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SUBJECT: Suppls 910916 response to violations & deviations noted in
 Insp Rept 50-397/91-16. Corrective actions: engineering std
 for design basis review of motor-operated valves will be
 revised re differential pressure testing.

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December 6, 1991
G02-91-223

Docket No. 50-397

U. S. Nuclear Regulatory Commission
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Gentlemen:

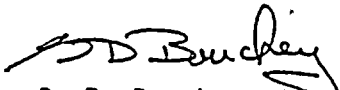
Subject: NUCLEAR PLANT NO. 2, OPERATING LICENSE NPF-21
SUPPLEMENTAL RESPONSE TO NRC INSPECTION REPORT 91-16,
MOTOR OPERATED VALVE TESTING

- References:
1. Letter, RP Zimmerman (NRC) to GC Sorensen (SS), "NRC Inspection of Washington Nuclear Plant No. 2," Inspection Report 91-16, dated August 16, 1991
 2. Letter, G02-91-167, GC Sorensen (SS) to NRC, "NRC Inspection Report 91-16, Response to Notice of Violation, Response to Notice of Deviations," dated September 16, 1991
 3. Letter, RP Zimmerman (NRC) to AL Ossen (SS), dated November 25, 1991

In Reference 2 the Supply System provided responses to a Notice of Violation and a Notice of Deviation contained in the subject Inspection Report. Additionally, responses to other concerns identified in the Inspection Report were also provided as requested.

Based on discussions with members of the NRC staff, it is apparent that further detail is required regarding our Motor Operated Valve (MOV) Program Plan. The Attachment to this letter provides supplemental information to clarify our previous response and to respond to additional NRC concerns which were not addressed in that response.

Very truly yours,


G. D. Bouchey, Director
Licensing & Assurance

cc: JB Martin - NRC RV
NS Reynolds - Winston & Strawn
PL Eng - NRR

DL Williams - BPA - 399
NRC Site Inspector - 901A

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ATTACHMENT

1. (a*) Plant specific procedures not reviewed in Design Basis Review (DBR)

The Supply System will revise its Engineering standard for MOV Design Basis Reviews. The new standard will require the review of normal operations, abnormal operations, surveillance testing and emergency operating procedures to ensure appropriate conditions are specified as the basis for differential pressure testing. Where BWR owners group values for maximum differential pressure are used, the above procedures will be reviewed to ensure that the BWR values bound the operating conditions that might be seen at the valves.

2. (b*) No consideration of rate of loading.

The WNP-2 MOV Program Plan is being revised as part of the Supply Systems effort to strengthen MOV performance. The revised Program Plan will include a discussion of the rate of loading issue. The Engineering Standard for operator sizing, however, will not specifically address the rate of loading issue until it is better understood, through industry initiatives, and can be effectively quantified.

3. (c*) Jumpers are not controlled on Master Data Sheets (MDS)

Where jumpers are used they are included in the top tier elementary diagram for the valve. When a torque switch is jumpered, this modification is a plant design change and the elementary diagram is changed as part the formal design change process to reflect the addition of the jumper.

4. (d*) Diagnostic accuracy not verified.

The Supply System is aware of questions related to the accuracy of MOVATS test equipment as used at WNP-2. We have been actively following this issue by attending meetings held on the subject in Atlanta on October 17, 1991 and the MOVATS presentation to the NRC on October 29, 1991. We feel it is too early to determine the effects of the test equipment accuracy on previous testing. We will review Motor Operated Valve Users Group (MUG) and MOVATS results when they are finalized and released to the industry. In the meantime, we are reviewing alternate testing techniques which may provide enhanced reliability in testing.

5. (a*) Differential Pressure Testing at less than full differential pressure does not satisfy Generic Letter 89-10 recommendations.

The Supply System recognizes that differential pressure testing at less than expected worst case differential pressure will require additional testing, analysis or justification to meet the intent of Generic Letter 89-10. Each valve tested at less than full differential pressure will be specifically identified and justification documented to ensure the valve will operate under expected plant conditions. At this time, the differential pressure testing program at WNP-2, and in the industry as a whole, is not sufficiently developed to give a definitive answer as to what additional actions may need to be taken to ensure adequate margin is provided for each MOV. Some of the assumptions that we are currently using may need to be reevaluated as discussed in 1 and 2 above.

6. (b*) Effects of high ambient temperatures on DC motors.

During the development phase, the motor manufacturer evaluated the effects of higher than normal ambient temperatures on DC motor performance. For motors rated at greater than 100 foot-pounds or less than 40 foot pounds, the motors are acceptable up to 340 degrees fahrenheit. For motors with a nominal starting torque rating in the 40-100 foot-pound range, a derated value is provided that is good up to 340 degrees fahrenheit. These derated values are used in the motor sizing evaluation at WNP-2.

7. (c*) Thermal Overloads

MOV thermal overload devices for safety related valves at WNP-2 are sized as described in the WNP-2 FSAR and Reference 2. In addition, as part of the evaluation for each valve we will assure that the thermal overload chosen will allow the motor to stroke the valve, in its safety-related direction: 1) at the torque expected during maximum differential pressure; 2) at the expected motor ambient temperature conditions; 3) with the expected motor temperature rise during operation; and 4) with a concurrent degraded voltage. This methodology will provide additional assurance that the overload devices in use will not prevent successful completion of the safety function and will preclude spurious trips. The licensing basis for WNP-2 requires that the safety-related MOV thermal overload devices not prevent the valves from performing their safety function. One accepted method to achieve this goal is to bypass the overloads during operation and to use them for valve testing only. The WNP-2 design meets the licensing basis while still providing some measure of motor protection that would not be available using the bypass technique.

* These numbers are taken from Reference 3.