



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

September 8, 1989

Docket No. 50-397

Mr. G. C. Sorensen, Manager
Regulatory Programs
Washington Public Power Supply System
P.O. Box 968
3000 George Washington Way
Richland, Washington 99352

Dear Mr. Sorensen:

SUBJECT: ISSUANCE OF AMENDMENT NO. 73 TO FACILITY OPERATING LICENSE
NO. NPF-21 - WPPSS NUCLEAR PROJECT NO. 2 (TAC NO. 74567)

The U.S. Nuclear Regulatory Commission has issued the enclosed amendment to Facility Operating License NPF-21 to the Washington Public Power Supply System for WPPSS Nuclear Project No. 2, located in Benton County near Richland, Washington. This amendment is in response to your letters dated September 5, 1989 (G02-89-152) and September 6, 1989 (G02-89-153).

This amendment revises Technical Specification Table 3.3.1-2, "Reactor Protection System Response Times," by changing the response time for Functional Unit 2.b Flow Biased Simulated Thermal Power - Upscale. Prior to the amendment request, the response time specified for this parameter was to be less than or equal to 0.09 seconds with a footnote which declared that this limit is "not including simulated thermal power time constant, 6 ± 1 seconds." As amended, the limit for the parameter is 6 ± 1 seconds and the footnote reads: "Including simulated thermal power time constant."

WNP-2 entered an action statement leading to plant shutdown on September 5, 1989 under the requirement of Technical Specification Section 3.3.1, and requested relief from the technical specification action statement. Relief was granted as indicated in our letter to you dated September 6, 1989. Because this amendment is needed to permit continued operation of the facility, this amendment is authorized on an emergency basis.

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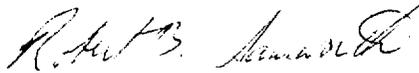
Mr. G. C. Sorensen

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September 8, 1989

A copy of the related safety evaluation supporting the amendment is enclosed. The notice of issuance and final determination of no significant hazards consideration and opportunity for hearing will be included with the Commission's biweekly Federal Register notices.

Sincerely,



Robert B. Samworth, Senior Project Manager
Project Directorate V
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 73 to
Facility Operating
License No. NPF-21
2. Safety Evaluation

cc: w/enclosures See next page

A copy of the related safety evaluation supporting the amendment is enclosed. The notice of issuance and final determination of no significant hazards consideration and opportunity for hearing will be included with the Commission's biweekly Federal Register notices.

Sincerely,

Robert B. Samworth, Senior Project Manager
Project Directorate V
Division of Reactor Projects - III,
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Office of Nuclear Reactor Regulation

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- 2. Safety Evaluation

cc: w/enclosures
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[WNP-2 AM74567]

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Mr. G. C. Sorensen

WPPSS Nuclear Project No. 2
(WNP-2)

cc:

Mr. C. M. Powers
WNP-2 Plant Manager
Washington Public Power Supply System
P.O. Box 968, MD 927M
Richland, Washington 99352

Regional Administrator, Region V
U.S. Nuclear Regulatory Commission
1450 Maria Lane, Suite 210
Walnut Creek, California 94596

Mr. G. E. Doupe, Esquire
Washington Public Power Supply System
P. O. Box 968
3000 George Washington Way
Richland, Washington 99532

Chairman
Benton County Board of Commissioners
Prosser, Washington 99350

Mr. Curtis Eschels, Chairman
Energy Facility Site Evaluation Council
Mail Stop PY-11
Olympia, Washington 98504

Mr. Christian Bosted
U. S. Nuclear Regulatory Commission
P. O. Box 69
Richland, Washington 99352

Mr. Alan G. Hosler, Licensing Manager
Washington Public Power Supply System
P. O. Box 968, MD 956B
Richland, Washington 99352

Nicholas S. Reynolds, Esq.
Bishop, Cook, Purcell
& Reynolds
1400 L Street NW
Washington, D.C. 20005-3502

Mr. A. Lee Oxsen
Assistant Managing Director for Operations
Washington Public Power Supply System
P. O. Box 968, MD 1023
Richland, Washington 99352

Mr. Gary D. Bouchey, Director
Licensing and Assurance
Washington Public Power Supply System
P. O. Box 968, MD 280
Richland, Washington 99352

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

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

DOCKET NO. 50-397

NUCLEAR PROJECT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 73
License No. NPF-21

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the Washington Public Power Supply System (the licensee), dated September 6, 1989, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-21 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 73, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


George W. Knighton, Director
Project Directorate V
Division of Reactor Projects - III,
IV, V and Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 8, 1989

ENCLOSURE TO LICENSE AMENDMENT NO. 73

FACILITY OPERATING LICENSE NO. NPF-21

DOCKET NO. 50-397

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains a vertical line indicating the areas of change. Also to be replaced is the following overleaf page.

AMENDMENT PAGE

3/4 3-6

OVERLEAF PAGE

3/4 3-5

TABLE 3.3.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

TABLE NOTATIONS

- (a) A channel may be placed in an inoperable status for up to 2 hours for required surveillance without placing the trip system in the tripped condition provided at least one OPERABLE channel in the same trip system is monitoring that parameter.
- (b) The "shorting links" shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn* and shutdown margin demonstrations are being performed per Specification 3.10.3.
- (c) An APRM channel is inoperable if there are less than 2 LPRM inputs per level or less than 14 LPRM inputs to an APRM channel.
- (d) This function shall be automatically bypassed when the reactor mode switch is not in the Run position and reactor pressure < 1037 psig.
- (e) This function is not required to be OPERABLE when the reactor pressure vessel head is removed per Specification 3.10.1.
- (f) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.
- (g) Also actuates the standby gas treatment system.
- (h) With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.
- (i) This function shall be automatically bypassed when turbine first stage pressure is < 165 psig, equivalent to THERMAL POWER less than 30% of RATED THERMAL POWER.
- (j) Also actuates the EOC-RPT system.

*Not required for control rods removed per Specification 3.9.10.1 or 3.9.10.2.

TABLE 3.3.1-2

REACTOR PROTECTION SYSTEM RESPONSE TIMES

<u>FUNCTIONAL UNIT</u>	<u>RESPONSE TIME (Seconds)</u>
1. Intermediate Range Monitors:	
a. Neutron Flux - High	N.A.
b. Inoperative	N.A.
2. Average Power Range Monitor*:	
a. Neutron Flux - Upscale, Setdown	N.A.
b. Flow Biased Simulated Thermal Power - Upscale	6±1**
c. Fixed Neutron Flux - Upscale	< 0.09
d. Inoperative	N.A.
3. Reactor Vessel Steam Dome Pressure - High	< 0.55
4. Reactor Vessel Water Level - Low, Level 3	< 1.05
5. Main Steam Line Isolation Valve - Closure	< 0.06
6. Main Steam Line Radiation - High	N.A.
7. Primary Containment Pressure - High	N.A.
8. Scram Discharge Volume Water Level - High	
a. Level Transmitter	N.A.
b. Float Switch	N.A.
9. Turbine Throttle Valve - Closure	≤ 0.06
10. Turbine Governor Valve Fast Closure, Trip Oil Pressure - Low	< 0.08#
11. Reactor Mode Switch Shutdown Position	N.A.
12. Manual Scram	N.A.

*Neutron detectors are exempt from response time testing. Response time shall be measured from the detector output or from the input of the first electronic component in the channel.

**Including simulated thermal power time constant.

#Measured from start of turbine control valve fast closure.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 73 TO FACILITY OPERATING LICENSE NO. NPF-21
WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2
DOCKET NO. 50-397

1.0 INTRODUCTION

By letters dated September 5, 1989 (G02-89-152) and September 6, 1989 (G02-89-153), Washington Public Power Supply System proposed certain changes to the Technical Specifications for Nuclear Project No. 2. Specifically the Supply System requested that Table 3.3.1-2 be revised to modify the response time testing required for the APRM Flow Biased Simulated Thermal Power Upscale function.

The Technical Specification currently requires that this Reactor Protection System (RPS) response time be less than or equal to 0.09 seconds not including the simulated thermal power time constant of 6 ± 1 seconds. The present WNP-2 surveillance procedures, and the plant design do not provide for independent measurement of these two values.

The proposed change would specify that the total response time be 6 ± 1 seconds, including the simulated thermal time constant.

This change is requested in order to clarify how the surveillance will be performed for the component. It does not change the conceptual design or function of any component. To avoid unnecessary shutdown of the unit when it was learned that the surveillances were not done in strict accordance with the technical specifications, the request was made on an emergency basis.

2.0 EVALUATION

Table 3.3.1-2 of the Technical Specifications shows three reactor protection system trip functions which utilize signals from the average power range monitors (APRMs). The flow-biased trip, to which the requested change applies, has the potential to improve the transient minimum critical power ratio (MCPR) response for some events. However the licensee does not rely on this trip to establish MCPR operating limits. The Fixed Neutron Flux - Upscale trip function, which is Functional Unit 2.c. in Table 3.3.1-2, is considered in the MCPR analyses.

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In early General Electric (GE) reactor protection system (RPS) designs, the flow-biased trip utilized APRM flux to correlate to the thermal power level. This was satisfactory for steady-state operation but was found to cause unnecessary trips during some power increase transients. As a result a RPS design change was made, to reference the neutron flux to a variable more similar to the thermal power. This was achieved by processing the APRM signal using a time constant which is representative of the fuel dynamics. This simulated thermal power signal is input to the flow referenced trip unit.

The value of 6 seconds was selected as the thermal power time constant for WNP-2. With this 6 second thermal power time constant included in the flow biased APRM trip logic, the 0.09 second RPS response time value is of negligible significance in the overall response time.

The licensee's surveillance procedures were developed to measure the overall channel response and the time constant. However they do not permit confirmation of the 0.09 second RPS response time. Because the overall time response of the reactor protection system is the important parameter to the performance of this trip, the amendment request changes the surveillance criterion to 6 ± 1 seconds. The 0.09 second component of the instrument loop is not of importance in overall channel performance and need not be measured separately. For this reason the staff finds the proposed amendment acceptable.

The fixed neutron flux upscale trip is based on the APRM signal without the simulated thermal power time delay. The 0.09 second RPS response time specified for this trip is significant and is confirmed by the licensee's surveillance procedures.

3.0 EMERGENCY CIRCUMSTANCES

The need for this change was identified on September 5, 1989 by the Plant Operations Committee as a result of the product of a total review of the neutron monitoring system. As a result of the plant management determination that strict compliance to the technical specifications was not being satisfied, Action 4 of Table 3.3.1-1 was entered at 12:30 p.m. PDT on September 5 and plant shutdown was initiated to be in at least Startup by 6:30 p.m. PDT. The licensee requested relief from the surveillance requirement by letter dated September 5, 1989 and applied for an amendment to the technical specifications on an emergency basis by letter dated September 6, 1989 to allow the unit to remain at power. At 4:20 p.m. PDT the NRC staff granted the requested relief by telephone based on the surveillance results to date which showed that the response time was well within the six second allowance for the time constant, i.e., sufficient conservatism existed to ensure that adequate protection was being provided for the interim period while the staff completed its review of the request for amendment. This was confirmed by letter to the licensee dated September 6, 1989.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the surveillance requirement for a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that this amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. Accordingly, this 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 need be prepared in connection with the issuance of this amendment.

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards considerations if operation of the facility in accordance with the amendment would not:

1. Involve a significant increase in the probability or the consequences of any 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 amendment has been evaluated against these standards in 10 CFR 50.92. A discussion of these standards as they relate to the amendment request follows:

- 1) The change does not involve a significant increase in the probability or consequence of an accident previously evaluated because the reliability of the reactor protection system is not thought to be enhanced by limiting the surveillance to the response time of the breaker. The surveillance of the response time of the complete trip logic is more important to demonstrate operability of the system.
- 2) The change will not create the possibility of a new or different kind of accident from any accident previously evaluated because no hardware changes are involved and no change to procedures is involved.
- 3) The change does not create a significant reduction in a margin of safety because the more important time constant (i.e. the overall value) is being surveyed and the 0.09 second contribution of the breaker to this overall value is unimportant to the channel performance. Separate surveillance of the response time of the breaker would not be expected to improve the reliability of the breaker. Surveillance of the overall response time may afford a slight improvement in the margin of safety.

Accordingly, the Commission has determined that this amendment involves no significant hazards consideration.

6.0 CONTACT WITH STATE OFFICIAL

In accordance with 10 CFR 50.91, the licensee provided the State of Washington with a copy of its September 6, 1989 letter. The NRC staff advised the Washington Energy Facility Siting Council of the final determination of no significant hazards considerations by telephone on September 8, 1989. The State of Washington did not have any comment on this determination.

7.0 CONCLUSION

In summary, based on the assertion that no significant hazard is created by the proposed amendment and that the proposed change to measure the overall trip channel response time including the simulated thermal power time constant instead of measuring only the RPS response time provides reasonable assurance of the operability of the RPS, the proposed changes are acceptable.

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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Robert B. Samworth

Dated: September 8, 1989