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ACCESSION NBR:9906110017 DOC.DATE: 99/06/04 NOTARIZED: NO DOCKET #
FACIL:50-397 WPPSS Nuclear Project, Unit 2, Washington Public Powe 05000397
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SUBJECT: Forwards response to NRC 990326 RAI re WNP-2 GL 96-05 program for periodic verification of design-basis capability of MOVs.

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June 4, 1999
GO2-99-103

Docket No. 50-397

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

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21, RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING GENERIC LETTER 96-05 PROGRAM AT WNP-2**

Reference: Letter dated March 26, 1999, JS Cushing (NRC) to JV Parrish (SS), "Request for Additional Information Regarding Generic Letter 96-05 Program at WNP-2"

In the referenced letter, the staff requested additional information regarding the Generic Letter 96-05 program at WNP-2. The requested information pertains to details of WNP-2's program for periodic verification of design-basis capability of motor operated valves. The Supply System's response to the request for additional information is enclosed as Attachment A.

Should you have any questions or desire additional information regarding this matter, please call me at (509) 377-4342.

Respectfully,

DW Coleman
Manager, Regulatory Affairs
Mail Drop PE20

Attachment

110003

cc: EW Merschoff - NRC-RIV
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NRC Question 1

In NRC Inspection Report No. 50-397/96-04, the NRC staff closed its review of the motor-operated valve (MOV) program implemented at Washington Nuclear Project 2 (WNP-2) in response to Generic Letter (GL) 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance." In the inspection report, the NRC staff discussed certain aspects of the licensee's MOV program to be addressed over the long term. For example, the inspectors noted that the licensee agreed to (1) review the NRC staff's safety evaluation of Electric Power Research Institute (EPRI) MOV Performance Prediction Model (PPM); (2) revise operability determination procedures to ensure that GL 89-10 performance parameters are used; and (3) increase the torque switch setting for MOV HPCS-V-15. The licensee should address these long-term aspects of the MOV program at WNP-2 noted in the NRC inspection report.

Long term aspect 1

Perform a review of the NRC's Safety Evaluation of the Electric Power Research Institute (EPRI) MOV Performance Prediction Model (PPM).

Supply System Response

We have reviewed the NRC's Safety Evaluation of the EPRI PPM. Calculations have been performed to demonstrate the design basis capability of MOV's in the GL 89-10 program which are not practical to test under worst case design basis conditions. These calculations use the EPRI PPM in accordance with the NRC's Safety Evaluation. The EPRI PPM default program coefficients and vendor certified dimensional data were used in each calculation in order to bound the disk-to-seat friction under design basis conditions. The results of these calculations indicate adequate capability for each of the MOV's to perform their design basis function.

Long term aspect 2

Revise Operability Determination procedures to ensure that GL 89-10 performance parameters are used.

Supply System Response

MOV operability determinations are performed at WNP-2 in accordance with Engineering Standard MES-10. The standard was revised on June 5, 1998 to incorporate GL 89-10 performance parameter criteria for valve factor, stem factor degradation, packing loads, rate of loading, and degraded voltage into the operability determination instructions. These performance parameters are used to evaluate test results in specific cases where the required minimum thrust is not obtained or when testing indicates that the minimum thrust setpoint should be changed.

Long term aspect 3

Increase the torque switch setting for HPCS-V-15.

Supply System Response

The torque switch setting for motor operator HPCS-MO-15 was increased on April 26, 1996 to provide increased closing thrust margin to meet the maximum expected differential pressure. HPCS-MO-15 is capable of performing its design safety function.

NRC Question 2

In a letter dated March 13, 1997, the licensee committed to implement the Joint Owners Group (JOG) Program on MOV Periodic Verification in response to GL 96-05. In this letter, the licensee states that MOV static diagnostic test frequencies normally exceed five years. In the NRC safety evaluation dated October 30, 1997, on Boiling Water Reactor Owners Group (BWROG) Topical Report NEDC-32719 describing the JOG program, the NRC staff stated that MOVs with scheduled test frequencies beyond five years will need to be grouped with other MOVs that will be tested on frequencies less than five years in order to validate assumptions for the longer test intervals. The NRC staff stated that this review must include both valve thrust (or torque) requirements and actuator output capability. The licensee should describe how its MOV static diagnostic testing program will satisfy this condition of the NRC safety evaluation.

Supply System Response

WNP-2 is grouping actuators and selecting a sample from each group to test at frequencies of less than 5 years in order to conform with the conclusions in the Staff's October 30, 1997 safety evaluation regarding actuator degradation and static testing frequencies greater than 5 years. The data from these tests will be analyzed to ensure valve thrust requirements and actuator output capability is maintained. This testing will also provide the empirical data necessary to evaluate longer test frequencies in the future. The changes in testing frequencies will be incorporated into the WNP-2 MOV Periodic Verification Program Plan. WNP-2 will complete grouping the actuators for testing by September 30, 1999 and test the sample valves from each group by the end of refueling outage R-15.

NRC Question 3

The licensee's MOV periodic verification program scope was revised to include safety-related test return MOVs that are assumed to be capable of returning to their safety position when placed in a position that prevents their safety system (or train) from performing its safety function. The licensee noted that these MOVs will be diagnostically tested after major maintenance and will be exercised during plant surveillance tests. The JOG MOV Periodic Verification Program consists of three phases: (1) the interim MOV static diagnostic testing program; (2) an MOV dynamic testing program over the next 5 years; and (3) the long-term periodic test program. The NRC staff considers a licensee's commitment to the JOG program to include all three phases unless otherwise specified. Where a licensee that has committed to implement the JOG program proposes to implement a different approach, the licensee will be expected to notify the NRC and to provide justification for the proposed alternative approach.

The licensee's letter of March 13, 1997 implies that the JOG long-term program might not be followed for the test return MOVs that were added to the GL 96-05 program scope. Further, in IR 96-04, the NRC inspectors noted that test return MOVs had not been included in the GL 89-10 program scope at WNP-2. The licensee should clarify its commitment to the JOG program or justify its long-term periodic verification program for any test return MOVs that will not follow the JOG program recommendations, including plans to demonstrate the capability of those MOVs to return to their safety position.

Supply System Response

WNP-2 agrees with the Staff that a commitment to the JOG program includes all three phases of the program unless otherwise specified. When MOVs that were not included in the GL 89-10 program are added to the GL 96-05 Periodic Verification (PV) program, all three phases of the JOG program are implemented for the MOVs provided they are represented in the population of JOG valves being dynamically tested. Each valve that is added to the program is also qualified in accordance with the WNP-2 GL 89-10 program. Three safety related test return MOVs have been added to the GL 96-05 PV program. These test return valves are assumed capable of returning to their safety position when placed in a position that prevents their associated system from performing its safety function. These valves are represented in the JOG population and during the interim period (phase 1) will be tested as required by the GL 96-05 PV program. The valves will also be qualified in accordance with the WNP-2 GL 89-10 program by the end of refueling outage R-15. Each of these three valves (HPCS-V-23, LPCS-V-12 and RHR-V-21) are demonstrated operable on a quarterly basis during the system's In Service Testing surveillance where each of these valves are stroked open against pump head pressure and stroked closed against full flow.

WNP-2 declares the associated safety system inoperable when opening test return valves that are not qualified in accordance with the WNP-2 GL 89-10 program.

NRC Question 4

The licensee's MOV periodic verification program stated that new diagnostic technologies that monitor MOV performance at the motor control center (MCC) may be used, as appropriate. The licensee should briefly describe its plans for the use of test data from the motor control center (MCC) including (1) correlation of new MCC test data to existing direct force measurements; (2) interpretation of changes in MCC test data to changes in MOV thrust and torque performance; (3) consideration of system accuracies and sensitivities to MOV degradation for both output and operating performance requirements; and (4) validation of MOV operability using MCC testing.

Supply System Response

The Supply System is closely following the development and initial application of MCC based testing. Because the adoption of this test methodology by the industry is in a preliminary stage, the Supply System has not analyzed use of the MCC test data to the level of detail described in NRC Question 4. These details of MCC testing will be

delineated as industry acceptance and NRC approval progress. WNP-2 does not currently employ this test methodology. The JOG is currently drafting a position paper on the potential use of this test methodology to meet current JOG program static testing requirements. As more industry experience and information become available we expect it to validate assumptions that performing MCC based testing will increase the effectiveness of MOV programs, as well as reduce dose expenditures and maintenance errors by using this less intrusive test method.

NRC Question 5

The JOG program focuses on the potential age-related increase in the thrust or torque required to operate valves under their design-basis conditions. In the NRC safety evaluation dated October 30, 1997, on the JOG program, the NRC staff specified that licensees are responsible for addressing the thrust or torque delivered by the MOV motor actuator and its potential degradation. The licensee should describe the plan at WNP-2 for ensuring adequate ac and dc MOV motor actuator output capability, including consideration of recent guidance in Limitorque Technical Update 98-01 and its Supplement 1.

Supply System Response

The plan for ensuring adequate ac and dc MOV motor actuator output capability in consideration to Limitorque Technical Update 98-01 and its Supplement 1 has three phases: 1) Evaluate ac motor actuators to the method described in Limitorque Technical Update 98-01 and its Supplement 1. 2) Revise ac motor actuator setpoint calculations. 3) Evaluate and revise dc motor actuator setpoint calculations. The first phase of this plan has been completed. The second and third phases will be completed by February 28, 2000. Until Limitorque provides specific guidance for evaluating dc motor actuators, these calculations are being revised to incorporate a 0.9 application factor.