



Constellation
Nuclear

Nine Mile Point
Nuclear Station

*A Member of the
Constellation Energy Group*

June 28, 2002
NMP1L 1670

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63
TAC No. MB5452

***Subject: Application for Amendment to Technical Specification Table 4.6.2b,
"Instrumentation that Initiates Primary Coolant System or Containment
Isolation"***

Gentlemen:

Nine Mile Point Nuclear Station, LLC (NMPNS) hereby transmits an Application for Amendment to the Nine Mile Point Unit 1 (NMP1) Technical Specifications (TSs) as set forth in Appendix A of Operating License DPR-63. Attachment A provides the retyped TS page with a marginal bar indicating the area of proposed change. Attachment B contains supporting information and analysis demonstrating that the proposed change involves no significant hazards considerations pursuant to 10CFR50.92. Attachment C provides a "marked-up" copy of the existing TS page. NMPNS's determination that the proposed change meets the criteria for categorical exclusion from performing an environmental assessment is based on the evaluation included as Attachment D.

The proposed change revises item (9) of TS Table 4.6.2b, "Instrumentation that Initiates Primary Coolant System or Containment Isolation," to provide greater flexibility in scheduling surveillances associated with shutdown cooling system isolation capability without adversely impacting plant safety.

Contingent on NRC approval, NMPNS plans to implement the proposed change prior to refueling outage number 17 (RFO17), which is anticipated to occur in the Spring of 2003. NMPNS, therefore, requests that the NRC issue the amendment no later than January 15, 2003.

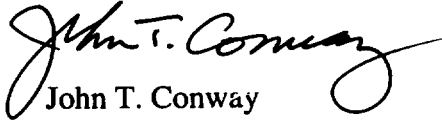
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Pursuant to 10CFR50.91(b)(1), NMPNS has provided a copy of this amendment application and the associated analyses regarding no significant hazards considerations to the appropriate state representative.

I declare under penalty of perjury that the foregoing is true and correct. Executed on June 28, 2002.

Very truly yours,


John T. Conway
Site Vice President

JTC/IAA/jm
Attachments

cc: Mr. H. J. Miller, NRC Regional Administrator, Region I
Mr. G. K. Hunegs, NRC Senior Resident Inspector
Mr. P. S. Tam, Senior Project Manager, NRR (2 copies)
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ATTACHMENT A

NINE MILE POINT NUCLEAR STATION, LLC

LICENSE NO. DPR-63

DOCKET NO. 50-220

Proposed Changes to the Current Technical Specifications

Replace the existing Technical Specifications page listed below with the attached revised page. This revised page has marginal marking (revision bar) to indicate changes to the text.

Remove

Insert

210

210

TABLE 4.6.2b (cont'd)

**INSTRUMENTATION THAT INITIATES
PRIMARY COOLANT SYSTEM OR CONTAINMENT ISOLATION**

Surveillance Requirement

<u>Parameter</u>	<u>Sensor Check</u>	<u>Instrument Channel Test</u>	<u>Instrument Channel Calibration</u>
(6) Low-Low-Low Condenser Vacuum	None	Once during each major refueling outage	Once during each major refueling outage
(7) High Temperature Main-Steam-Line Tunnel	None	Once during each major refueling outage	Once during each major refueling outage
<u>CLEANUP SYSTEM ISOLATION</u>			
(8) High Area Temperature	Once/week	Once during each major refueling outage	Once during each major refueling outage
<u>SHUTDOWN COOLING SYSTEM ISOLATION</u>			
(9) High Area Temperature	Once/week	Once per operating cycle	Once per operating cycle

ATTACHMENT B

NINE MILE POINT NUCLEAR STATION, LLC

LICENSE NO. DPR-63

DOCKET NO. 50-220

Supporting Information and No Significant Hazards Consideration Analysis

Introduction

This license amendment application requests a change to certain surveillance requirements specified in the Nine Mile Point Unit 1 (NMP1) Technical Specifications (TS) regarding the isolation capability of the shutdown cooling system (SDCS).

Item (9) of TS Table 4.6.2b, "Instrumentation that Initiates Primary Coolant System or Containment Isolation," requires the SDCS channel functional testing and channel calibration to be performed "Once during each major refueling outage." This requirement will be changed to "Once per operating cycle." This change will remove the restriction to perform the above surveillances only during refueling outages.

The reasons for requesting this change are as follows:

- The proposed change will enable the SDCS channel functional testing and calibration, as well as any consequential maintenance work, to be completed either at power or during a non-refueling plant outage. This will help maintain the availability of the SDCS to support reactor shutdown operations during refueling. (See SDCS description under Evaluation of Change).
- The current NMP1 refueling outages are short and involve replacement of approximately one third of the reactor core during each outage. Due to concurrent plant wide maintenance, repair, modification, testing, etc. activities, some of which cannot be accomplished when the plant is at power, plant resources are typically limited during refueling outages. The proposed change will help allocate these resources appropriately and prudently to the different activities.

Evaluation of Change

BACKGROUND

The NMP1 SDCS is the functional equivalent of the residual heat removal system at other nuclear power plants in that the SDCS is designed for completing cool down of the reactor coolant system (RCS) during plant shutdown operations. Initially, the RCS is cooled by dumping steam from the reactor vessel to the main condenser. At approximately 350 degrees F and 120 psig, the main condenser is no longer available due

to the loss of the turbine seals. At this time, the SDCS is manually placed in service from the control room. It cools the water down to 125 degrees F and maintains it at this temperature by continuous removal of decay heat from the water in the reactor vessel. The system is also required to bring the plant to cold shutdown (≤ 212 degrees F) from power operation within ten hours in accordance with TS requirements.

The SDCS is typically needed for only a limited amount of time during each plant cycle. It is not credited in the plant safety analysis as being required during accident conditions to bring the plant to safe conditions. The only safety-related functions of the SDCS are (i) to maintain the integrity of the reactor coolant pressure boundary, and (ii) to provide primary containment isolation of the shutdown cooling lines.

The SDCS is also required as an alternate method to achieve cold shutdown in an Appendix R fire event. (The other method to achieve cold shutdown relies on electromagnetic relief valves, core spray, containment spray, and containment spray raw water.)

The SDCS consists of three independent loops, which share a common suction and discharge line into the primary containment. Each loop contains a blocking valve, pump, heat exchanger, flow control valve, check valve, and associated controls and instrumentation. The system takes suction on the suction line of the #14 reactor recirculation loop through a 14-inch header and discharges into the discharge line of the #15 reactor recirculation loop through another 14-inch line. The number of loops required to achieve and maintain cold shutdown is variable depending on the operating conditions prior to shutdown, time after shutdown, and desired cool down rate. The heat exchangers are cooled by demineralized water from the reactor building closed loop cooling water system (RBCLCS).

The major components of the SDCS (except the inboard isolation valves) are located outside the primary containment in the reactor building (secondary containment) in a separate concrete-shielded room designed to reduce radiation outside the room to an acceptable level. Area temperature detectors are installed at appropriate locations inside this room to isolate the SDCS automatically and to initiate an alarm in the control room if there is a line break in the system while it is in service.

SDCS isolation at the containment boundary is provided by motor-operated valves IV-38-01 (inboard) and IV-38-02 (outboard) on the supply line from the reactor recirculation system and motor-operated valve IV-38-13 (inboard) and check valve 38-12 (outboard) on the return line to the reactor recirculation system.

The motor-operated isolation valves are maintained closed during normal reactor operation. Additionally, the inboard and outboard suction isolation valves (IV-38-01 and IV-38-02) are interlocked such that only one can be opened at reactor pressures above 120 psig. A qualified, 30-day water seal from the core spray system is maintained between each set of inboard and outboard isolation valves. Stroke testing of the motor-operated isolation valves is performed at cold shutdown intervals in accordance with the

NMP1 inservice testing program. Power to the motor-operated valves is removed during normal reactor operation to ensure that spurious or inadvertent opening of one of these valves will not result in the loss of the water seal.

During shutdown cooling operations, the motor-operated isolation valves will close on a low-low water level signal from the reactor protection system (RPS) or on a high area temperature signal (indicative of a high energy line break) from any one of four local temperature elements (sensors) providing input to the RPS. One trip system is provided for the high area temperature isolation. Additionally, as the area of concern is small, only one instrument channel is provided. Item (9) of TS Table 3.6.2b specifies that the high area temperature setpoint be 170 degrees F or less. SDCS isolation can also be initiated manually from the control room.

Surveillance requirements that apply to the isolation function of the SDCS are stated in Table 4.6.2b, "Instrumentation that Initiates Primary Coolant System or Containment Isolation," of the NMP1 TS. These requirements are described below:

1. Item (2) of Table 4.6.2b requires manual initiation of Channel 11 and Channel 12 reactor vessel isolation signals "Once during each major refueling outage." This test involves actuation of the primary coolant manual isolation Channel 11 and Channel 12 trip systems, automatic initiation of SDCS isolation through the trip relay, and actual stroking of the SDCS isolation valves during each refueling outage.
2. Item (9) of TS Table 4.6.2b requires an instrument channel test and instrument channel calibration "Once during each major refueling outage" to demonstrate the capability of the SDCS to isolate upon receipt of a high area temperature signal. This channel test and calibration is currently performed using a procedure that includes SDCS high area temperature isolation trip signals, trip system calibration, and actual valve stroking. These requirements can be satisfied by performing (i) a circuit logic test through the trip relay with or without valve stroking, and (ii) supplementing the above test with the refueling interval valve stroke test described in paragraph (1) above to meet the requirements of item (2) of TS Table 4.2.6b. Parts (i) and (ii) can be performed in any sequence and provide adequate overlap to ensure that the entire channel is tested and calibrated. Part (i) need not involve valve stroking and, therefore, can be performed with the plant at power if the TS restriction to perform the test and calibration during refueling is removed.

JUSTIFICATION

Technical Justification

The proposed change does not change the frequency, acceptance criteria, required test method and equipment configuration, or allowable temperature set point for SDCS isolation instrumentation channel functional test and calibration. The channel functional test and calibration performed pursuant to item (9) of TS Table 4.6.2b will continue to

demonstrate the operability of the SDCS logic circuitry in the same manner and at the same frequency as at present from the initiation of the high area temperature signal up to verification that the initiating relay contacts open in order to ensure that the isolation valves would close if power were available. The refueling interval tests performed pursuant to item (2) of TS Table 4.6.2b will continue to demonstrate that the isolation valves stroke to the closed position upon opening of the relay contacts. Thus, the technical requirements of item (9) of TS Table 4.6.2b concerning channel functional testing and calibration will be fully met.

Consistency with Existing TS Frequencies

The proposed "once per operating cycle " frequency is consistent with a number of other surveillance frequencies in the NMP1 TS. For example, Item (a) of TS 4.2.7, "Reactor Coolant System Isolation Valves," requires all operable automatically initiated power-operated reactor coolant system isolation valves to be tested "at least once per operating cycle" for automatic initiation and closure times. The NMP1 TS define "Operating Cycle" as " that portion of Station operation between reactor startups following each major refueling outage." It should be noted that NMP1 is currently on a 24-month operating cycle.

Consistency with Generic Letter (GL) 91-04 Guidance

The removal of the refueling outage restriction is consistent with NRC staff positions stated in GL 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. In GL 91-04, the staff recognized that the intent of restricting certain surveillances to a plant shutdown was to ensure that the surveillances would only be performed when it is consistent with safe plant operation. In GL 91-04, the staff also stated:

"The staff concludes that the TS need not restrict surveillances as only being performed during shutdown. Nevertheless, safety dictates that when refueling interval surveillances are performed during power operation, licensees give proper regard for their effect on the safe operation of the plant. If the performance of a refueling interval surveillance during plant operation would adversely affect safety, the licensee should postpone the surveillance until the unit is shut down for refueling or is in a condition or mode that is consistent with the safe conduct of that surveillance."

Under the present proposal, whenever the channel functional test portion of the surveillances will be conducted at power, the SDCS isolation valves will remain in a safe configuration (closed with no power provided for valve actuation). Thus, the safety-related function of the SDCS will not be compromised and plant safety will be maintained.

The calculation that defines the setpoint for the SDCS high area temperature monitor assumes the calibration interval to be 30 months (24-month operating cycle length plus 6-

month maximum allowable extension per TS 4.0.1). Consistent with GL 91-04 guidance, the calculation uses the setpoint methodology described in ISA-67.04-1994, "Setpoints for Nuclear Safety-Related Instrumentation." Instrument drift considerations have been appropriately applied to the 30-month (maximum) calibration interval.

Consistency with NUREG-1434 Requirements

The proposed change is consistent with its equivalent line item in the improved Standard Technical Specifications for General Electric (GE) BWR/6 plants (NUREG-1434, Revisions 1 and 2). Table 3.3.6.1-1 of NUREG-1434, Revisions 1 and 2, contains the surveillance requirements relating to primary containment isolation instrumentation. Item 5.a of this table requires that the shutdown cooling system isolation function for the "RHR Equipment Room Ambient Temperature - High" parameter be tested according to the following Surveillance Requirements (SRs):

- | | |
|--------------|---|
| SR 3.3.6.1.5 | (channel calibration once every 18 months) |
| SR 3.3.6.1.6 | (logic system functional test once every 18 months) |

The above cited SRs are based on an 18-month operating cycle but contain no restriction to perform the channel calibration and logic system functional test only during refueling outages. NMPNS has not identified any plant-specific reason for continuing this restriction at NMP1.

Probabilistic Risk Analysis (PRA) Results

The SDCS is typically needed for a limited amount of time during each operating cycle. In the NMP1 probabilistic risk analysis (PRA), the SDCS was screened as an unlikely system to contribute to an interfacing system loss of coolant accident (ISLOCA) for the following primary reasons:

- High pressure pipe design.
- System normally full and pressurized, thereby reducing the significance of dynamic loads in the unlikely event that the isolation valves inadvertently open.

The proposed change has no impact on the above screening basis. The motor-operated isolation valves are administratively maintained closed with power removed as a prerequisite to power operation. Channel functional testing during power operation hypothetically increases the likelihood of an ISLOCA event compared with testing during shutdown (lower reactor temperature and pressure), assuming that the valves fail to remain closed during power operation. However, the valve positions are controlled by administrative controls, and therefore, the ISLOCA event is still a very low frequency event and can be considered as screened. Thus, the proposed change has no measurable impact on SDCS availability as modeled in the PRA.

A shutdown PRA has not been completed for NMP1. However, the proposed specification change is judged to have no negative impact on shutdown safety. Rather,

the impact on shutdown safety is positive considering that SDCS operability and availability will be improved during plant shutdown operations.

CONCLUSION

Based on the foregoing justification, NMPNS believes that the proposed change is acceptable, does not present undue risk to public health and safety, and is not inimical to the common defense and security.

No Significant Hazards Consideration Analysis

This license amendment application requests changes to surveillance requirements in Table 4.6.2b of the Nine Mile Point Unit 1 (NMP1) Technical Specifications (TS) regarding the isolation capability of the shutdown cooling system (SDCS). Specifically, the changes will remove the restriction to perform channel functional testing and channel calibration associated with SDCS high area temperature only during refueling outages. The changes will allow these surveillances to be performed during other operating conditions on a "Once per operating cycle" basis, thereby maintaining SDCS availability to support reactor shutdown operations during refueling.

10CFR50.91 requires a licensee requesting an amendment to provide its analysis concerning the issue of no significant hazards consideration using the standards in 10CFR50.92. Nine Mile Point Nuclear Station, LLC has evaluated this proposed amendment against the standards in 10CFR50.92 and determined that it involves no significant hazards considerations. The following analysis has been performed.

- 1. The operation of Nine Mile Point Unit 1 in accordance with the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.**

The only safety-related functions of the SDCS are (i) to maintain the integrity of the reactor coolant pressure boundary, and (ii) to provide primary containment isolation of the shutdown cooling lines. The proposed amendment removes an unnecessary restriction to perform channel functional testing and calibration associated with SDCS isolation capability only during refueling outages. It provides the flexibility to perform these surveillances during other operating conditions on a "once per operating cycle" basis. The change does not modify the surveillance frequency, surveillance acceptance criteria, high area temperature setpoint limit for initiating SDCS isolation, plant equipment configurations during SDCS surveillances, or the existing requirements for maintaining SDCS isolation and reactor coolant pressure boundary integrity.

Based on the above, the operation of NMP1 in accordance with the proposed amendment will not involve a significant increase in the probability or the consequences of an accident previously evaluated.

- 2. The operation of Nine Mile Point Unit 1 in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.**

The proposed change does not involve any physical modifications to the plant and does not alter equipment configuration, setpoints, safety parameters, surveillance interval durations, or surveillance acceptance criteria. It does not affect the operation of any safety-related structure, system, or component in a manner that could introduce a new accident precursor or a new failure mechanism. The SDCS isolation valves will continue to perform their isolation function by remaining closed with power removed during power operation of the reactor.

Based on the above, the operation of NMP1 in accordance with the proposed amendment cannot create the possibility of a new or different kind of accident from any accident previously evaluated.

- 3. The operation of Nine Mile Point Unit 1 in accordance with the proposed amendment will not involve a significant reduction in a margin of safety.**

The proposed change does not affect any of the plant's fission product barriers or safety/operational limits. The high area temperature setpoint for SDCS isolation will remain within the existing TS limit. The SDCS isolation valves will continue to remain closed with power removed during power operation of the reactor. The proposed "Once per operating cycle" surveillances will be adequate to ensure acceptable SDCS equipment operability and reliability.

Based on the above, the operation of NMP1 in accordance with the proposed amendment will not involve a significant reduction in a margin of safety.

ATTACHMENT C

NINE MILE POINT NUCLEAR STATION, LLC

LICENSE NO. DPR-63

DOCKET NO. 50-220

“Marked-Up” Copy of Proposed Changes to Current Technical Specifications

The current version of Technical Specifications page 210 has been marked-up by hand to reflect the proposed changes.

TABLE 4.6.2b (cont'd)

**INSTRUMENTATION THAT INITIATES
PRIMARY COOLANT SYSTEM OR CONTAINMENT ISOLATION**

Surveillance Requirement

<u>Parameter</u>	<u>Sensor Check</u>	<u>Instrument Channel Test</u>	<u>Instrument Channel Calibration</u>
(6) Low-Low-Low Condenser Vacuum	None	Once during each major refueling outage	Once during each major refueling outage
(7) High Temperature Main-Steam-Line Tunnel	None	Once during each major refueling outage	Once during each major refueling outage

CLEANUP SYSTEM ISOLATION

(8) High Area Temperature	Once/week	Once during each major refueling outage	Once during each major refueling outage
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SHUTDOWN COOLING SYSTEM ISOLATION

(9) High Area Temperature	Once/week	<p><i>per operating cycle</i> Once during each major refueling outage ^</p>	<p><i>per operating cycle</i> Once during each major refueling outage ^</p>
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ATTACHMENT D

NINE MILE POINT NUCLEAR STATION, LLC

LICENSE NO. DPR-63

DOCKET NO. 50-220

Environmental Considerations

The proposed amendment involves a change to a surveillance requirement. Nine Mile Point Nuclear Station, LLC has reviewed the proposed amendment and determined that it does not involve (i) a significant hazard consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10CFR51.22(c)(9). Therefore, pursuant to 10CFR51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.