

March 29, 2005

Mr. David A. Christian
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SUBJECT: MILLSTONE POWER STATION, UNIT NO. 3 - ISSUANCE OF AMENDMENT
RE: EXTENSION OF ALLOWED OUTAGE TIME FOR EMERGENCY DIESEL
GENERATOR LOAD SEQUENCER (TAC NO. MC5878)

Dear Mr. Christian:

The Commission has issued the enclosed Amendment No. 221 to Facility Operating License No. NPF-49 for the Millstone Power Station, Unit No. 3, in response to your application dated February 10, 2005, as supplemented on March 23, 2005. The amendment extends the allowed outage time for the emergency diesel generator load sequencer from 6 to 12 hours.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

George Wunder, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 221 to NPF-49
2. Safety Evaluation

cc w/encls: See next page

Millstone Power Station, Unit No. 3

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DOMINION NUCLEAR CONNECTICUT, INC., ET AL.

DOCKET NO. 50-423

MILLSTONE POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 221
License No. NPF-49

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Dominion Nuclear Connecticut, Inc. (the licensee) dated February 10, 2005, as supplemented March 23, 2005, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-49 is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 221, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated in the license. Dominion Nuclear Connecticut, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of issuance, and shall be implemented within 5 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Darrell J. Roberts, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: March 29, 2005

ATTACHMENT TO LICENSE AMENDMENT NO. 221

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

Replace the following pages of the Appendix A Technical Specifications, with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

3/4 3-23

3/4 3-24

Insert

3/4 3-23

3/4 3-24

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 221

TO FACILITY OPERATING LICENSE NO. NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.

MILLSTONE POWER STATION, UNIT NO. 3

DOCKET NO. 50-423

1.0 INTRODUCTION

By letter dated February 10, 2005, as supplemented March 23, 2005, Dominion Nuclear Connecticut, Inc. (the licensee) submitted a request for changes to the Millstone Power Station, Unit No. 3 (MP2) Technical Specifications (TSs). The requested changes would extend the allowed outage time (AOT) for the emergency generator load sequencer (EGLS) from 6 to 12 hours. The March 23, 2005, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 REGULATORY EVALUATION

General Design Criterion (GDC) 17, "Electric Power System," of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix A, "General Design Criterion for Nuclear Power Plants," requires that nuclear power plants have an onsite electric power system and an offsite electric power system to permit the functioning of structures, systems and components (SSCs) important to safety. The safety function of each system (assuming the other system is not functioning) is to provide sufficient capacity and capability to assure that (1) fuel design limits and design conditions of the reactor coolant boundary are not exceeded as a result of anticipated operational occurrences (AOOs), and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents. The onsite electric power supplies (including the batteries) and the onsite electric distribution system is required to have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure. Electric power from the transmission network to the onsite electric distribution system is required to be supplied by two physically-independent circuits designed and located so as to minimize the likelihood of their simultaneous failure. Each of these circuits is required to be designed to be available in sufficient time following a loss of all onsite alternating current power supplies and the other offsite electric power circuit, to assure that fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded. One of these circuits is required to be available within a few seconds following an accident to assure that core cooling, containment integrity, and other vital safety functions are maintained. In addition, GDC 17 requires provisions to minimize the probability of losing

electric power from the remaining electric power supplies as the result of loss-of-power from the unit, the offsite transmission network, or the onsite power supplies.

Section 50.36 of 10 CFR, "Technical Specifications," requires the TSs to be derived from the analyses and evaluation included in the safety analysis report. A TS limiting condition for operation (LCO) is required to be established for each SSC that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier. LCOs specify minimum requirements for ensuring safe operation of the unit.

Surveillance Requirements (SRs) are requirements, included as part of the TSs, to assure that the necessary quality of SSCs are maintained and LCOs will be met. When an LCO is not met, either due to component failure or maintenance outage, the TSs require action be taken within a specified time to restore required equipment to an operable condition. This specified time to take action is referred to as the AOT or completion time (CT).

The MP3 electric power system design, pursuant with GDC 17, includes offsite and onsite electric power systems to permit functioning of required equipment. The offsite system design includes two physically-independent circuits between the offsite transmission network and the onsite electric distribution system. Each offsite circuit has sufficient capacity and capability (assuming the onsite system is not functioning) to assure (1) fuel design limits and design conditions of the reactor coolant boundary are not exceeded as a result of AOOs, and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents. The onsite system design includes two independent and redundant emergency diesel generator (EDG) power supplies and their associated electric distribution system (or load group). Each EDG power supply and their associated load group have sufficient capacity and capability (assuming the offsite system is not functioning) to assure (1) fuel design limits and design conditions of the reactor coolant boundary are not exceeded as a result of AOOs, and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents. Pursuant to 10 CFR 50.36, applicable LCOs, Actions, and SRs have been included as part of current TSs to assure the availability of required equipment.

As part of MP3's design, loss-of-power instrumentation and EGLS systems are installed to support the availability of sufficient capacity and capability of offsite and onsite power supplies and their associated load groups. Loss-of-power instrumentation consists of two under-voltage detection schemes installed as part of each of the two independent and redundant load groups. These under-voltage detection schemes automatically separate the load groups from the offsite system, start the EDG, and through the EGLS, shed and sequentially load the EDG as required.

The EGLS system design includes one EGLS installed as part of each of the two independent and redundant load groups. The EGLS, in response to an actuation signal from the loss-of-power instrumentation, disconnects selected loads and sequences the load group onto the onsite EDG power supply. This disconnection of loads and sequencing of the load group supports the availability of sufficient capacity and capability of the onsite EDG power supply and its associated load group when needed (assuming the offsite system is not functioning) to assure fuel design limits and design conditions of the reactor coolant boundary are not exceeded as a result of AOOs. In addition, the EGLS, in response to an accident signal without

a loss-of-offsite power, sequences the load group onto the offsite power supply. This sequencing of the load group supports the availability of sufficient capacity and capability of the offsite power supply and its associated load group to assure fuel design limits and design conditions of the reactor coolant boundary are not exceeded as a result of AOOs.

Loss-of-power instrumentation and EGLS systems support the availability of sufficient capacity and capability of offsite and onsite power supplies and their associated load groups. Pursuant to 10 CFR 50.36, applicable LCOs, Actions, and SRs have been included as part of the current TSs to assure the availability of required equipment.

3.0 TECHNICAL EVALUATION

The licensee proposes to increase their current TS CT (or AOT) for an inoperable EGLS from 6 to 12 hours. The TS CT is a temporary relaxation of operability for required equipment such as the EGLS. The CT provides a limited time to fix components and return required equipment to an operable status. Establishing this limited time to fix components is based, primarily, on the reliability of the subject SSC and whether the reliability of the remaining required operable equipment during the short time period of a CT is commensurate with the reliability when all required equipment is operable.

The licensee determined that the EGLS failure is due to age degradation of an integrated circuit. This equipment has been in service since original construction of the plant and has operated with a high degree of reliability. The licensee based this determination on experience with similar control elements used elsewhere in the plant. The licensee stated that experience indicates that certain logic gates may degrade such that after they actuate they do not reset to 0 volts direct current, but rather return to some indeterminate voltage. Such a failure would cause the actuation signal to remain. Failures such as this are random and, therefore, there is not a likelihood of common mode failure. The licensee will verify the failure mode on completion of repairs to the unit.

The licensee considers the 'A' EGLS to be degraded but operable. If current surveillance practices were to continue to be used with the EGLS in its degraded state, the licensee would need to cycle power to the unit in order to reset the actuation logic for the affected engineered safeguards ventilation train. The licensee is concerned that the repeated cycling of power would result in further deterioration of the degraded actuation logic. The MP3 EGLSs have previously not been subjected to repeated cycling of power in order to reset degraded logic circuitry; therefore, there is no specific reliability data available to assess the impact repeated power-cycling might pose for this condition.

EGLS is an essential support system to the EDG associated with a given engineered safety feature bus (or load group). Inoperability of an EGLS will, therefore, affect the automatic loading of every major safety system in the associated load group. The unavailability of the EGLS, however, does not prevent the EDG from being started and loaded with safety system loads in manual mode.

In the judgement of the Nuclear Regulatory Commission (NRC or the Commission) staff, the proposed 12-hour CT is a short time considering the reliability of remaining equipment that is required to be operable. The staff has concluded that the proposed CT does not alter any of the assumptions used in the safety analyses, nor will it cause any safety system parameters to

exceed their acceptance limit. The proposed 12-hour CT is commensurate with the safety function provided by the system and is, therefore, considered acceptable.

4.0 SUMMARY

Based on the above discussion, the staff finds that the reliability of the remaining operable equipment (during the proposed 12-hour allowed inoperability for the EGLS) is commensurate with the reliability when all required equipment is operable. The proposed CT does not alter any of the assumptions used in the safety analyses, nor will it cause any safety system parameters to exceed their acceptance limit. The proposed CT, therefore, has no adverse effect on plant safety. The system design (with the proposed CT included as part of the TSs) continues to meet the requirements of GDC 17. The proposed change is, therefore, considered acceptable.

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The regulations of 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards considerations, if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety.

The licensee has evaluated the proposed amendment against the above standards pursuant to the procedures of 10 CFR 50.91, and their evaluation is presented below:

Criterion 1:

Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed change increases the allowed time to restore the inoperable EGLS to operable status from 6 to 12 hours. The proposed change does not modify any plant equipment and does not impact any failure modes that could lead to an accident. Additionally, the proposed change has no effect on the consequence of any analyzed accident since the change does not affect the function of any equipment credited for accident mitigation. Based on this discussion, the proposed amendment does not increase the probability or consequences of an accident previously evaluated.

Criterion 2:

Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change increases the allowed time to restore the inoperable EGLS to operable status from 6 to 12 hours. It does not modify any plant equipment and there is no impact on the capability of existing equipment to perform its intended functions. No system setpoints are being modified and no changes are being made to the method in which plant operations are conducted. No new failure modes are introduced by the proposed changes. The proposed amendment does not introduce accident initiators or malfunctions that would cause a new or different kind of accident. Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Criterion 3:

Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The proposed change increases the allowed time to restore the inoperable EGLS to operable status from 6 to 12 hours. The proposed change does not affect any of the assumptions used in the accident analysis, nor does it affect any operability requirements for equipment important to plant safety. Therefore, the proposed change will not result in a significant reduction in the margin of safety as defined in the Bases for Technical Specifications covered in this License Amendment Request.

Based on this review, the Commission has made a final determination that this amendment involves no significant hazards considerations.

6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Connecticut State official was notified of the proposed issuance of the amendment. The State official agreed with the staff's assessment.

7.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes SRs. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (70 FR 8641). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

8.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: J. Knox

Date: March 29, 2005