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SUBJECT: Forwards addl info re issuance of Amend 119 to License NPF-21 re TS 3/4.3.2. "Isolation Actuation Instrumentation Response Time Testing."

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December 20, 1993
GO2-93-294

Docket No. 50-397

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

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21, ADDITIONAL INFORMATION RELATIVE TO THE ISSUANCE OF AMENDMENT NO. 119 TO THE LICENSE CONCERNING TECHNICAL SPECIFICATION 3/4.3.2, ISOLATION ACTUATION INSTRUMENTATION RESPONSE TIME TESTING**

References:

1. Letter, GO2-93-241, JV Parrish (SS) to NRC, "Request for Discretionary Enforcement for Technical Specification 3/4.3.2, Isolation Actuation Instrumentation," dated October 2, 1993

2. Letter, GO2-93-242, JV Parrish (SS) to NRC, "Request for Amendment to Technical Specification 3/4.3.2, Isolation Actuation Instrumentation Response Time Testing Under Emergency Circumstances," dated October 2, 1993

3. Letter, JW Clifford (NRC) to JV Parrish (SS), "Issuance of Amendment No. 119 to Facility Operating License NPF-21 for the Washington Public Power Supply System (WPPSS) Nuclear Project No. 2 (TAC No. M87833)," dated October 15, 1993

4. Letter, GO2-93-271, JV Parrish (SS) to NRC, "Request for Discretionary Enforcement for Technical Specification 3/4.3.2, Isolation Actuation Instrumentation" dated November 17, 1993

ADDITIONAL INFORMATION RELATIVE TO THE ISSUANCE OF AMENDMENT NO. 119 TO THE LICENSE CONCERNING TECHNICAL SPECIFICATION 3/4.3.2, ISOLATION ACTUATION INSTRUMENTATION RESPONSE TIME TESTING

References 1 and 2 requested enforcement discretion and a Technical Specification change (on an emergency basis) relative to the requirement for testing response times of actuation channels for containment isolation valve groups 3 and 4. Reference 3 granted the requested change for a one-time extension by amending the response time testing requirements for these two groups to the next cold shutdown or no later than the Spring 1994 Refueling Outage. A note was added on page 3/4 3-11 of the Technical Specifications allowing continued operation without testing and thereby without entry for inoperability into Action Statements 20 and 25 requiring plant shutdown and Standby Gas Treatment System operation.

The purpose of this letter is to inform the Staff that during further investigation of the response time testing performed for the Traversing In-Core Probe (TIP), Equipment Drains-Radioactive (EDR) and Floor Drains-Radioactive (FDR) valve isolations, additional logic paths for the isolation actuation logic for group 4 were identified that had not previously been adequately response time tested. These logic paths have characteristics different from those described in references 1 and 2. With these identified differences and the fact that the one-time extension granted in reference 3 was based, in part, on the descriptions provided in references 1 and 2, this letter is submitted to provide additional information relative to the one-time extension granted by reference 3.

The Supply System believes providing this additional information is prudent even though the present one-time extension granted by reference 3 is considered to encompass all aspects of groups 3 and 4 response time testing.

As reported in references 1 and 2, a condition of nonconformance with WNP-2 Technical Specifications was identified as part of a systematic review of plant procedures where it was determined that certain relays providing actuation signals to Group 3 and 4 isolation valves were not being response time tested as required by Surveillance Requirement 4.3.2.3. The condition of nonconformance was identified by the Technical Specification Surveillance Improvement Project (TSSIP). As stated in reference 1, because the TSSIP is an in-depth technical review of the surveillance procedures to ensure that they meet the Technical Specification surveillance requirements, other conditions of nonconformance with the WNP-2 Technical Specifications may be identified in the future.

<u>Description of Previous Condition</u>

References 1 and 2 stated that portions of the automatic isolation actuation logic were not being response time tested. The specific components identified as not response time tested were the final actuation electro-mechanical relays for a portion of isolation groups 3 and 4 (these relays did not actuate other group isolations) which are actuated in turn from the Reactor Low Water Level 2, High Drywell Pressure, or Reactor Building Vent Exhaust Plenum High Radiation

relays. References 1 and 2 further stated that the existing response time testing procedures measured the system response time from the sensed parameter through two (out of a total of nine in two channels and out of a total of ten in the other two channels) relays per channel at the appropriate level of the system logic per division.

Description of Recent Condition

At the time of discovery of the reference 1 and 2 conditions, the effort to identify the entire range of isolation actuation logic not being tested concentrated primarily on similar omissions of testing in groups 3 and 4. It was not known at that time that a portion of the valves within group 4 contained further omissions in their response time testing. The review conducted at that time was limited to application of this segment of relay logic and whether any associated problems existed. Consequently, the current identification of additional deficiencies in different segments of the logic were not identified at that time.

The identification of logic paths different from those described in references 1 and 2 was recognized during further review of specific group 4 components. During this review, it was determined that the existing response time testing procedures did not measure the entire response time from sensor actuation to final device for some of the group 4 valves. Specifically, the interval not measured was a portion of the time from sensor relay coil deenergization to final associated contact operation in the operating logic of the subject valves. This affected a portion of, but not all of the valves in group 4. The affected portion of group 4 and their associated maximum isolation times were as follows:

Isolation Valves		Valve Time
Equipment Drain Valves	(EDR-V-19 & 20)	15 seconds
Floor Drain Valves	(FDR-V-3 & 4)	15 seconds
Traversing Incore Probe Isolation Valves	(TIP-V-1,2,3,4,5 & 15)	5 seconds

The components identified in the additional logic paths are General Electric HFA and Agastat relays. While these relays are of a different type than the ASEA relays described in references 1 and 2, they are of the same type as described in the reference 4 request for enforcement discretion relative to isolation groups 2, 5, 7, 8 and 9.

In reference 4, relative to the General Electric HFA Agastat relays, the Supply System stated:

"There is no identified mechanism for significant degradation of the relay dropout times. In addition, these relays have demonstrated reliable performance during functional testing. This effectively demonstrates the relays actuate. Since no mechanism has been identified for degrading dropout times, it can be concluded that the "actuated" relay will perform its function consistent with existing data. Qualification data for Agastat relays indicate expected dropout times of less than 94 milliseconds. This data has been subsequently confirmed by response time testing at WNP-2. Dropout times for HMA and HFA relays have been observed to be around 50 milliseconds (Reference Mil. NO. 82-12, 1982). Comparing these expected values to the remaining time available for the required actuation response times provides reasonable assurance the Technical Specification response times will be met.

The Supply System has performed an industry event review of HFA, HMA and Agastat relays. A search of the WNP-2 OER files, Nuclear Plant Reliability Data System (NPRDS) database and INPO Operating Experience was performed. A single failure has been identified in the NPRDS database which potentially impacts Agastat dropout times. However, considering the total industry operating hours of experience with these relays, a single failure is considered an insignificant risk in comparison to the risk of a relay failure during the 96 hour extension requested to test the affected relays. In addition, WNP-2 has contacted the utility that reported this failure and is attempting to understand the failure mechanism. No further information indicating problems with the dropout times of the subject relays was discovered. Further, a review of Supply System maintenance history did not identify any concerns with the HFA, HMA and Agastat relays that would impact their response time."

These statements are also valid for the General Electric HFA and Agastat relays involved with this recently identified issue.

Current Status

This situation was discussed by telephone conference call with the NRC NRR and Region V on December 17, 1993 in which the above information was summarized. The fact that failure to test the General Electric HFA and Agastat relays for group isolation was not addressed in references 1 and 2 was emphasized by the Supply System. It was pointed out, however, that the expected performance of these types of relays in terms of their dropout times was addressed in the reference 4 request for enforcement discretion for the group 2, 5, 7, 8 and 9 relays.

ADDITIONAL INFORMATION RELATIVE TO THE ISSUANCE OF AMENDMENT NO. 119 TO THE LICENSE CONCERNING TECHNICAL SPECIFICATION 3/4.3.2, ISOLATION ACTUATION INSTRUMENTATION RESPONSE TIME TESTING

It was stated by the Supply System that the minimum margin remaining to achieve valve closure was about 1½ seconds which is long relative to the expected dropout times of about 100 ms. With this margin, it is believed that there is reasonable assurance the Technical Specification response times will be met.

It was also mentioned that a review had not been completed to establish if there may exist additional relays of a different type located in the TIP cabinets that might affect the closing time of the TIP valves.

It was stated that the Supply Systems planned to complete the response time testing while at power as it had been established that it would put the plant at no greater risk than exists for similar surveillances.

Subsequent to this phone call, the response time testing for the logic paths in question was satisfactorily completed on December 18, 1993. Please note, in preparing the response time tests for the TIP logic paths an additional relay, inside the TIP Valve Control Monitor (TIP cabinets) was identified that had not previously been response time tested. These were identified after the December 17, 1993 phone call. These relays are manufactured by Potter & Brumfield and were included in the testing reported as satisfactorily completed above.

Sincerely,

J. V. Parrish (Mail Drop 1023)
Assistant Managing Director, Operations

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