

April 4, 1988

Docket No. 50-397

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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

Dear Mr. Sorensen:

Subject: Issuance of Amendment No. 53 to Facility Operating  
 License NPF-21 - WPPSS Nuclear Project No. 2 (TAC NO 64697)

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 53 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 February 9, 1987 (G02-87-043)

This amendment revises WNP-2 Technical Specification Section 4.1.3.5 pertaining to surveillance requirements for the control rod scram accumulators.

A copy of the related safety evaluation supporting Amendment No. 53 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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Enclosures:

1. Amendment No. 53 to Facility Operating License No. NPF-21
2. Safety Evaluation

cc w/enclosures:  
 See next page

LA: DRSP/PDV  
 JLee: xdr  
 03/17/88

*ABA*

DSRP/PDV  
 RSamworth  
 03/16/88

OGC  
*[Signature]*  
 03/23/88

*[Signature]*

DRSP/D:PDV  
 GKnighton  
 04/4/88



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  
3000 George Washington Way  
Richland, Washington 99352

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Sincerely,

A handwritten signature in cursive script, appearing to read "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. 53 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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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. 53  
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 Supply System, also the licensee), dated February 9, 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. 53, 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



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. 53

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 1-10

3/4 1-10

The following overleaf page is also provided for convenience: 3/4 1-9.

REACTIVITY CONTROL SYSTEMS

CONTROL ROD SCRAM ACCUMULATORS

LIMITING CONDITION FOR OPERATION

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3.1.3.5 All control rod scram accumulators shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 5\*.

ACTION:

- a. In OPERATIONAL CONDITIONS 1 or 2:
  1. With one control rod scram accumulator inoperable, within 8 hours:
    - a) Restore the inoperable accumulator to OPERABLE status, or
    - b) Declare the control rod associated with the inoperable accumulator inoperable.Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.
  2. With more than one control rod scram accumulator inoperable, declare the associated control rods inoperable and:
    - a) If the control rod associated with any inoperable scram accumulator is withdrawn, immediately verify that at least one control rod drive pump is operating by inserting at least one withdrawn control rod at least one notch or place the reactor mode switch in the Shutdown position.
    - b) Insert the inoperable control rods and disarm the associated control valves either:
      - 1) Electrically, or
      - 2) Hydraulically by closing the drive water and exhaust water isolation valves.Otherwise, be in at least HOT SHUTDOWN within 12 hours.
- b. In OPERATIONAL CONDITION 5\*:
  1. With one withdrawn control rod with its associated scram accumulator inoperable, insert the affected control rod and disarm the associated directional control valves within one hour, either:
    - a) Electrically, or
    - b) Hydraulically by closing the drive water and exhaust water isolation valves.
  2. With more than one withdrawn control rod with the associated scram accumulator inoperable or no control rod drive pump operating, immediately place the reactor mode switch in the Shutdown position.
- c. The provisions of Specification 3.0.4 are not applicable.

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\*At least the accumulator associated with each withdrawn control rod. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

## REACTIVITY CONTROL SYSTEMS

### SURVEILLANCE REQUIREMENTS

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4.1.3.5 Each control rod scram accumulator shall be determined OPERABLE:

- a. At least once per 7 days by verifying that the indicated pressure is greater than 940 psig unless the control rod is inserted and disarmed or scrambled.
- b. At least once per 18 months by:
  1. Performance of a:
    - a) CHANNEL FUNCTIONAL TEST of the leak detectors, and
    - b) CHANNEL CALIBRATION of the pressure detectors, and verifying an alarm setpoint of equal to or greater than 940 psig on decreasing pressure.
  2. Measuring and recording the time for up to 10 minutes that each individual accumulator check valve maintains the associated accumulator pressure above the alarm setpoint with no control rod drive pump operating.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 53 TO FACILITY OPERATING LICENSE NO. NPF-21  
WASHINGTON PUBLIC POWER SUPPLY SYSTEM  
WPPS NUCLEAR PROJECT NO. 2  
DOCKET NO. 50-397

1.0 INTRODUCTION

During normal plant operation, the Boiling Water Reactor (BWR) Control Rod Drive (CRD) system provides high pressure charging water to the CRD mechanism via a Hydraulic Control Unit (HCU) for each CRD mechanism. This in conjunction with reactor pressure provides the necessary driving force (800 psig Technical Specification minimum) required to insert control rods upon a reactor scram. The CRD HCU scram accumulators supplement this capability by supplying additional motive force for control rod insertion with an accumulator pressure (1200-1400 psig). When the plant is not at pressure (1000 psig), the CRD HCU scram accumulators provide the needed motive force for control rod insertion.

To ensure that each accumulator has sufficient stored energy, the accumulator nitrogen gas pressure must be greater than or equal to 940 psig. The accumulator pressure is verified weekly in accordance with the surveillance requirements of Technical Specification No. 3.1.3.5. In addition, pressure switch alarms are provided to monitor the accumulator pressure between weekly surveillances. The pressure switch detectors are set to alarm at  $940 + 30, -0$  psig on decreasing pressure in accordance with Technical Specification No. 3.1.3.5 surveillance requirements 4.1.3.5.b.1.b. However, the upper setpoint limit of 970 psig has not provided sufficient flexibility to avoid inadvertent alarms.

By letter dated February 9, 1987, the licensee stated that the CRD HCU scram accumulator pressure switches at WNP-2 may experience pressures less than 940 psig because the low pressure alarm setpoint may not always provide sufficient instrument drift margin. According to the licensee, this downward instrument drift trend has been observed since initial plant startup. To allow for this instrument drift the licensee proposed to amend the surveillance requirements (4.1.3.5.b.1.b) of Technical Specification No. 3.1.3.5 to state that the low pressure alarm be set at "equal to or greater than 940 psig" on decreasing pressure with no upper setpoint limit. This would allow for a sufficiently high setpoint value to preclude inadvertent alarms.

The licensee justified the requested revision by stating that the change provides adequate instrument drift allowance so that sufficient nitrogen pressure is maintained for the required scram performance. The licensee

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also stated that increasing the accumulator alarm setpoint will not affect or change the original design basis for the Control Rod Hydraulic System (CRDHS). Furthermore, all equipment associated with the CRDHS will continue to perform its design function.

In their Service Information Letter to their customers, dated August 9, 1985, General Electric (GE) noted that there is a practical upper limit for the setpoint. General Electric advises that the selected setting must not be so high that the alarm lights fail to reset following accumulator repressurization after a scram. The staff does not consider this to warrant inclusion of an upper limit on the allowable setpoint range in the technical specifications since a control rod associated with the alarmed scram accumulator would have to be declared inoperable and prescribed actions taken under Technical Specification 3.1.3.5.

## 2.0 EVALUATION

On June 23, 1987, the staff visited the site and reviewed the licensee's available trending information supporting the Technical Specification amendment request. Verification was made that the HCU accumulator pressure switches utilized by the licensee are bourdon tube devices manufactured by Barksdale, Inc. with a proof of pressure at 4800 psig and an adjustable setpoint range of 160-3200 psig (Model No. BIT-GH3255).

At initial startup, the licensee's calibrated setpoint range for the pressure switches was between 940 and 970 psig (30 psig). The first Technical Specification surveillance of the pressure switch setpoints was performed in November 1984 in accordance with the licensee's surveillance procedure No. PPM 741352. During this surveillance, twenty-six percent of the pressure switches alarmed outside of the calibrated setpoint range specified by the Technical Specification. (Five percent alarmed at 924 psig or below. Eighteen percent alarmed between 925 and 939 psig and three percent alarmed above 970 psig).

Appropriate corrective action was taken by the licensee for the nonconforming alarm set points. In addition, the licensee conservatively narrowed the calibrated setpoint range to 950-970 psig (20 psig).

Technical Specification HCU Accumulator Alarm Pressure Switch surveillances were performed in April 1986 and April 1987. Twenty-seven percent of the alarm setpoints in 1986 actuated outside of the calibrated setpoint range. In 1987, seven percent actuated outside of the calibrated setpoint range. Based on this operating experience, the licensee's position is that available trending information demonstrate that the 30 psig band (940-970 psig) has not provided adequate instrument drift margin for the installed accumulator pressure switches.

The staff has reviewed the licensee's submittal and the associated justification for the requested revision of Technical Specification 4.1.3.5.b.1.b. Based on the review, the staff agrees that the proposed revision is conservative in the sense that, with the revision, the alarm

setpoint value for the pressure detector could be equal to or greater than the currently existing range of setpoint values and could consequently give the same or earlier warning of a scram accumulator low pressure. The staff also finds that while the proposed revision would allow the licensee greater operational flexibility, it would not compromise the operability of either a scram accumulator or its associated pressure detector. The staff, concludes that the proposed revision of TS 4.1.3.5.b.1.b for WNP-2, relating to the range of alarm set point value for the pressure detectors associated with Control Rod Drive System scram accumulators, 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 and changes in 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 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

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: Charles Ramsey, Region V

Dated: April 4, 1988