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Constellation Energy

• Nine Mile Point Nuclear Station

January 5, 2007

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

ATTENTION: Document Control Desk

SUBJECT: Nine Mile Point Nuclear Station
Unit No. 1; Docket No. 50-220

License Amendment Request: Proposed Revision to Control Rod System
Surveillance Requirements, Technical Specification 4.1.1 –
Response to NRC Request for Additional Information (TAC No. MD3360)

- REFERENCES:**
- (a) Letter from T. J. O'Connor (NMPNS) to Document Control Desk (NRC), dated October 19, 2006, License Amendment Request Pursuant to 10 CFR 50.90: Revision to Control Rod System Surveillance Requirements – Technical Specification 4.1.1
 - (b) Letter from T. G. Colburn (NRC) to T. J. O'Connor (NMPNS), dated December 7, 2006, Request for Additional Information (RAI) for the Nine Mile Point Nuclear Station, Unit No. 1 (NMP1) License Amendment Request (LAR) to Revise Technical Specification (TS) 4.1.1, "Control Rod System" (TAC No. MD3360)

Nine Mile Point Nuclear Station, LLC (NMPNS) hereby transmits supplemental information requested by the NRC in support of a previously submitted application for amendment to Nine Mile Point Unit 1 (NMP1) Renewed Operating License DPR-63. The initial application, dated October 19, 2006 (Reference a) proposed revisions to the surveillance requirements in NMP1 Technical Specification 4.1.1, "Control Rod System," associated with control rod scram time testing. The supplemental information is provided in Attachment (1) to this letter to respond to the request for additional information documented in the NRC letter dated December 7, 2006 (Reference b). This supplemental information does not affect the No Significant Hazards Consideration analysis provided by NMPNS in Reference (a).

Pursuant to 10 CFR 50.91(b)(1), NMPNS has provided a copy of this supplemental information to the appropriate state representative.

AC001

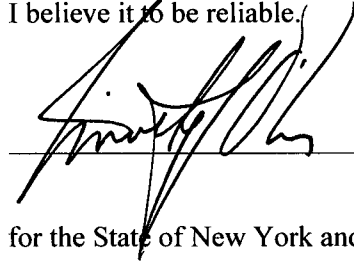
Should you have any questions regarding the information in this submittal, please contact M. H. Miller, Licensing Director, at (315) 349-5219.

Very truly yours,



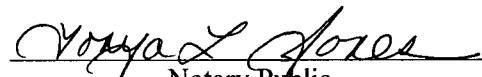
STATE OF NEW YORK :
: TO WIT:
COUNTY OF OSWEGO :

I, Timothy J. O'Connor, being duly sworn, state that I am Vice President Nine Mile Point, and that I am duly authorized to execute and file this supplemental information 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 5th day of January, 2007.

WITNESS my Hand and Notarial Seal:



Notary Public

My Commission Expires:

11/12/2010

Date

TONYA L. JONES
Notary Public in the State of New York
Oswego County Reg. No. 01JO6083354
My Commission Expires 11/12/2010

TJO/DEV/kms

Attachments: (1) Nine Mile Point Unit 1 – Response to NRC Request for Additional Information (RAI)

cc: S. J. Collins, NRC
D. V. Pickett, NRC
Resident Inspector, NRC
J. P. Spath, NYSERDA

ATTACHMENT (1)

**NINE MILE POINT UNIT 1
RESPONSE TO NRC REQUEST FOR
ADDITIONAL INFORMATION (RAI)**

ATTACHMENT (1)
NINE MILE POINT UNIT 1
RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION (RAI)

This attachment provides Nine Mile Point Nuclear Station, LLC (NMPNS) responses to the request for additional information (RAI) documented in the NRC letter dated December 7, 2006. Each NRC request is repeated (in italics), followed by the NMPNS response.

1.0 Control Rod System (CRS) Performance Reliability

In order to evaluate the request to scram time test at least 20 control rods every 180 days, past CRS scram function performance should be demonstrated to determine that the scram function reliability has not deteriorated. Therefore, please provide historical scram time data in terms of relevant test results for multiple operating cycles and a description of significant changes in hardware or testing practices that relate to the validity of the data for current plant operation.

Response

The Nine Mile Point Unit 1 (NMP1) Technical Specifications (TS) currently do not require periodic control rod scram time testing (STT). TS 4.1.1.c requires all operable control rods to be scram time tested after each major refueling outage and prior to power operation with reactor pressure above 800 psig. In addition, the mean 90% insertion time is determined for eight selected rods following each reactor scram from rated pressure, and STT is performed for eight selected rods following any outage not initiated by a reactor scram. The results of control rod insertion time testing performed in accordance with these TS requirements have shown the control rod scram rates to be reliable. From March 1995 to August 2005, NMPNS conducted a total of approximately 1200 individual control rod scram time tests. Twenty (20) tests were identified for which the results were not within one or more of the TS-required maximum scram insertion time limits (i.e., "slow"); however, for all of these 20 tests, the 90% scram insertion time limit of 5.30 seconds was met. Examination of these test results indicates that the majority of the test failures were attributable to two specific generic issues, as follows:

1. Over the period from 2001 to 2003, the hydraulic control unit (HCU) to scram header stop check valves were replaced for all 129 control rods due to degradation of the valve seats. Nine control rod scram time test failures were experienced following installation of the replacement valves. Investigation determined that the replacement valve manufacturer (Conval) had supplied valves that did not meet specified minimum flow coefficient (C_v) requirements. This issue was reported to the NRC by Conval, Inc. in a 10 CFR Part 21 report (2001-20-0 dated May 23, 2001). The Conval valves were subsequently modified to increase the C_v to meet design requirements. Post-maintenance testing verified that the scram time test results were acceptable for the nine control rods that had previously been "slow."
2. During 2003, there were five control rod scram time test failures that were attributed to aging of scram solenoid pilot valve (SSPV) exhaust diaphragms composed of Buna-N material. The SSPV exhaust diaphragms for all 129 control rods were replaced in 2003 with diaphragms composed of Viton 515A/B material. Post-maintenance testing verified that the scram time test results were acceptable for the five control rods that had previously been "slow."

The remaining six test failures occurred during the 1995 to 2001 time period and resulted from miscellaneous causes such as control rod drive mechanism (CRDM) seal degradation or inadequate CRDM venting.

ATTACHMENT (1)
NINE MILE POINT UNIT 1
RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION (RAI)

NMPNS does not consider the STT failures resulting from the two generic issues identified above to be representative of current control rod system performance. No "slow" rods have been identified during STT performed since correction of the HCU to scram header stop check valves deficiency and replacement of the SSPV exhaust diaphragms. Based on these recent STT results, NMPNS is confident that future STT results will continue to demonstrate that the control rod system is highly reliable. Any type of new generic problem would likely be detected by the STT performed for all control rods at each refueling outage. In addition, any maintenance on or modification to the control rod system that could affect scram insertion times must be followed by post-maintenance testing before declaring the control rod operable.

The October 19, 2006 license amendment request proposes to add a new requirement to periodically test 20 control rods, on a rotating basis, every 180 days during the operating cycle. This additional testing will provide further assurance that control rods are performing as expected and within the limits prescribed by the plant safety analysis.

2.0 Standard Technical Specification (STS) Surveillance Requirement (SR) 3.1.4.3

In the STSs, SR 3.1.4.3 states: "Verify each affected control rod scram time is within the limits of Table 3.1.4-1 with any reactor steam dome pressure" prior to declaring control rod operable after work on control rod or CRS that could affect scram time. The licensee's October 19, 2006, LAR states that as a precedent, "the proposed change to the STT [scram time testing] SR is consistent with a similar change for Oyster Creek Generating Station (Amendment 249)," however, the Oyster Creek LAR included an SR change similar to STS SR 3.1.4.3. Please provide the basis for not proposing an SR similar to STS SR 3.1.4.3 in the proposed NMP1 LAR.

Response

In the proposed changes to NMP1 TS 4.1.1 that are described in the NMPNS letter dated October 19, 2006, NMPNS has chosen to not include a surveillance requirement to perform STT of maintenance affected control rods at reactor pressures less than 800 psig (similar to Standard Technical Specification (STS) SR 3.1.4.3). Such depressurized testing could cause additional wear on control rod drive (CRD) system components and could cause additional, unnecessary strain on the CRD stub tubes. Rather than perform depressurized STT, NMPNS proposes to perform STT of maintenance affected control rods at greater than 800 psig reactor pressure prior to leaving them at a position other than fully inserted, consistent with existing practice. Such testing is more indicative of actual performance when the control rods are required to perform their safety function to shutdown the reactor, and ensures that control rod scram performance is acceptable at operating reactor pressure conditions. NMPNS considers this to be consistent with the Bases for STS SR 3.1.4.4, which notes that a control rod scram test at high pressure (e.g., during hydrostatic pressure testing) can satisfy both the low pressure (STS SR 3.1.4.3) and high pressure (STS SR 3.1.4.4) test criteria.

NMPNS acknowledges that the proposed TS changes described in NMPNS letter dated October 19, 2006 are not consistent with Oyster Creek Generating Station License Amendment 249 with regard to depressurized STT provisions. However, as noted in the NMPNS letter dated October 19, 2006, the proposed changes to the NMP1 TS regarding control rod STT are consistent with Oyster Creek Generating Station License Amendment 249 in (1) allowing STT of non-maintenance affected rods during power operations prior to exceeding 40% power, (2) replacing the requirement to test "eight selected rods" after a reactor scram or other outage by a new SR to perform periodic STT at a 180-day

ATTACHMENT (1)
NINE MILE POINT UNIT 1
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surveillance frequency, and (3) adding a requirement to determine the minimum critical power ratio (MCPR) operating limits following completion of control rod STT.