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Constellation Energy

Nine Mile Point Nuclear Station

July 30, 2007

U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTENTION: Document Control Desk

SUBJECT: Nine Mile Point Nuclear Station
Unit No. 2; Docket No. 50-410

License Amendment Request Pursuant to 10 CFR 50.90:
Revision to Drywell Spray Nozzle Testing Frequency

Pursuant to 10 CFR 50.90, Nine Mile Point Nuclear Station, LLC, (NMPNS) hereby requests an amendment to Nine Mile Point Unit 2 (NMP2) Renewed Operating License NPF-69. The proposed amendment would revise the testing frequency for drywell spray nozzles specified in Technical Specifications (TS) Surveillance Requirement (SR) 3.6.1.6.3 from "10 years" to "following maintenance that could result in nozzle blockage."

Industry experience has shown that nozzle blockage is unlikely since the nozzles are a passive design and the system is kept in a normally dry state. The proposed frequency will continue to provide confidence that an unobstructed flow path is available and will preclude the need for unnecessary testing when no activities have occurred that would introduce debris into the headers and no active degradation mechanism is present. Testing at the proposed frequency would reduce outage dose and improve personnel safety.

The description and technical basis of the proposed changes are contained in Attachment (1). The proposed TS changes are shown in the markup in Attachment (2). Associated TS Bases changes are shown in Attachment (3). The TS Bases changes are provided for information only and will be processed in accordance with the NMP2 Technical Specifications Bases Control Program (TS 5.5.10).

NMPNS requests approval of this request by February 28, 2008, with implementation within 30 days of receipt of the approved amendment. The requested approval date and implementation period will provide adequate time to complete implementation activities for removing the scheduled 10-year surveillance of the nozzles from the NMP2 Refueling Outage 11 scope.

Pursuant to 10 CFR 50.91(b)(1), NMPNS has provided a copy of this license amendment request, with attachments, to the appropriate state representative.

A001

HRR

Should you have any questions regarding this submittal, please contact T. F. Syrell, Licensing Director, at (315) 349-5219.

Very truly yours,



STATE OF NEW YORK :
: **TO WIT:**
COUNTY OF OSWEGO :

I, Keith J. Polson, being duly sworn, state that I am Vice President-Nine Mile Point, and that I am duly authorized to execute and file this request on behalf of Nine Mile Point Nuclear Station, LLC. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other Nine Mile Point employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.



Subscribed and sworn before me, a Notary Public, in and for the State of New York and County of oswego, this 30th day of July, 2007.

WITNESS my Hand and Notarial Seal:


Notary Public

My Commission Expires:

SANDRA A. OSWALD
Notary Public, State of New York
No. 01OS6032276
Qualified in Oswego County
Commission Expires 10-25-09

10/25/09
Date

KJP/JJD/kms

- Attachments: (1) Technical Basis and No Significant Hazards Determination
(2) Proposed Technical Specification (TS) Changes (Mark-Up)
(3) Changes to Technical Specification Bases (Mark-Up)

cc: M. J. David, NRC
S. J. Collins, NRC
Resident Inspector, NRC
J. P. Spath, NYSERDA

ATTACHMENT (1)

**TECHNICAL BASIS AND
NO SIGNIFICANT HAZARDS DETERMINATION**

TABLE OF CONTENTS

1. DESCRIPTION
2. PROPOSED CHANGE
3. BACKGROUND
4. TECHNICAL ANALYSIS
5. NO SIGNIFICANT HAZARDS DETERMINATION
6. APPLICABLE REGULATORY REQUIREMENTS/CRITERIA
7. ENVIRONMENTAL ASSESSMENT
8. PRECEDENCE
9. REGULATORY COMMITMENTS

ATTACHMENT (1)

TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS DETERMINATION

1. DESCRIPTION

The proposed amendment would change the Nine Mile Point Unit 2 (NMP2) Technical Specifications (TSs) contained in Appendix A to Renewed Operating License NPF-69 by changing the testing frequency for drywell spray nozzles specified in TS Surveillance Requirement (SR) 3.6.1.6.3 from “10 years” to “following maintenance that could result in nozzle blockage.”

2. PROPOSED CHANGE

The proposed license amendment would revise the surveillance frequency for testing the drywell spray nozzles. The proposed TS changes necessary for implementation are described below and are indicated on the mark-up pages provided in Attachment (2). Associated TS Bases changes are shown in Attachment (3). The TS Bases changes are provided for information only and will be processed in accordance with the NMP2 Technical Specifications Bases Control Program (TS Section 5.5.10).

TS Section 3.6.1.6, RHR (Residual Heat Removal System) Drywell Spray

SR 3.6.1.6.3 requires verification that each drywell spray nozzle is unobstructed. The frequency of this SR would be changed from “10 years” to “following maintenance that could result in nozzle blockage.”

3. BACKGROUND

The primary containment is designed with a suppression pool so that, in the event of a loss of coolant accident (LOCA), steam released from the primary system is channeled through the suppression pool water and condensed without producing significant pressurization of the primary containment. The primary containment is designed so that with the pool initially at the minimum water volume and the worst single failure of the primary containment heat removal systems, suppression pool energy absorption combined with subsequent operator controlled suppression pool cooling will prevent the primary containment pressure from exceeding its design value. However, the primary containment must also withstand a postulated bypass leakage pathway that allows the passage of steam from the drywell directly into the suppression pool airspace, bypassing the suppression pool. The RHR Drywell Spray System is designed to mitigate the effects of bypass leakage. In addition, credit is taken for the turbulence induced by the sprays to ensure a well-mixed primary containment atmosphere post-LOCA, which reduces the potential for a non-uniform hydrogen and oxygen concentration within the primary containment. While drywell spray provides for heat removal and fission product control following a large break LOCA, no credit is currently taken for these functions.

There are two redundant, 100% capacity RHR drywell spray subsystems. Each subsystem consists of a suction line from the suppression pool, an RHR pump, and one spray sparger inside the drywell. Dispersion of the spray water is accomplished by spray nozzles in each subsystem. Closed isolation valves maintain the subsystems in a dry state until drywell spray is initiated.

The RHR drywell spray mode would be manually initiated, if required, following a LOCA, according to emergency procedures.

SR 3.6.1.6.3 currently requires a test every ten years to ensure the drywell spray nozzles are not obstructed. However, nozzle blockage is considered unlikely, except as a consequence of maintenance or repair, since the system was demonstrated to be operable prior to initial plant startup, periodic air flow

ATTACHMENT (1)

TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS DETERMINATION

tests have been performed, and the design of the system minimizes the likelihood of significant corrosion or degradation. The risks and costs of the performance of this test are not commensurate with the safety benefit of performing the test unless there has been an activity which may have resulted in the introduction of material into the piping that may lead to nozzle blockage. The spray nozzles are located high in the drywell and access to the nozzles, to verify air flow, is difficult and presents substantial personnel safety hazards. The costs of performing the air test are high, as the performance of the test may delay critical path refueling outage activities. These risks and costs are unwarranted given the very low risk of nozzle obstruction. Many other licensees have obtained license amendments that revised the frequency of the test from some specific periodicity to following maintenance which could result in nozzle blockage (reference Section 8, Precedence).

4. TECHNICAL ANALYSIS

The NMP2 drywell spray nozzles are made of corrosion resistant Type 304 stainless steel. The nozzles were manufactured by Spraco, Inc., Model No. 47-1815-2611, and have a hollow cone ramp bottom type spray cone. The drywell spray nozzle orifices have a 1.0156" diameter and are designed to pass up to a 1" diameter particle without clogging. There are 64 nozzles in one sparger and 59 nozzles in the other. Piping to the nozzles is Type SA106 Grade B carbon steel.

Air flow testing and visual inspections of the NMP2 drywell spray nozzles were performed during initial plant pre-operational testing in 1986 and subsequently in 1992 and 1998. Nozzle blockage has not been identified by these tests. At the initiation of previous air flow tests, a momentary fine dark orange cloud (assumed to be rust particles) was observed exiting the nozzles. The clouds of particles did not cause blockage of any nozzles during the air tests, nor would these particles be expected to block the nozzles during actual operating conditions due to the small particle sizes and large diameter nozzle openings.

The drywell spray system is normally kept dry, from the motor-operated isolation valves located outside of the drywell through to the spray nozzles. A small amount of water enters the system during quarterly stroke testing of the isolation valves, which may have contributed to the rust particles observed during the previous air flow tests. To reduce the potential for corrosion product generation, the method for stroke testing will be revised to ensure that the drywell spray system remains dry. There has been no inadvertent initiation of the spray system that resulted in wetting of the piping or nozzles in the drywell. Furthermore, the containment is inerted with nitrogen during operation. As such, conditions do not exist for significant corrosion generation in the drywell spray system.

Procedure CNG-MN-1.01-1001, Foreign Material Exclusion, developed using industry guidance and operating experience documents, is in place to prevent the introduction of foreign material into the drywell spray system. When maintenance or repairs are performed on the drywell spray system or on other connected systems that could result in obstruction of the spray nozzles, the Foreign Material Exclusion (FME) Program ensures that system cleanliness is maintained. Procedure CNG-MN-1.01-1001 includes criteria for establishing FME areas, steps to take if FME control is lost, and guidance for FME retrieval. FME areas are clearly marked and material accountability is assured through logs and securing of loose items and tools. FME barriers and covers are used except when performing necessary operations. The FME controls require post maintenance verification of system cleanliness and freedom from foreign materials. If any material is unaccounted for in an FME area or a general FME concern is observed, a condition report is initiated in the corrective action program which would provide for a determination of the scope of the issue, the actions necessary to return the area to the required level of cleanliness, and whether testing is necessary.

ATTACHMENT (1)

TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS DETERMINATION

No maintenance has been performed on the drywell spray piping or nozzles since the last air flow test performed in 1998. Maintenance on other portions of the RHR system which connect to the drywell spray portion of the system has included routine periodic activities. FME control has not been lost for these activities. Additionally, the drywell spray nozzles are located high in containment with nozzles orifices oriented in the downward direction and thus are not subject to foreign material entry.

In summary, industry experience (from the precedents listed in Section 8) and previous NMP2 testing has shown that nozzle blockage is unlikely since the nozzles are a passive design and the system is kept in a normally dry state. The proposed frequency will continue to provide confidence that an unobstructed flow path is available and will preclude the need for unnecessary testing when no activities have occurred that would introduce debris into the headers and no active degradation mechanism is present. Testing at the proposed frequency would reduce outage dose and improve personnel safety.

5. NO SIGNIFICANT HAZARDS DETERMINATION

Nine Mile Point Nuclear Station, LLC (NMPNS), is requesting a revision to Renewed Operating License No. NPF-69 for Nine Mile Point Unit 2 (NMP2). The proposed amendment would change the NMP2 Technical Specifications (TSs) by changing the testing frequency for drywell spray nozzles specified in TS Surveillance Requirement (SR) 3.6.1.6.3 from "10 years" to "following maintenance that could result in nozzle blockage."

NMPNS has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

Response: No.

The proposed change modifies the surveillance requirement (SR) to verify that the drywell spray nozzles are unobstructed after maintenance that could introduce material that could result in nozzle blockage. The spray nozzles are not assumed to be initiators of any previously analyzed accident. Therefore, the proposed change does not increase the probability of any accident previously evaluated. The spray nozzles are used in the accident analyses to mitigate design basis accidents. The revised SR to verify system operability following maintenance is considered adequate to ensure operability of the Residual Heat Removal (RHR) Drywell Spray System. Since the system will still be able to perform its accident mitigation function, the consequences of accidents previously evaluated are not increased.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

ATTACHMENT (1)

TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS DETERMINATION

The proposed change revises the SR to verify that the RHR Drywell Spray System nozzles are unobstructed after maintenance that could result in nozzle blockage. The change does not introduce a new mode of plant operation and does not involve physical modification to the plant. The change will not introduce new accident initiators or impact the assumptions made in the safety analysis.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed change revises the frequency for performance of the SR to verify that the RHR Drywell Spray System nozzles are unobstructed. The frequency is changed from every 10 years to following maintenance that could result in nozzle blockage. This requirement, along with the foreign material exclusion program, the normal environmental conditions for the system, and the remote physical location of the spray nozzles, provide assurance that the spray nozzles will remain unobstructed. As the spray nozzles are expected to remain unobstructed and able to perform their post-accident mitigation function, plant safety is not significantly affected.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, NMPNS concludes that the proposed amendment presents no significant hazards considerations under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of “no significant hazards consideration” is justified.

6. APPLICABLE REGULATORY REQUIREMENTS/CRITERIA

The applicable criteria from 10 CFR 50, Appendix A, “General Design Criterion (GDC) for Nuclear Plants,” associated with the RHR Drywell Spray System are: GDC 38, “Containment Heat Removal,” GDC 39, Inspection of Containment Heat Removal System,” GDC 40, Testing of Containment Heat Removal System,” and GDC 50, Containment Design Basis.” The proposed revision of the surveillance requirement does not impact conformance with the applicable GDCs.

The Drywell Spray System, part of the RHR System, is designed to reduce containment pressure following an accident. The system operability requirements, combined with the requirement to perform post-maintenance testing to verify system operability, minimize the potential for nozzle obstruction and provide confidence that the system can perform its intended functions. Therefore, the proposed revision to the surveillance requirement frequency to verify spray nozzles are unobstructed following maintenance that could result in nozzle blockage is consistent with applicable regulatory requirements.

Based on the considerations discussed above, (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 requested license amendment will not be inimical to the common defense and security or to the health and safety of the public.

ATTACHMENT (1)

TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS DETERMINATION

7. ENVIRONMENTAL ASSESSMENT

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards 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 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

8. PRECEDENCE

Similar changes to the frequency of drywell nozzle testing have been approved for the following plants:

- Arkansas Nuclear One, Unit 2, approved July 2, 2007
- R. E. Ginna Nuclear Power Plant – approved July 31, 2006
- Comanche Peak Steam Electric station, Units 1 and 2 – approved September 23, 2005
- Vermont Yankee Nuclear Power Station – approved September 20, 2005
- Crystal River Unit 3 – approved August 4, 2005
- Millstone Power Station, Unit 3 – approved May 31, 2005
- Pilgrim Nuclear Power Station – approved April 12, 2005
- Calvert Cliffs Nuclear Power Plant, Units 1 and 2 – approved April 8, 2004
- Byron Station, Units 1 and 2 – approved September 22, 2003
- South Texas Project, Units 1 and 2 – approved August 20, 2003
- Beaver Valley Power Station, Units 1 and 2 – approved February 24, 2003
- Palisades Plant – approved February 24, 2003
- Braidwood Station, Units 1 and 2 – approved February 20, 2003
- Surry Power Station, Units 1 and 2 – approved December 10, 2002
- Salem Nuclear Generating Station, Units 1 and 2 – approved October 10, 2002
- North Anna Power Station, Units 1 and 2 – approved October 1, 2002
- H. B. Robinson Steam Electric Plant, Unit 2 – approved September 19, 2002
- Clinton Power Station, Unit 1 – approved March 28, 2002
- Perry Nuclear Power Plant, Unit 1 – approved June 29, 2000

9. REGULATORY COMMITMENTS

The following table identifies those actions committed to by NMPNS in this submittal. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

| REGULATORY COMMITMENT | DUE DATE |
|--|---|
| To reduce the potential for corrosion product generation, the method for stroke testing the drywell spray system isolation valves will be revised to ensure that the drywell spray system remains dry. | Prior to implementation of the license amendment. |

ATTACHMENT (2)

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGES (MARK-UP)

TS Page

3.6.1.6-2

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---------------------|
| SR 3.6.1.6.1 Verify each RHR drywell spray subsystem manual and power operated valve in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position. | 31 days |
| SR 3.6.1.6.2 Verify, by administrative means, that each required RHR pump is OPERABLE. | 92 days |
| SR 3.6.1.6.3 Verify each drywell spray nozzle is unobstructed. | 10 years |

~~10 years~~



Following maintenance that could result in nozzle blockage

ATTACHMENT (3)

**CHANGES TO TECHNICAL SPECIFICATION
BASES (MARK-UP)**

The current version of the following Technical Specifications Bases page has been marked-up by hand to reflect the proposed changes. This Bases page is provided for information only and does not require NRC approval.

B 3.6.1.6-4

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.6.1.6.1 (continued)

probability of an event requiring initiation of the system is low, and the system is a manually initiated system. This Frequency has been shown to be acceptable based on operating experience.

SR 3.6.1.6.2

Verifying, by administrative means, that each required RHR pump is OPERABLE ensures that the RHR pump is capable of performing its intended function (i.e., capable of developing the assumed drywell spray flow rate) when in the drywell spray mode. This Surveillance is met by verifying that another required Surveillance, which demonstrated the RHR pump OPERABILITY, was performed within the required Frequency. The verification can be performed by examining logs or other information, to determine if a required RHR pump is out of service for maintenance or other reasons. It is not necessary to perform an additional Surveillance needed to demonstrate the OPERABILITY of the required RHR pumps. The Frequency of 92 days is consistent with the normal RHR pump flow rate Surveillance Frequency ("in accordance with the Inservice Testing Program") in other Surveillances.

SR 3.6.1.6.3

This Surveillance is performed every 10 years to verify by performance of an air flow test that the spray nozzles in the drywell spray spargers are not obstructed and that flow will be provided when required. The 10 year Frequency is adequate to detect degradation in performance due to the passive nozzle design and its normally dry state and has been shown to be acceptable through operating experience.

Insert B1



Insert B2

REFERENCES

1. USAR, Section 6.2.1.1.3.
 2. USAR, Section 6.2.5.2.1.
 3. 10 CFR 50.36(c)(2)(ii).
-

INSERT B1

following maintenance that could result in nozzle blockage

INSERT B2

As an alternative, a visual inspection (e.g., boroscope) of the nozzles or piping could be utilized in lieu of an air test if a visual inspection is determined to provide an equivalent or more effective post-maintenance test. A visual inspection may be more effective if the potential for material intrusion is localized and the affected area is accessible. Maintenance that could result in nozzle blockage would be those maintenance activities on loops A or B of the RHR system where the Foreign Material Exclusion program controls were deemed ineffective. For activities such as valve repair/replacement, a visual inspection would be the preferred post-maintenance test since small debris in a localized area is the most likely concern. An air test may be appropriate following an event where a large amount of debris potentially entered the system or water was actually discharged through the spray nozzles. The