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SUBJECT: Application for amend to License NPF-21,requesting Tech Spec 3/4.3.2 re isolation actuation instrumentation response time testing under emergency circumstances.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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October 2, 1993
GO2-93-242

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
REQUEST FOR AMENDMENT TO TECHNICAL
SPECIFICATION 3/4.3.2, ISOLATION ACTUATION
INSTRUMENTATION RESPONSE TIME TESTING UNDER EMERGENCY
CIRCUMSTANCES**

References:

1. Letter, GO2-91-159, JW Baker (SS) to NRC dated August 29, 1991, "Licensee Report No 91-013-02"

2. Letter, GO2-93-202, JV Parrish (SS) to NRC dated August 6, 1993, "Licensee Event Report No 93-010-04"

3. General Electric Report NEDC-32013P, "System Analysis for Elimination of Selected Response Time Testing Requirements," dated March 1992 (proprietary)

4. 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

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90, 2.101, and 50.91(a)(5), the Supply System hereby submits a request for amendment to the WNP-2 Technical Specifications on an emergency basis as provided for in the regulations. Specifically, the Supply

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System is requesting that a note be added to Isolation Actuation Instrumentation Surveillance Requirement 4.3.2.3 to defer response time testing for Isolation Groups 3 and 4 as a criterion for Operability until entry into a Cold Shutdown condition no later than startup from the Spring 1994 Refueling Outage (Attachment 1).

The requested note will allow continued operation without entry into Action Statements 20 and 25 requiring plant shutdown and Standby Gas Treatment System operation. As reported in Reference 4, on October 1, 1993 a condition of noncompliance with WNP-2 Specifications was identified as part of a long term 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 4.3.2.3. Absent performance of the response time testing, Limiting Condition for Operation 3.3.2.b requires entry into the Action Statements listed in Table 3.3.2-1, Isolation Actuation Instrumentation which, in turn, require Plant shutdown and operation of the Standby Gas Treatment System. Further, Plant Staff determined that it is not desirable to perform response time testing of this instrumentation at power because of the potential for causing inadvertent relay actuation by physical contact or electrical shorting due to the tight configuration of the relay cabinet and the many temporary connections that must be made.

Until this issue was identified by the Technical Specification Surveillance Improvement Project, there was no reason to believe that the relays were not being response time tested in accordance with the Technical Specifications. As the lack of response time testing of these relays was just identified, it was not possible to submit this request on a more timely basis. It is considered to be less risk to defer the response time testing of these relays to the next Cold Shutdown condition instead of testing them at power. The Supply System believes there is less risk in relying on the existing test data than commencing a near term plant shutdown in order to gain actual test data immediately in cold shutdown conditions as required by the existing Technical Specifications.

It should be noted that, because the Technical Specification Surveillance Improvement Project is an in-depth technical review of the surveillance procedures to ensure they meet the Technical Specification surveillance requirements, other conditions of noncompliance with the WNP-2 Technical Specifications may be identified in the future.

Description of Condition

On October 1, 1993, a condition of noncompliance with the WNP-2 Technical Specifications was identified as part of the Technical Specification Surveillance Improvement Project. This two-year project was recommended by a Supply System Quality Action Team formed as a corrective action of LER 91-013-02 (Reference 1). The Technical Specification Surveillance Improvement Project revises and broadens the scope of the Surveillance Procedure Verification Program

completed in May 1991. Additional details of this program and previous findings are provided in LER 93-010-04 (Reference 2).

During the performance of the Technical Specification Surveillance Improvement Project review for compliance with the requirements associated with Technical Specification Surveillance 4.3.2.3 and Table 4.3.2.1-1, it was noted that portions of the automatic isolation actuation logic are not response time tested. The specific components identified as not response time tested are the final actuation electro-mechanical relays for a portion of isolation groups 3 and 4 (these relays do 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 (see attached figure). Refer to Technical Specification Table 3.6.3-1 for containment isolation group designations. The existing response time testing procedures measure 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. In each case, these two relays are parallel with, and of the same manufacturer and model type as the untested relays in each channel.

Compensatory Measures

The relays are located in cabinets in the Main Control Room where they are under control of the Shift Manager. This limits access to the cabinets thereby making the relays less susceptible to inadvertent damage or unobserved degradation.

There is no identified mechanism for significant degradation of the relay dropout time. As discussed below, response time testing of instrument strings using the model types of relays involved has confirmed the response time reliability of the relays in question. The Supply System is aware of Information Notice 92-05 pertaining to potential ABB RXMH-2 relay coil insulation breakdown concerns. However, this notice was reviewed as part of the Supply System Operating Experience Review Program and it was determined that no relays containing the manufacturing defect had been purchased. Furthermore, searches of the Nuclear Plant Reliability Data System and of Supply System maintenance history have not identified any other generic concerns.

Based upon the above, compensatory measures are not required.

Safety Basis for the Request

The Supply System has evaluated the relay design and its application at WNP-2 and has concluded that the testing performed, and the industry failure data on the actuation logic relays, is adequate to assure they will perform their intended safety function. Response Time Testing of these relays would not provide significant additional assurance that the relays would perform their intended safety function.

The need to perform response time testing is discussed in the plant Technical Specification Bases, which state:

> "Except for the MSIVs, the safety analysis does not address individual sensor response times or the response times of the logic systems to which the sensors are connected.... It follows that checking the valve speeds and the 13-second time for emergency power establishment will establish the response time for the isolation functions. However, to enhance overall system reliability and to monitor instrument channel response time trends, the isolation actuation instrumentation response time shall be measured and recorded as a part of the ISOLATION SYSTEM RESPONSE TIME."

Existing plant procedures in place that provide assurance that these relays will perform their required function include the following:

LOGIC SYSTEM FUNCTIONAL TEST (LSFT)-

This test is performed each annual refueling outage. The LSFT provides testing of the entire instrumentation and relay logic string from the sensor through the actuated component. The LSFTs provide periodic assurance that each of the relays will deenergize and contacts properly close as required to perform their safety function through the actuated components.

PARTIAL RESPONSE TIME TESTING OF PARALLEL RELAYS-

Existing response time testing procedures measure the system response time from the sensed parameter through two (out of a total of nine in two channels and out a total of ten in the other two channels) relays per channel at the appropriate level of the system logic per division. These two relays are in parallel with the untested relays in each channel and are the same model number (RXMH-2) from the same manufacturer (ASEA/COMBIFLEX) and are located in a similar manner in the same cabinets as the relays for that division which are not response time tested. The Supply System believes that the response time testing results (approximately 110 milliseconds dropout time) of the two relays, which are currently being tested, are representative of those which would be obtained from the testing of the untested relays. This provides assurance that the relays in each channel which are not response time tested will perform their required function within the Technical Specification limit.

CHANNEL FUNCTIONAL TEST (CFT)-

> This test verifies the correct function of the logic channel to these relays. A quarterly CFT verifies correct function of a logic channel by actuating half trip annunciators. The CFT does not test individual relays.

The affected relays, which have no time-delay feature, are electro-mechanical plunger-type with no dash pot or other dampening of the armature. Degradation for this type of relay is typically evidenced by failure to function, rather than degraded response times. Previous Supply System qualification tests performed on relays of the same manufacturer and model type have found dropout times to be approximately 110 milliseconds. There was no significant (less than 13 milliseconds) change in response time after equivalent thermal aging to 10 years and 27,000 actuation cycles. Response time testing for the tested in-plant relays (discussed above) has shown dropout times of approximately 110 milliseconds, which is consistent with the qualification test data. In addition, a review of industry data, discussions with the manufacturer, and WNP-2's own experience confirms the failure to function as the expected failure mode for these relays.

Response time testing is performed for each of the affected relay logic strings containing the untested relays. Response time testing is performed on the sensing device and actuated device portion of the actual logic strings. The parallel relays are the only actuating components in the logic circuits which are not tested. Thus, the response time of each logic circuit with the untested relays should behave consistent with the measured response times of the tested logic circuits with similar relays.

Based on the above, the Supply System believes that granting the requested Technical Specification change will not represent a significant safety issue. This is based on the observed failure modes of these relays, the scope of testing currently performed, the results of that testing, and the limited added assurance provided by response time testing in evaluating the ability of these relays to perform their safety functions.

Justification for the Period of Applicability

The relays and associated circuitry are located within two enclosures in the main control room. These cabinets contain a number of circuits providing isolation, emergency system actuation and electrical load shedding of non-safety related plant equipment. The circuitry is "deenergized-to-actuate". The implementation of these tests at power would require entering cabinets that are very restrictive and difficult to work within. This activity would require many repeated connections within these enclosures. The possibility of inadvertently shorting or grounding of leads and the possibility of mechanically agitating the relays exists. As a result, this could result in actuation or disabling of one or more key emergency systems and loss of normally

operating plant equipment leading to plant shutdown, further challenging plant systems and equipment.

No Significant Hazards Consideration

The Supply System has evaluated this request for an emergency Technical Specification change to defer consideration of response time testing for Groups 3 and 4 as part of system OPERABILITY until the first Cold Shutdown condition no later than startup from the Spring 1994 Refueling Outage. The Supply System has determined that the granting of this request will not represent a significant hazards consideration because it will not:

1) Involve a significant increase in the probability or consequences of an accident previously evaluated. The relays are accident mitigating features and are not considered in the initiating sequences for any accidents previously evaluated. The LSFTs performed to date have demonstrated functionality of the relays, there is no observed failure mode that has caused deterioration of the dropout time of these relays, and the dropout time of the relays should be the same as the response time tested relays. Thus, the relays and logic strings will perform as designed. Therefore, approval of the requested change will not result in a significant increase in the probability or consequences of an accident.

2) Create the possibility of a new or different kind of accident from any accident previously evaluated. No new modes of operation of any equipment, system configuration or initial conditions result from the lack of response time testing of the relays. Granting of the requested change will not affect initial conditions or introduce new system configurations, and, thus, will not create the possibility of a new or different kind of accident.

3) Involve a significant reduction in a margin of safety. As discussed above, the LSFTs performed to date have demonstrated functionality of the relays, there is no observed failure mode that has caused deterioration of the dropout time of these relays, and the dropout time of the relays should be the same as the response time tested relays. With no identified mechanism for increase in the relay dropout time, the design basis for primary and secondary containment isolation is maintained and there is no significant increase in a radiological release from primary or secondary containment .

Because the logic strings are considered to be capable of performing their safety function within the response times listed in the Technical Specifications, granting of this request does not represent a significant hazards consideration.

Environmental Considerations

As discussed above, the Supply System concludes that this request does not involve a significant hazards consideration, nor is there a potential for a significant change in the types or significant increase in the amount of any effluents that may be released offsite, nor does the request involve a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(C)(9) and, therefore, per 10 CFR 51.22(b), an environmental assessment of this change is not required.

Summary

The Supply System concludes that granting this request will involve minimum or no safety impact and represents a reduced risk to public health and safety over that associated with a potential plant shutdown.

This change has been approved by the WNP-2 Plant Operating Committee and the Supply System Corporate Nuclear Safety Review Board. In accordance with 10 CFR 50.91, the State of Washington has been provided a copy of this letter.

Sincerely,

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

AGH/ah

cc: Document Control Desk
NS Reynolds - Winston & Strawn
JW Clifford - NRC
DL Williams - BPA/399
NRC Site Inspector - 901A

STATE OF WASHINGTON)
)
COUNTY OF BENTON)

Subject: Request for Amend to TS 3/4.3.2
Isolation Actuation Instrumentation

I, J. V. PARRISH, being duly sworn, subscribe to and say that I am the Assistant Managing Director, Operations for the WASHINGTON PUBLIC POWER SUPPLY SYSTEM, the applicant herein; that I have the full authority to execute this oath; that I have reviewed the foregoing; and that to the best of my knowledge, information, and belief the statements made in it are true.

DATE 2 October, 1993

J. V. Parrish, Assistant Managing Director
Operations

On this date personally appeared before me J. V. PARRISH, to me known to be the individual who executed the foregoing instrument, and acknowledged that he signed the same as his free act and deed for the uses and purposes herein mentioned.

GIVEN under my hand and seal this 2nd day of October 1993.

Peggy L. Ledford
Notary Public in and for the
STATE OF WASHINGTON

Residing at Richland, WA

My Commission Expires June 30, 1994