



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 119 TO FACILITY OPERATING LICENSE NO. NPF-21
WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2
DOCKET NO. 50-397

1.0 INTRODUCTION

By letter dated October 2, 1993, Washington Public Power Supply System submitted a request for changes to the Technical Specifications (TS) for Nuclear Project No. 2 under emergency circumstances. The emergency circumstances are administrative in nature in that the TS changes were required earlier than the normal submittal and NRC response time could accommodate. During reviews of surveillance procedures the licensee determined that surveillances of actuation relays for containment isolation valves had not been performed adequately. In accordance with TS convention, this finding rendered the isolation relays inoperable. With inoperable isolation relays, TS require reactor shutdown within 36 hours.

The licensee concluded that there was reasonable assurance that the actuation relays and containment isolation valves were operable despite the inadequate surveillances. On October 1, 1993, the licensee requested discretionary enforcement of the TS to avert reactor shutdown. NRC staff agreed with the licensee and granted discretionary enforcement in time to avert reactor shutdown. The October 2, 1993, submittal to change the TS is the formal request to continue power operations with incomplete actuation relay surveillances.

2.0 EVALUATION

TS 4.3.2.3 requires that the isolation system response time of safety-related isolation trip functions be demonstrated to be within specified limits, once each 18 months. The purpose of such response time testing is to ensure that protective actions are performed within time limit values assumed in accident analyses. These analyses consider an allowable inventory loss between the time a LOCA occurs and the time the containment has isolated. These inventory losses in turn determine the allowable isolation system instrument response time and valve motion time. The concern for inventory loss is focused primarily on main Steam Isolation Valves. For other valves, such as the smaller valves affected by the proposed amendment, it is the staff's historical practice to neglect the inventory loss if the valves close in 15

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seconds or less (5 seconds for large vent/purge valves, and up to 60 seconds for certain smaller valves which do not connect to the containment atmosphere or reactor coolant system).

Isolation system response time testing is typically performed in a manner that tests various portions of the isolation system at the same time, the actual response time being the sum of the various tested portions. The portions tested include the sensor channel, the coincidence and actuator logics, and the associated valve or damper itself. For DC operated valves, a 3-second delay is assumed before the valve starts to move. For AC valves a 13-second delay, allowing for emergency diesel startup and loading, is assumed before valve motion begins. However, the faster-responding DC valve is assumed to fail (Ref.: WNP-2 BASES 3/4.3.2). In the course of a "Technical Specification Surveillance Improvement Project," the licensee discovered that its surveillance procedures for testing of containment isolation instrumentation do not encompass response time testing of a portion of the final actuation relays for Isolation Groups 3 and 4.

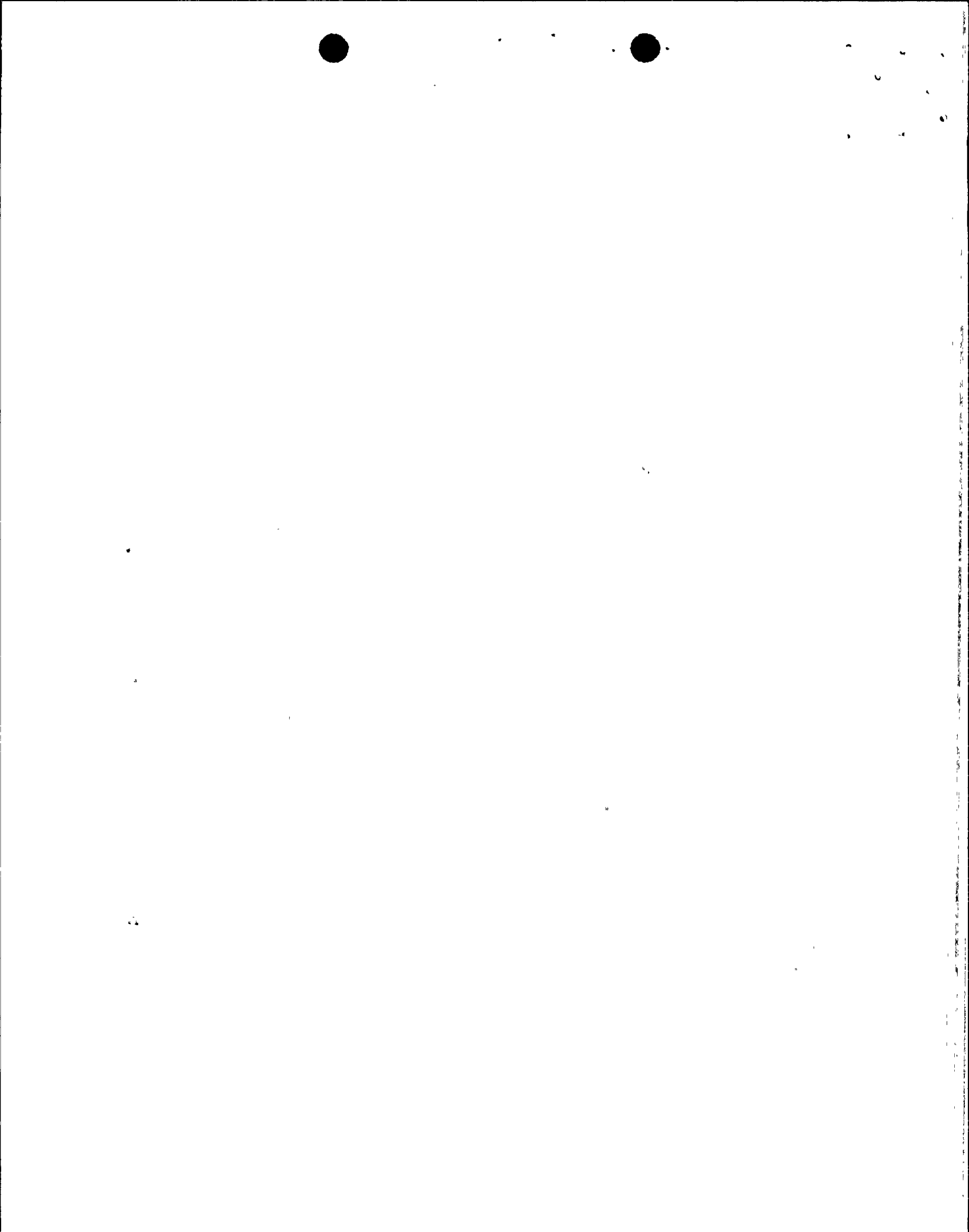
Isolation Groups 3 and 4 and their associated maximum isolation times are as follows:

Containment Purge and Exhaust Valves	4 seconds
Equipment Drain Valves	15 seconds
Floor Drain Valves	15 seconds
Fuel Pool Cooling/Supp Pool Cleanup	35 seconds
Reactor Recirculation Hydraulic Control	15 seconds
Traversing Incore Probe	5 seconds
Reactor Closed Cooling	60 seconds
Rad Monitor Sup & Ret	5 seconds

The isolation times noted above are valve actuation times, not isolation system response times.

The response time of logic relays and actuator relays and associated circuits is typically less than 100 milliseconds, whereas combined diesel startup delay and valve actuation delays may be 17 seconds or more. Due to the fact that the total protective action response time is dominated by diesel startup and valve motion, the response time of the logic and actuator relays is insignificant. Based on these characteristics, isolation instrumentation response time testing thus provides little additional assurance that releases of radioactive materials will be terminated within assumed time limits, and has virtually no effect on the calculated radiological consequences of postulated accidents.

A sufficiently high degree of assurance of instrumentation operability is provided by the logic system functional tests which verify that relays, coils, and contacts operate correctly. The licensee states that periodic logic functional tests have been performed in accordance with the TS.



Based on the above findings, the staff has determined that the licensee's application to defer response time testing of Isolation Groups 3 and 4 actuator relays until the next refueling outage is acceptable.

3.0 EMERGENCY CIRCUMSTANCES

The licensee is involved in a TS surveillance improvement project. This project includes detailed technical reviews of existing surveillance procedures to ensure that system surveillances meet TS requirements. This review identified that several actuation relays for containment isolation valves were not being tested adequately. The test deficiency consisted of an omission in the test procedure to check the relay response times of all relays. By definition, TS consider components and systems inoperable if adequate surveillances were not performed to confirm operability. Inadequately tested isolation relays rendered the relays, and the containment isolation valves that are actuated by these relays, inoperable. Under these conditions, TS require plant shutdown within 36 hours.

As discussed in this safety evaluation, even without testing, there is reasonable assurance that the relay response times are adequate; and there is minimal concern that operability of containment isolation valves is degraded. Safety risks involved with testing the relays while the reactor is at power or the inherent risks involved in reactor shutdown outweigh the benefits of verbatim compliance with TS requirements in this instance. On these bases the licensee requested, and the staff agreed, to resolve this issue through discretionary enforcement of the TS with a follow-up emergency amendment of the TS. The emergency amendment permits continued power operations without checking the relay response times until the next cold shutdown of the reactor.

At 9:00 AM PDT on October 1, 1993, the licensee identified that the isolation valve relay surveillance procedures were inadequate and requested discretionary enforcement. The NRC granted discretionary enforcement verbally at 3:40 p.m. on October 1, 1993. The follow-up request for an emergency amendment to the TS was received by NRC on October 2, 1992. The staff has concluded that the circumstances warrant issuance of an emergency amendment. As discussed in Section 4.0, the amendment does not involve a significant hazards consideration.

4.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission has made a final determination that the amendment involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92(c), this means that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The staff has evaluated the proposed changes against the above standards as required by 10 CFR 50.91 (a) and has concluded that:



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A. The change does not involve a significant increase in the probability or consequences of an accident previously evaluated (10 CFR 50.92(c)(1)) because containment integrity is verified by several complementary techniques. There is also reasonable assurance that the response time of the isolation valve actuation relays is acceptable and that there is no degradation in operability of the containment isolation valves.

B. The change does not create the possibility of a new or different kind of accident from any accident previously evaluated (10 CFR 50.92(c)(2)) because neither plant configuration nor the manner by which the facility is operated is affected.

C. The change does not involve a significant reduction in the margin of safety (10 CFR 50.92(c)(3)) because there is reasonable assurance that the operability of the containment isolation valves is not affected by this amendment.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Washington State official was notified of the proposed issuance of the amendment. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a surveillance requirement. We have determined that the amendment involves no increase in the amounts, and no change in the types, of any effluents that may be released offsite, and that there is no increase in individual or cumulative occupational radiation exposure. The staff has made a final determination that this amendment involves no significant hazards consideration. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment is required in connection with the issuance of the amendment.

7.0 CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: October 15, 1993

Principal Contributors: W. Long
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