

June 6, 1989

Docket No. 50-397

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

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Dear Mr. Sorensen:

SUBJECT: ISSUANCE OF AMENDMENT NO. 70 TO FACILITY OPERATING LICENSE
NO. NPF-21 - WPPSS NUCLEAR PROJECT NO. 2 (TAC NO. 72620)

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 letter dated March 8, 1989 (G02-89-038).

This amendment revises Technical Specification Table 4.3.2.1-1, "Isolation Actuation Instrumentation Surveillance Requirements," by deleting channel check and channel functional test requirements for certain systems using temperature signals. This change is justified on the basis that the temperature switches in the leak detection system have been replaced by equipment of an improved design.

A copy of the related safety evaluation supporting the amendment is enclosed. A Notice of Issuance will be included in the Commission's bi-weekly Federal Register notice.

Sincerely,

/s/

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. 70 to Facility
Operating License No. NPF-21
2. Safety Evaluation

cc: w/enclosures
See next page

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

June 6, 1989

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

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A copy of the related safety evaluation supporting the amendment is enclosed. A Notice of Issuance will be included in the Commission's bi-weekly Federal Register notice.

Sincerely,

A handwritten signature in cursive script, reading "Robert B. Samworth", is positioned below the word "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. 70 to Facility
Operating License No. NPF-21
2. Safety Evaluation

cc: w/enclosures
See next page

Mr. G. C. Sorensen

WPPSS Nuclear Project No. 2
(WNP-2)

cc:

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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. 70
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 March 8, 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. 70, 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

for 
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: June 6, 1989

ENCLOSURE TO LICENSE AMENDMENT NO.70

FACILITY OPERATING LICENSE NO. NPF-21

DOCKET NO. 50-397

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change. Also to be replaced are the following overleaf pages.

AMENDMENT PAGE

OVERLEAF PAGE

3-22

3-21

3-23

-

3-24

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TABLE 4.3.2.1-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>TRIP FUNCTION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>	<u>OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED</u>
1. <u>PRIMARY CONTAINMENT ISOLATION</u>				
a. Reactor Vessel Water Level-				
1) Low, Level 3	S	M	R	1, 2, 3
2) Low Low, Level 2	N.A.	M	R	1, 2, 3
b. Drywell Pressure - High	N.A.	M	R	1, 2, 3
c. Main Steam Line				
1) Radiation - High	S	M	R	1, 2, 3
2) Pressure - Low	N.A.	M	R	1
3) Flow - High	S	M	R	1, 2, 3
d. Main Steam Line Tunnel				
Temperature - High	N.A.	SA	R	1, 2, 3
e. Main Steam Line Tunnel				
Δ Temperature - High	N.A.	SA	R	1, 2, 3
f. Condenser Vacuum - Low	N.A.	M	R	1, 2*, 3*
g. Manual Initiation	N.A.	R	N.A.	1, 2, 3
2. <u>SECONDARY CONTAINMENT ISOLATION</u>				
a. Reactor Building Vent				
Exhaust Plenum				
Radiation - High	S	M	R	1, 2, 3, and **
b. Drywell Pressure - High	N.A.	M	R	1, 2, 3
c. Reactor Vessel Water				
Level - Low Low, Level 2	N.A.	M	R	1, 2, 3, and #
d. Manual Initiation	N.A.	R	N.A.	1, 2, 3, and **

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>TRIP FUNCTION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>	<u>OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED</u>
<u>3. REACTOR WATER CLEANUP SYSTEM ISOLATION</u>				
a. Δ Flow - High	S	M	R	1, 2, 3
b. Heat Exchanger Area Temperature - High	N.A.	SA	R	1, 2, 3
c. Heat Exchanger Area Ventilation Δ Temperature - High	N.A.	SA	R	1, 2, 3
d. Pump Area Temperature - High				
Pump Room A	N.A.	SA	R	1, 2, 3
Pump Room B	N.A.	SA	R	1, 2, 3
e. Pump Area Ventilation Δ Temp. - High				
Pump Room A	N.A.	SA	R	1, 2, 3
Pump Room B	N.A.	SA	R	1, 2, 3
f. SLCS Initiation	N.A.	R	N.A.	1, 2, 3
g. Reactor Vessel Water Level - Low Low, Level 2	N.A.	M	R	1, 2, 3
h. RWCU/RCIC Line Routing Area Temperature - High	N.A.	SA	R	1, 2, 3
i. RWCU Line Routing Area Temperature - High	N.A.	SA	R	1, 2, 3
j. Manual Initiation	N.A.	R	N.A.	1, 2, 3
<u>4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION</u>				
a. RCIC Steam Line Flow - High	S	M	R	1, 2, 3
b. RCIC/RHR Steam Line Flow - High	S	M	R	1, 2, 3
c. RCIC Steam Supply Pressure - Low	N.A.	M	R	1, 2, 3
d. RCIC Turbine Exhaust Diaphragm Pressure - High	N.A.	M	R	1, 2, 3
e. RCIC Equipment Room Temperature - High	N.A.	SA	R	1, 2, 3
f. RCIC Equipment Room Δ Temperature - High	N.A.	SA	R	1, 2, 3

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>TRIP FUNCTION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>	<u>OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED</u>
4. <u>REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION</u> (Continued)				
g. RWCU/RCIC Steam Line Routing Area Temperature - High	N.A.	SA	R	1, 2, 3
h. Drywell Pressure - High	N.A.	M	R	1, 2, 3
i. Manual Initiation	N.A.	R	N.A.	1, 2, 3
5. <u>RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION</u>				
a. Reactor Vessel Water Level - Low, Level 3	S	M	R	1, 2, 3
b. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	N.A.	M	R	1, 2, 3
c. Equipment Area Temperature - High	N.A.	SA	R	1, 2, 3
d. Equipment Area Ventilation Δ Temp. - High	N.A.	SA	R	1, 2, 3
e. Shutdown Cooling Return Flow Rate - High	N.A.	M	R	1, 2, 3
f. RHR Heat Exchanger Area Temperature - High	N.A.	SA	R	1, 2, 3
g. Manual Initiation	N.A.	R	N.A.	1, 2, 3

TABLE NOTATIONS

- * When reactor steam pressure \geq 1037 psig and/or any turbine stop valve is open.
- ** When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.
- # During CORE ALTERATION and operations with a potential for draining the reactor vessel.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 70 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 March 8, 1989, Washington Public Power Supply System proposed certain changes to the Technical Specifications for Nuclear Project No. 2. Technical Specification Table 4.3.2.1-1, Isolation Actuation Instrumentation Surveillance Requirements, would be modified to reduce requirements for periodic functional testing of temperature switches in the leak detection system. This reduction in surveillance reflects enhanced operating capabilities of the leak detection system due to replacement of the present equipment (based on Riley Model 86 temperature switches) with General Electric Nuclear Measurement Analysis and Control (NUMAC) micro-computer based instrumentation.

2.0 EVALUATION

During the fourth refueling outage, which started on about April 29, 1989, the Supply System intends to replace the Riley temperature switches in the leak detection system with General Electric Nuclear Measurement and Control instrumentation. The NUMAC equipment will receive signals from the presently installed thermocouples and provide alarm and trip signals to existing circuitry. All functions of the leak detection system will remain unchanged. The replacement is being made to enhance overall system reliability. The NUMAC instrumentation incorporates a number of diagnostic and self-test features as well as significantly better total channel drift characteristics. The proposed amendment to the technical specification requirements is based on these enhanced capabilities and is acceptable.

Presently the technical specification requires channel checks on a twelve hour frequency and channel functional tests on a monthly frequency. The licensee proposes to amend the technical specifications to eliminate the channel check requirement and to change the channel functional test frequency from monthly to semi-annually.

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The channel check of the instrumentation requires that an operator read the output of each channel and compare the reading to expected and similar channel readings on a 12-hour basis. Fifty nine thermocouples are presently manually selected and assessed to complete the channel check. The NUMAC replacement instrumentation, Quality Class 1 and seismically qualified, has the following diagnostic and self-test features:

- o Continually senses an open thermocouple (no input signal) and provides a trouble alarm.
- o Continually monitors two internal power supplies and provides a trouble alarm should one fail. The monitors remain functional with one power supply.
- o Continually monitors power input to the module and provides a trouble alarm on loss of power.
- o Self-checks each channel utilizing a micro-pulse signal through the channel to confirm functionality on a 30-minute frequency and provides a trouble alarm on failure of the self test.
- o Provides a trouble alarm if the module is left in an inoperable condition (card-out-of-file, instrument left in an instrument-out-of operate mode).

These design features provide a more comprehensive assessment of system operability every 30 minutes than that presently provided by the Riley instrument channel check on a 12-hour basis. Essentially, a 30-minute channel check feature is inherent in the design that far surpasses and precludes the necessity of the channel check presently performed. Utilization of the NUMAC instrumentation channel check feature provides greater and more frequent assessment of system operability, is more resistant to human error, and will avoid the use of an operator's time for an obsolescent function (channel checking manually).

The licensee's proposal to perform channel functional testing on a semi-annual frequency instead of monthly is based on (1) the manufacturer's total channel drift as compared to that experienced by the presently installed Riley instruments and (2), an analysis of the minimum changes in temperature between trip setpoint and allowable value allowed by the technical specifications compared to the manufacturer's specified total channel drift. Observed drift values on the Riley instrumentation have been as high as 7° F per month. The NUMAC equipment drift specification is less than 0.7° F per month, which is one-tenth of that observed in the Riley equipment. Additionally, the minimum margin between Trip setpoint and Allowable Value for the temperature monitoring system variables as noted in Technical Specification Table 3.3.2-2, Isolation Actuation Instrumentation Setpoints, is 10° F. Using this

value and the manufacturer's specified drift (less than 0.7° F), the changing of channel functional testing from monthly to semi-annually for the new system will leave a margin to the allowable value of greater than 5.8° F. Using this same drift value, the new instrumentation could be channel functional tested each 10 months and provide approximately the same margin observed, at times, with the present instrumentation. As discussed above, failure mode diagnostic features are continuous and preclude the necessity of confirmation during channel functional testing. Hence, the diagnostic and drift characteristics of the NUMAC equipment assure greater confidence in system operability when functionally tested on a semi-annually basis than the Riley equipment tested monthly.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation and use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. 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. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. 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.

4.0 CONTACT WITH STATE OFFICIAL

The Commission made a proposed determination that the amendment involves no significant hazards consideration (54 FR 18962, May 3, 1989) and consulted with the State of Washington. No public comments were received, and the State of Washington did not have any comment.

5.0 CONCLUSION

Due to the diagnostic, self-test, and channel drift features, system operability is assessed more frequently and accurately, failure is identified more readily, operator efficiency is increased and presently recognized margins are conservatively preserved. The margin of safety is increased through the use of the NUMAC equipment. The diagnostic and self-test functions in lieu of a manual channel check, and semi-annual functional testing ensure the NUMAC equipment functions as intended. Hence, there is no impact to safety due to this proposal and it is 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, and (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: R. Samworth, PD5

Dated: June 6, 1989