-24037, Fire Stop and Seals Map Locations, Rev. 1
25212-24261, FHA Plan El 24' – 6", Rev. 14
25212-24262, FHA Plan El 38' – 6", Rev. 7
25212-29367, Computer and Rack Room Under Floor, Sheet 20, Rev. G
SK-Y-14-6, Zone FP-1, Rev. 0
SKY-12, Zone FP-2 Sheet 2, Rev. 4/01
U3FHA1-AB1E, Fire Area AB-1 Zone D, Rev. 0

Elementary Diagrams 25212-32001(Series)

4BA Auxiliary Shutdown Panel 3RPS*PNLAS
6AAF Containment Recirculation Cooler Service water Supply Valve 3SWP*MOV54A, Rev. 11

6AAH Containment Recirculation Cooler Service water Supply Valve 3SWP*MOV54C, Rev. 9
6AAM Turbine Plant Component Cooling Heat Exchanger Inlet Valve 3SWP*MOV71A, Rev. 12
6AAU Service Water Pump Discharge Valve 3SWP*MOV102A, Rev. 15
6PK Volume Control Tank Outlet Isolation Valve 3CHS*LCV112B, Rev. 14
6PM Refueling Water Storage Tank to Charging Pump Valve 3CHS*LCV112D, Rev. 16
7DW Pressurizer Power Relief Valve 3RCS*PCV455A, Rev. 15
7DX Letdown Line Isolation Valves 3RCS*LCV 459&460, Rev. 9
7JC Letdown Orifice Isolation Valve 3CHS*AV8149A, Rev. 5
7JD Letdown Orifice Isolation Valve 3CHS*AV8149B, Rev. 6
7JE Letdown Orifice Isolation Valve 3CHS*AV8149C, Rev. 6
7RF Turbine Driven Auxiliary Feedwater Pump Motor Speed Changer 3FWA*M7, Rev. 10
7UM Reactor Vessel Head Vent Isolation Valve 3RCS*SV8095A, B, Rev. 5

Ignition Source Permits

37785-07-IS 37799-07-IS 37804-07-IS 37828-07-IS

Impairment Permits

Fire Impairment List, 09/19/07

Combustible and Flammable Material Permits

37709-07-FP 37750-07-FP 37752-07-FP 37753-07-FP 37765-07-FP

Pre-Fire Plans

Fire Fighting Strategy Manual, Unit 3, Rev. 09/02

Fire Drill Assessments dated

08/09/05	08/22/05	11/15/05	01/16/06	05/18/06	08/30/06
09/16/06	02/06/07	06/05/07	06/21/07	06/26/07	09/14/07

Fire Brigade Training

Fire Brigade Continuing Training Matrix, 2005, 2006, 2007
Fire Brigade Drill Statistics, 2004, 2005, 2006, 2007

Operator Safe Shutdown Training

E098092C, EOP 3509.2, Aux. Bldg. El. 24'6", South Floor Area, 43' & 66'6" Fire, Rev. 1 Chg. 2
E098091D, EOP 3509.1, Control Room Fire Demonstration, Rev. 0 Chg. 2
E098091C, EOP 3509.1, Control Room, Cable Spreading Area or Instrument Rack Room Fire, Rev. 0 Chg. 3
C98207L, 3509.1 In-Plant Walkdown, Rev. 1 Chg. 2

Condition Reports

CR-97-01984 CR-01-07812 CR-01-10837 CR-04-08450 CR-05-01273 CR-05-13649
CR-06-02361 CR-06-04584 CR-06-07490 CR-06-10312 CR-06-10706 CR-06-12466
CR-07-00644 CR-07-02402 CR-07-02687 CR-07-02782 CR-07-02907 CR-07-03866
CR-07-08399 CR-07-09034 CR-07-09293 CR-07-09319 CR-07-09320 CR-07-09659
CR-07-09685 CR-07-09905 CR-07-10054 CR-07-10124 CR-07-10158 CR-07-10161
CR-07-10614 CR-01-10163 CR-07-10363

Calculations/Engineering Records/Specifications

S-04071F3, MP3 BTP 9.5-1 RELAP5 Fire Shutdown Analysis, Rev. 0
S-04152S3, Revised MP3 RCP Seal Water Return Line Transient Analysis, Rev. 0
M3-EV-97-0313, Technical Evaluation for Appendix R Safe-Shutdown Cables in Duct Run Manholes, Rev. 0
M3-EV-98-0142, Technical Evaluation for Credited Operator Actions Millstone Unit 3, Rev. 01
M3-EV-05-0007, Technical Evaluation for RCP Seal Leak-off Behavior Following Loss of All Seal Cooling Event, Rev. 0
25212-ER-98-0049, Supplemental Information to AB-1 Evaluation in Appendix B of the BTP 9.5-1 Compliance Report, Rev. 00
25212-ER-04-0011, Appendix R Inputs to Fire Safe Shutdown Therm-hydraulic Calculation, Rev. 0
25212-ER-04-0028, Transmittal of RELAP5 Fire Shutdown Analysis Report, Rev. 0
25212-ER-04-0030, Validation and Verification of EOP 3509.1 Using Simulator, Field, and Table Top Validation, 05/28/04
S-04071F3, MP3 BTP9.5-1 RELAP5 Fire Shutdown Analysis, Rev. 0
NEV-97-313E, Fire Hazards Recovery Analysis, TREAT Simulation for the Loss of Charging Event, 12/11/97

Vendor Manuals

25212-363-001B, Special Hazard Fire Extinguishing System, Rev. V
25212-902-001, Emergency Lighting, Rev. 3

Quality Assurance (QA) Audits and Self Assessments

05-04, Fire Protection QA Program, 05/24/05
06-04, Fire Protection Program Implementation, 06/21/06
07-04, Fire Protection Quality Assurance Program, 06/26/07
MP-SA-07-31, Fire Protection Program Self-Assessment, 03/07
MPS-SA-06-36, Maintenance Rule Program Periodic Assessment, 11/06

System Health Reports

Emergency Lighting System, Quarter 4, 2005 & Quarter 2, 2007
Fire Detection System, Quarter 4, 2006
Fire Protection System, Quarter 4, 2006

Work Orders

06-00018 06-02820 06-11009

Miscellaneous Documents

Individual Plant Examination of External Events Submittal, 08/90
CO2 Storage Tank Replacement Plan, 09/25/07
Computer Room Halon Concentration Acceptance Test, 11/02/83
CR 5773-4324, Acceptance Testing of Penetration Seals Made with Embeco 636 and Masterflow 713 Grout, Rev 0
Email from Joe Mangeno to Steve Garvin, Subject: Scaffold Inspections/ Fw: MP3 Aux Bldg 24', Water Curtain Obstructions, 09/07/06
Emergency Lighting Timeline, 10/07
Maintenance Rule (a)(1) Evaluation for the Emergency Lighting System, Rev. 0-11
TR 154, Acceptance Testing of TCO-005 Transbond 150M Used in an Electrical Opening Penetration, Rev. 1
TR 184, Acceptance Testing of TCO-050 Silicone Foam Used as a Penetration Seal Material, Rev. 0
West MCC/Rod Control Area CO2 Concentration Acceptance Test, 11/15/85

LIST OF ACRONYMS USED

AC	Alternating Current
ASP	Auxiliary Shutdown Panel
BTP	Branch Technical Position
CFR	Code of Federal Regulations
CMEB	Chemical, Mechanical, and Electrical Branch
CR	Condition Report
ELU	Emergency Lighting Unit
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
NCV	Non-cited Violation
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
Rev.	Revision
SDP	Significance Determination Process
SRA	Senior Reactor Analyst
UFSAR	Updated Final Safety Analysis Report
VCT	Volume Control Tank