

April 4, 1988

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

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| JLee | ARM/LFMB |
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| FALLenspach | JMauck ATHadani |
| HLi | JJoyce |

Dear Mr. Sorensen:

SUBJECT: Issuance of Amendment No. 51 to Facility Operating
License NPF-21 - WPPSS Nuclear Project No. 2 (TAC NO 64942)

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 51 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 10, 1987 (Reference G02-87-079).

This amendment revises WNP-2 Technical Specification Section 3.3.7.1, "Radiation Monitoring Instrumentation" and the basis for Section 3/4.3.7.1. The setpoint value for the new fuel vault criticality Monitor alarm is changed from less than or equal to 10 R/h to less than or equal to 5 R/h.

A copy of the related safety evaluation supporting Amendment No. 51 to Facility Operating License No. NPF-21 is enclosed.

Sincerely,

original signed by Robert Samworth

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

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P PDR

Enclosures:

1. Amendment No. 51 to Facility
Operating License No. NPF-21
2. Safety Evaluation


cc w/enclosures:

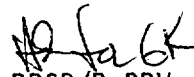
See next page

*See previous concurrence

LA: DRSP/PDV
JLee/cw
03/21/88

*DSRP/PDV
RSamworth
03/09/88


R. Buchmann
03/21/88


DRSP/D:PDV
GKnighton
03/14/88

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This amendment revises WNP-2 Technical Specification Section 3.3.7.1. "Radiation Monitoring Instrumentation" and the basis for Section 3/4 3.7.1. The set point value for the new fuel vault criticality Monitor alarm is changed from less than or equal to 10 mR/h to less than or equal to 5 mR/h.

A copy of the related safety evaluation supporting Amendment No. to Facility Operating License No. NPF-21 is enclosed.

Sincerely,


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

Enclosures:

1. Amendment No. to Facility
Operating License No. NPF-21
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cc w/enclosures:
See next page

LA: DRSP/PDV
JLee/cw
03/ /88


DSRP/PDV
RSamworth
03/ /88

OGC
03/ /88

DRSP/D:PDV
GKnighton
03/ /88



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

April 4, 1988

Docket No. 50-397

Mr. G. C. Sorensen, Manager
Regulatory Programs
Washington Public Power Supply System
P.O. Box 968
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A copy of the related safety evaluation supporting Amendment No. 51 to Facility Operating License No. NPF-21 is enclosed.

Sincerely,

A handwritten signature in cursive script, reading "Robert B. Samworth".

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

Enclosures:

1. Amendment No. 51 to Facility
Operating License No. NPF-21
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. G. C. Sorensen, Manager
Washington Public Power Supply System

WPPSS Nuclear Project No. 2
(WNP-2)

cc:
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Bishop, Cook, Purcell
& Reynolds
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Chairman
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

DOCKET NO. 50-397

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 51
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 10, 1987 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 enclosure to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-21 is hereby amended to read as follows:

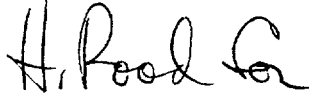
(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 51, 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.

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

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in dark ink, appearing to read "H. Reed G", is written over the typed name.

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

Enclosure:
Changes to the Technical
Specifications

Date of Issuance: April 4, 1988

April 4, 1988

ENCLOSURE TO LICENSE AMENDMENT NO. 51

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 area of change.

REMOVE

INSERT

3/4 3-59
B 3/4 3-4

3/4 3-59
B 3/4 3-4

The following overleaf pages are also enclosed for convenience: 3/4 3-60 and B 3/4 3-3.

TABLE 3.3.7.1-1RADIATION MONITORING INSTRUMENTATION

| <u>INSTRUMENTATION</u> | <u>MINIMUM CHANNELS OPERABLE</u> | <u>APPLICABLE CONDITIONS</u> | <u>ALARM/TRIP SETPOINT</u> | <u>ACTION</u> |
|--|--------------------------------------|----------------------------------|--------------------------------|---------------|
| 1. Main Control Room Ventilation Radiation Monitor | 2/intake | 1,2,3,5 and * | ≤ 5000 cpm | 70 |
| 2. Area Monitors | | | | |
| a. Criticality Monitors | | | | |
| 1) New Fuel Storage Vault | 2 | # | ≤ 5 R/h(a) | 71 |
| 2) Spent Fuel Storage Pool | 1 | ## | ≤ 20 mR/h | 71 |

TABLE NOTATIONS

*When the main condenser air evacuation system is in operation.

#With fuel in the new fuel storage vault.

##With fuel in the spent fuel storage pool.

(a)Alarm only. Alarm setpoint set IAW 10 CFR 70.24.a.1.

ACTION STATEMENTS

ACTION 70 -

- a. With one of the required monitors inoperable, place the inoperable channel in the tripped condition within 1 hour; restore the inoperable channel to OPERABLE status within 7 days, or, within the next 6 hours, initiate and maintain operation of the control room emergency filtration system in the pressurization mode of operation.
- b. With both of the required monitors inoperable, initiate and maintain operation of the control room emergency filtration system in the pressurization mode of operation within 1 hour.

ACTION 71 - With the required monitor inoperable, assure a portable continuous monitor with the same alarm setpoint is OPERABLE in the vicinity of the installed monitor during any fuel movement. If no fuel movement is being made, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.

TABLE 4.3.7.1-1RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

| <u>INSTRUMENTATION</u> | | <u>CHANNEL CHECK</u> | <u>CHANNEL FUNCTIONAL TEST</u> | <u>CHANNEL CALIBRATION</u> | <u>OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED</u> |
|------------------------|---|--------------------------|--|--------------------------------|---|
| 1. | Main Control Room Ventilation Radiation Monitor | S | M | R | 1, 2, 3, 5 and * |
| 2. | Area Monitors | | | | |
| | a. Criticality Monitors | | | | |
| | 1) New Fuel Storage Vault | S | M | R | # |
| | 2) Spent Fuel Storage Pool | S | M | R | ## |

TABLE NOTATIONS

#With fuel in the new fuel storage vault.

##With fuel in the spent fuel storage pool.

*When the main condenser air evacuation system is in operation.

INSTRUMENTATION

BASES

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

The anticipated transient without scram (ATWS) recirculation pump trip system provides a means of limiting the consequences of the unlikely occurrence of a failure to scram during an anticipated transient. The response of the plant to this postulated event falls within the envelope of study events in General Electric Company Topical Report NEDO-10349, dated March 1971, and NEDO-24222, dated December 1979.

The end-of-cycle recirculation pump trip (EOC-RPT) system is a part of the reactor protection system and is an essential safety supplement to the reactor trip. The purpose of the EOC-RPT is to recover the loss of thermal margin which occurs at the end-of-cycle. The physical phenomenon involved is that the void reactivity feedback due to a pressurization transient can add positive reactivity to the reactor system at a faster rate than the control rods add negative scram reactivity. Each EOC-RPT system trips both recirculation pumps, reducing coolant flow in order to reduce the void collapse in the core during two of the most limiting pressurization events. The two events for which the EOC-RPT protective feature will function are closure of the turbine throttle valves and fast closure of the turbine governor valves.

A fast closure sensor from each of two turbine governor valves provides input to the EOC-RPT system; a fast closure sensor from each of the other two turbine governor valves provides input to the second EOC-RPT system. Similarly, a position switch for each of two turbine throttle valves provides input to one EOC-RPT system; a position switch from each of the other two throttle valves provides input to the other EOC-RPT system. For each EOC-RPT system, the sensor relay contacts are arranged to form a 2-out-of-2 logic for the fast closure of turbine governor valves and a 2-out-of-2 logic for the turbine throttle valves. The operation of either logic will actuate the EOC-RPT system and trip both recirculation pumps.

Each EOC-RPT system may be manually bypassed by use of a keyswitch which is administratively controlled. The manual bypasses and the automatic Operating Bypass at less than 30% of RATED THERMAL POWER are annunciated in the control room.

The EOC-RPT system response time is the time assumed in the analysis between initiation of valve motion and complete suppression of the electric arc, i.e., 190ms, less the time allotted for sensor response, i.e., 10ms, and less the time allotted for breaker arc suppression determined by test, as correlated to manufacturer's test results, i.e., 83ms, and plant preoperational test results.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

INSTRUMENTATION

BASES

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

The reactor core isolation cooling system actuation instrumentation is provided to initiate actions to assure adequate core cooling in the event of reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel without providing actuation of any of the emergency core cooling equipment.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

3/4.3.6 CONTROL ROD BLOCK INSTRUMENTATION

The control rod block functions are provided consistent with the requirements of Specifications 3/4.1.4, Control Rod Program Controls, 3/4.2, Power Distribution Limits and 3/4.3.1 Reactor Protection System Instrumentation. The trip logic is arranged so that a trip in any one of the inputs will result in a control rod block.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

3/4.3.7 MONITORING INSTRUMENTATION

3/4.3.7.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring instrumentation ensures that; (1) the radiation levels are continually measured in the areas served by the individual channels; (2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded; and (3) sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with 10 CFR Part 50, Appendix A, General Design Criteria 19, 41, 60, 61, 63, and 64.

The criticality monitor alarm setpoints were calculated using the criteria from 10 CFR 70.24.a.1 that requires detecting a dose rate of 20 Rads per minute of combined neutron and gamma radiation at 2 meters. The alarm setpoint was determined by calculational methods using the gamma to gamma plus neutron ratios from ANSI/ANS 8.3-1979, Criticality Accident Alarm System, Appendix B and assuming a critical mass was formed from a seismic event, with a volume of 6' x 6' x 6' at a distance of 27.7 feet from the two detectors. The calculated dose rate using the methodology is 5.05 R/hr. The allowable value for the alarm setpoint was, therefore, established at 5R/hr.

3.4.3.7.2 SEISMIC MONITORING INSTRUMENTATION

The OPERABILITY of the seismic monitoring instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the unit. This instrumentation is consistent with the recommendations of Regulatory Guide 1.12, "Instrumentation for Earthquakes," April 1974.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 51 TO FACILITY OPERATING LICENSE NO. NPF-21

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

WPPSS NUCLEAR PROJECT NO. 2

DOCKET NO. 50-397

1.0 INTRODUCTION

By application dated March 10, 1987, the Washington Public Power Supply System (the licensee) requested an amendment to the Technical Specification for Facility Operating License No. NPF-21 for the WNP-2 Plant. The Amendment would change the fuel vault criticality monitor alarm setpoint value in Table 3.3.7.1-1 from ≤ 10 R/h(a) to a revised value of ≤ 5 R/h(a).

2.0 EVALUATION

The Code of Federal Regulations 10 CFR 70.24.a.1 requires that the monitoring system shall be capable of detecting a criticality that produces an absorbed dose in soft tissue of 20 rads of combined neutron and gamma radiation at an unshielded distance of 2 meters from the reacting material within one minute. Coverage of all areas shall be provided by two detectors.

The licensee stated that the current alarm setpoint value of < 10 R/h(a) was determined by calculation using criteria from ANSI 16.2 1969, Appendix "Example of Criticality Accident Alarm System." The change request from ≤ 10 R/h(a) to ≤ 5 R/h(a) reflects utilization of the revised criteria presented in ANSI/ANS 8.3 1979, "Criticality Accident Alarm System," Appendix B. The calculated dose rate using the new criteria is 5.05 R/hr. The allowable value for the alarm setpoint was therefore established at 5 R/hr.

The staff finds that the revised alarm setpoint value is more conservative than ~~the~~ current alarm setpoint value. This setpoint will meet or exceed the criteria set forth in 10 CFR 70.24.a.1. Therefore, the changed ~~proposed~~ in the application is acceptable.

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. The staff has determined that this amendment involves no significant increase in the amounts, and no significant change in the types, of effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has

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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 to be prepared in connection with the issuance of this amendment.

4.0 CONTACT WITH STATE OFFICIAL

The Commission has consulted with the State of Washington concerning the proposed determination that the amendment involves no significant hazards consideration. The state of Washington did not have any comment.

5.0 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 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: Hulbert Li, NRR

Dated: April 4, 1988