Docket No. 50-397 SEP 05 1985

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. 16 TO FACILITY OPERATING LICENSE NPF-21, WPPSS NUCLEAR PROJECT NO. 2

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 16 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 July 17 and 19, 1985. The amendment was authorized on an emergency basis by telephone on July 19, 1985 and confirmed by our letter also dated July 19, 1985.

This action amends the WNP-2 Technical Specifications by creating new sections 3/4.3.10 and B 3/4.3.10 Neutron Flux Monitoring Instrumentation, and modifying section 3/4.4.1 Recirculation System. The new sections explain the basis for surveillance on neutron flux noise levels so that the maximum allowable safe power level can be related to the core coolant flow rate. The modified section changes the limitation on power level during single coolant system loop operation so that the maximum allowable power level is related to coolant flow rate in such a way that flow-power instabilities are precluded. This amendment also corrects page number errors in the Index.

A copy of the related safety evaluation supporting Amendment No. 16 to Facility Operating License No. NPF-21 is enclosed.

Sincerely,

Original signed by:

Walter R. Butler, Chief
Licensing Branch No. 2
Division of Licensing

Enclosures:
1. Amendment No. 16 to Facility Operating License NPF-21
2. Safety Evaluation

cc w/enclosures:
See next page

LB#2/DL/PM	LB#2/DL/LA	OELD	LB#2/DL/BC	AD/DL
JBradfute:lb	EHylton	WPaton	WButler	TMNovak
08/06/85	08/7/85	08/ /85	08/19/85	08/ /85

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P PDR

3. This amendment is effective as of July 19, 1985.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

Walter R. Butler, Chief
Licensing Branch No. 2
Division of Licensing

Enclosure:
Changes to the Technical
Specifications

Date of Issuance: SEP 05 1985

LB#2/DL	LB#2/DL	LB#2/DL	OELD	ADOL/DL
JBradfute:lb	EAylton	WButler	WPaton	TNovak
07/31/85	08/8/85	08/19/85	08/[illegible]/85	08/29/85

Issuance of Amendment No. 16 to Facility Operating License No. NPF-21
WPPSS Nuclear Project No. 2

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TBarnhart(4)

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

SEP 05 1985

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,

Walter R. Butler

Walter R. Butler, Chief
Licensing Branch No. 2
Division of Licensing

Enclosures:
1. Amendment No. 16 to Facility Operating License 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)

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

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

DOCKET NO. 50-397

WPPSS NUCLEAR PROJECT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

License No. NPF-21
Amendment No. 16

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 July 17 and 19, 1985, 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 as amended, 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 regulation set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or 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, Facility Operating License No. NPF-21 is amended to revise the Technical Specifications as indicated in the attachment to this amendment and paragraph 2.C.(2) of the Facility Operating License 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. 16, 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 July 19, 1985.

FOR THE NUCLEAR REGULATORY COMMISSION

Walter R. Butler

Walter R. Butler, Chief
Licensing Branch No. 2
Division of Licensing

Enclosure:
Changes to the Technical
Specifications

Date of Issuance: SEP 05 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 16
FACILITY OPERATING LICENSE NO. NPF-21
DOCKET NO. 50-397

Replace the following pages of the Appendix "A" Technical Specifications with enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

REMOVE	INSERT
vi	vi
xiii	xiii
xix	xix
xx	xx
---	3/4 3-102
---	3/4 3-103
---	3/4 3-104
3/4 4-1	3/4 4-1
3/4 4-2	3/4 4-2
3/4 4-3	3/4 4-3
---	3/4 4-3a
B3/4 3-7	B3/4 3-7
B3/4 3-7a	B3/4 3-7a

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

BASES

LIST OF FIGURES

INSTRUMENTATION

3/4.3.10 NEUTRON FLUX MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.10 The APRM and LPRM* neutron flux noise levels shall not exceed three (3) times their established baseline value.

APPLICABILITY: OPERATIONAL CONDITION 1 with two reactor coolant system recirculation loops in operation with THERMAL POWER greater than the limit specified in Figure 3.3.10-1 and total core flow less than 45% of rated total core flow or with one reactor coolant system recirculation loop not in operation with THERMAL POWER greater than the limit specified in Figure 3.3.10-1.

ACTION:

With the APRM or LPRM* neutron flux noise level greater than three (3) times their established baseline noise levels, initiate corrective action within 15 minutes to restore the noise levels to within the required limits within 2 hours or reduce THERMAL POWER to less than or equal to the limit specified in Figure 3.3.10-1 within the next 2 hours.

SURVEILLANCE REQUIREMENTS

4.3.10.1 The provisions of Specification 4.0.4 are not applicable.

4.3.10.2 With two reactor coolant system recirculation loops in operation, establish a baseline APRM and LPRM* neutron flux noise level value within 2 hours upon entering the APPLICABLE OPERATIONAL CONDITION of Specification 3.3.10 provided that baselining has not been performed since the most recent CORE ALTERATION.

4.3.10.3 With one reactor coolant system recirculation loop not in operation, establish a baseline APRM and LPRM* neutron flux noise level value with THERMAL POWER less than or equal to the limit specified in Figure 3.3.10-1 prior to entering the APPLICABLE OPERATIONAL CONDITION of Specification 3.3.10 provided baselining has not been performed with one reactor coolant system recirculation loop not in operation since the most recent CORE ALTERATION.#

SURVEILLANCE REQUIREMENTS (Continued)

4.3.10.4 The APRM and LPRM* neutron flux noise levels shall be determined to be less than or equal to the limit of Specification 3.3.10 when operating within the APPLICABLE OPERATIONAL CONDITION of Specification 3.3.10:

a. At least once per 8 hours, and

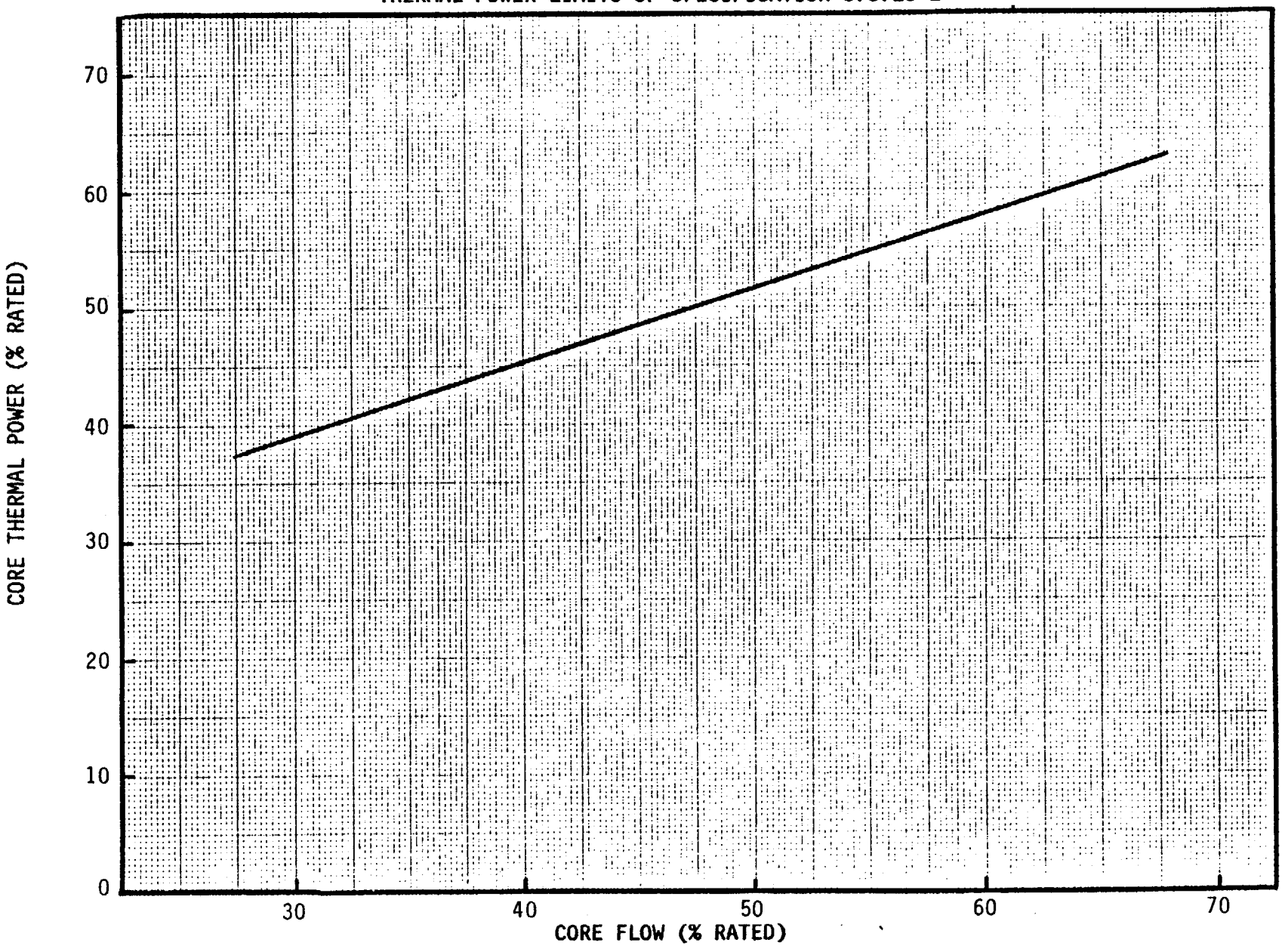
b. Within 30 minutes after completion of a THERMAL POWER increase of at least 5% of RATED THERMAL POWER.

*Detector levels A and C of one LPRM string per core octant plus detector levels A and C of one LPRM string in the center of the core should be monitored.

#The baseline data obtained in Specification 4.3.10.3 is applicable to operation with one reactor coolant system recirculation loop not in operation and THERMAL POWER greater than the limits specified in Figure 3.3.10-1.

FIGURE 3.3.10-1

THERMAL POWER LIMITS OF SPECIFICATION 3.3.10-1



3/4.4 REACTOR COOLANT SYSTEM

3/4.4.1 RECIRCULATION SYSTEM

RECIRCULATION LOOPS

LIMITING CONDITION FOR OPERATION

3.4.1.1 Two reactor coolant system recirculation loops shall be in operation.

APPLICABILITY: OPERATIONAL CONDITIONS 1* and 2*.

ACTION:

a. With one reactor coolant system recirculation loop not in operation:

1. Within 4 hours:

a) Place the recirculation flow control system in the Local Manual (Position Control) mode, and

b) The THERMAL POWER shall be less than or equal to the limit specified in Figure 3.4.1.1-1 or the provisions of Specification 4.3.10.3 are satisfied. With one reactor coolant system recirculation loop not in operation and with THERMAL POWER greater than the limit specified in Figure 3.4.1.1-1, and the provisions of Specification 4.3.10.3 having not been satisfied, initiate action within 15 minutes to reduce THERMAL POWER to less than or equal to the limit specified in Figure 3.4.1.1-1 within 4 hours. The provisions of Specification 4.3.10.3 must be satisfied prior to resuming power operation above the limit specified in Figure 3.4.1.1-1.

c) Increase the MINIMUM CRITICAL POWER RATIO (MCPR) Safety Limit by 0.01 to 1.07 per Specification 2.1.2, and,

d) Reduce the Maximum Average Planar Linear Heat Generation Rate (MAPLHGR) limit to a value of 0.84 times the two recirculation loop operation limit per Specification 3.2.1, and,

e) Reduce the Average Power Range Monitor (APRM) Scram and Rod Block and Rod Block Monitor Trip Setpoints and Allowable Values to those applicable for single recirculation loop operation per Specifications 2.2.1, 3.2.2, and 3.3.6.

f) Reduce the volumetric flow rate of the operating recirculation loop to $\leq$ 41,725** gpm.

*See Special Test Exception 3.10.4.

**This value represents the actual volumetric recirculation loop flow which produces 100% core flow at 100% THERMAL POWER. This value was determined during the Startup Test Program.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

g) Perform Surveillance Requirement 4.4.1.1.2 if THERMAL POWER is $\leq$ 25%*** of RATED THERMAL POWER or the recirculation loop flow in the operating loop is $\leq$ 10%*** of rated loop flow.

h) Reduce recirculation loop flow in the operating loop until the core plate ΔP noise does not deviate from the established core plate ΔP noise patterns by more than 100%.

i) With one reactor coolant system recirculation loop not in operation and THERMAL POWER greater than the limit specified in Figure 3.4.1.1-1 and core flow less than 39% of rated core flow, initiate action within 15 minutes to reduce THERMAL POWER to less than or equal to the limit specified in Fig. 3.4.1.1-1 or increase core flow to greater than or equal to 39% of rated core flow within 4 hours.

2. The provisions of Specification 3.0.4 are not applicable.

3. Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

b. With no reactor coolant system recirculation loops in operation, immediately initiate measures to place the unit in at least HOT SHUTDOWN within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.1.1.1 With one reactor coolant system recirculation loop not in operation, at least once per 8 hours verify that:

a. The recirculation flow control system is in the Local Manual (Position Control) mode, and

b. The volumetric flow rate of the operating loop is $\leq$ 41,725 gpm.**

**This value represents the actual volumetric recirculation loop flow which produces 100% core flow at 100% THERMAL POWER. This value was determined during the Startup Test Program.

***Final values were determined during Startup Testing based upon actual THERMAL POWER and recirculation loop flow which will sweep the cold water from the vessel bottom head preventing stratification.

SURVEILLANCE REQUIREMENTS (Continued)

c. The core plate ΔP noise is less than 200% of the established core plate ΔP noise patterns.

d. Core flow is greater than or equal to 39% of rated core flow when core THERMAL POWER is greater than the limit specified in Figure 3.4.1.1-1.

4.4.1.1.2 With one reactor coolant system recirculation loop not in operation, within no more than 15 minutes prior to either THERMAL POWER increase or recirculation loop flow increase, verify that the following differential temperature requirements are met if THERMAL POWER is $\leq$ 25%*** of RATED THERMAL POWER or the recirculation loop flow in the operating recirculation loop is $\leq$ 10%*** of rated loop flow:

a. $\leq$ 145°F between reactor vessel steam space coolant and bottom head drain line coolant,

b. $\leq$ 50°F between the reactor coolant within the loop not in operation and the coolant in the reactor pressure vessel, and

c. $\leq$ 50°F between the reactor coolant within the loop not in operation and the operating loop.

The differential temperature requirements of Specification 4.4.1.1.2b. and c. do not apply when the loop not in operation is isolated from the reactor pressure vessel.

4.4.1.1.3 Each reactor coolant system recirculation loop flow control valve shall be demonstrated OPERABLE at least once per 18 months by:

a. Verifying that the control valve fails "as is" on loss of hydraulic pressure (at the hydraulic control unit), and

b. Verifying that the average rate of control valve movement is:

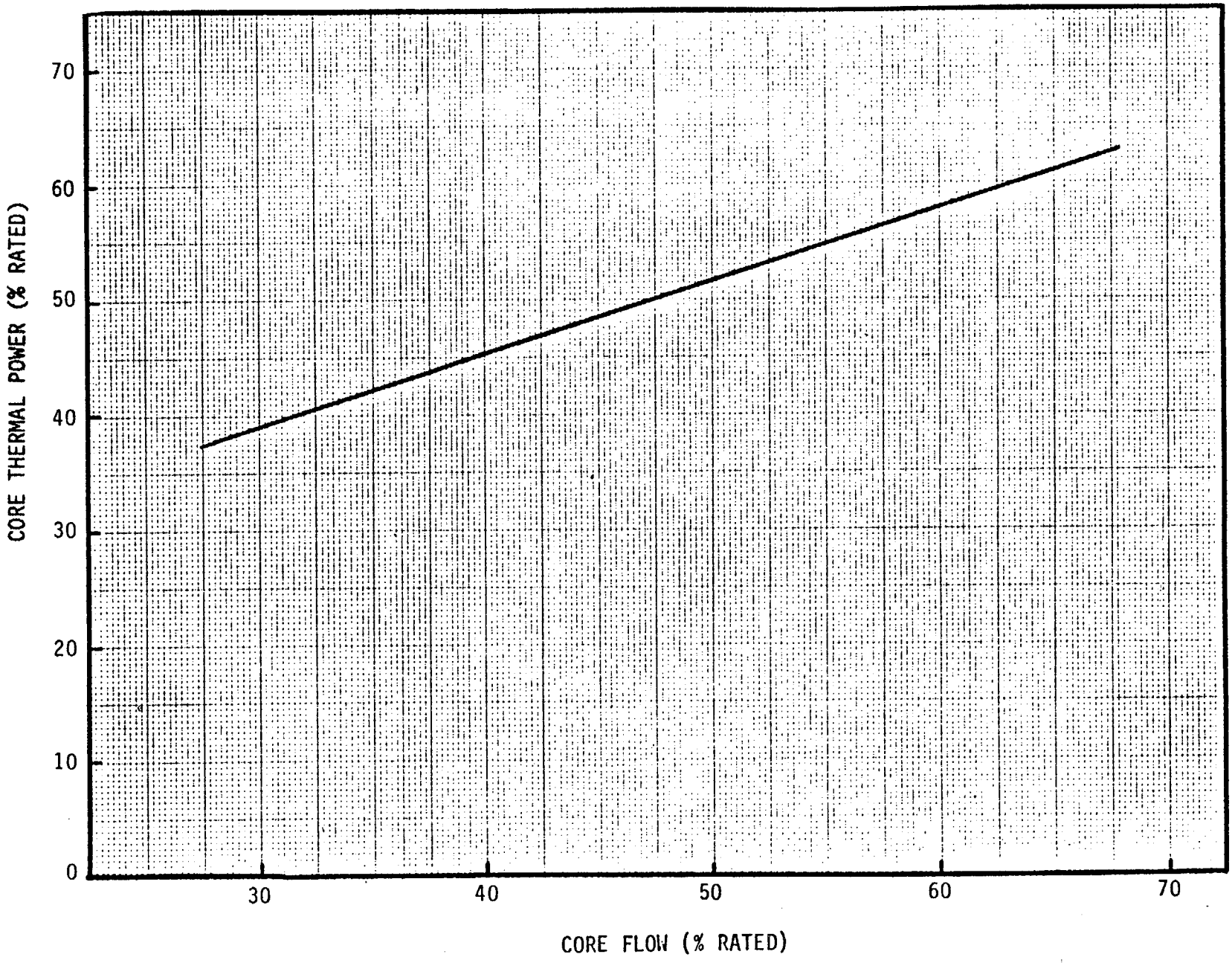
1. Less than or equal to 11% of stroke per second opening, and

2. Less than or equal to 11% of stroke per second closing.

***Final values were determined during Startup Testing based upon actual THERMAL POWER and recirculation loop flow which will sweep the cold water from the vessel bottom head preventing stratification.

FIGURE 3.4.1.1-1

THERMAL POWER LIMITS OF SPECIFICATION 3.4.1.1-1



MONITORING INSTRUMENTATION (Continued)

3/4.3.7.12 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The alarm/trip setpoints for these instruments shall be calculated and adjusted in accordance with the methodology and parameters in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. This instrumentation also includes provisions for monitoring and controlling the concentrations of potentially explosive gas mixtures in the WASTE GAS HOLDUP SYSTEM. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

3/4.3.8 TURBINE OVERSPEED PROTECTION SYSTEM

This specification is provided to ensure that the turbine overspeed protection system instrumentation and the turbine speed control valves are OPERABLE and will protect the turbine from excessive overspeed. Protection from turbine excessive overspeed is required since excessive overspeed of the turbine could generate potentially damaging missiles which could impact and damage safety-related components, equipment or structures.

3/4.3.9 FEEDWATER SYSTEM/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

The feedwater system/main turbine trip system actuation instrumentation is provided to initiate the feedwater system/main turbine trip system in the event of reactor vessel water level equal to or greater than the level 8 setpoint associated with a feedwater controller failure.

3/4.3.10 NEUTRON FLUX MONITORING INSTRUMENTATION

At the high power/low flow corner of the operating domain, a small probability of limit cycle neutron flux oscillations exists depending on combinations of operating conditions (e.g., rod patterns, power shape). To provide assurance that neutron flux limit cycle oscillations are detected and suppressed, APRM and LPRM neutron flux noise levels should be monitored while operating in this region.

Stability tests at operating BWRs were reviewed to determine a generic region of the power/flow map in which surveillance of neutron flux noise levels should be performed. A conservative decay ratio of 0.6 was chosen as the bases for determining the generic region for surveillance to account for the plant to plant variability of decay ratio with core and fuel designs. This generic region has been determined to correspond to a core flow of less than or equal to 45% of rated core flow and a thermal power greater than that specified in Figure 3.4.1.1-1 (Reference).

MONITORING INSTRUMENTATION (Continued)

NEUTRON FLUX MONITORING INSTRUMENTATION (Continued)

Neutron flux noise limits are also established to ensure early detection of limit cycle neutron flux oscillations. BWR cores typically operate with neutron flux noise caused by random boiling and flow noise. Typical neutron flux noise levels of 1-12% of rated power (peak-to-peak) have been reported for the range of low to high recirculation loop flow during both single and dual recirculation loop operation. Stability tests at operating BWRs have demonstrated that when stability related neutron flux limit cycle oscillations occur they result in peak-to-peak neutron flux limit cycles of 5-10 times the typical values. Therefore, actions taken to reduce neutron flux noise levels exceeding three (3) times the typical value are sufficient to ensure early detection of limit cycle neutron flux oscillations.

Typically, neutron flux noise levels show a gradual increase in absolute magnitude as core flow is increased (constant control rod pattern) with two reactor recirculation loops in operation. Therefore, the baseline neutron flux noise level obtained at a specific core flow can be applied over a range of core flows. To maintain a reasonable variation between the low flow and high flow ends of the flow range, the range over which a specific baseline is applied should not exceed 20% of rated core flow with two recirculation loops in operation. Data from tests and operating plants indicate that a range of 20% of rated core flow will result in approximately a 50% increase in neutron flux noise level during operation with two recirculation loops. Baseline data should be taken near the maximum rod line at which the majority of operation will occur. However, baseline data taken at lower rod lines (i.e., lower power) will result in a conservative value since the neutron flux noise level is proportional to the power level at a given core flow.

In the case of single loop operation (SLO), the normal neutron flux noise may increase more rapidly when reverse flow occurs in the inactive jet pumps. This justifies a smaller flow range under high flow SLO conditions. Baseline data should be taken at flow intervals which correspond to less than a 50% increase in APRM neutron flux noise level. If baseline data are not specifically available for SLO, then baseline data with two recirculation loops in operation can be conservatively applied to SLO since for the same core flow SLO will exhibit higher neutron flux noise levels than operation with two loops. However, because of reverse flow characteristics of SLO, the core flow/drive flow relationship is different than the two loop relationship and therefore the baseline data for SLO should be based on the active loop recirculation drive flow, and not the core flow. Because of the uncertainties involved in SLO at high reverse flows, baseline data should be taken at or below the power specified in Figure 3.4.1.1-1. This will result in approximately a 25% conservative baseline value if compared to baseline data taken near the rated rod line and will therefore not result in an overly restrictive baseline value, while providing sufficient margin to cover uncertainties associated with SLO.

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

SAFETY EVALUATION

AMENDMENT NO. 16 TO NPF-21

WPPSS NUCLEAR PROJECT NO.2

DOCKET NO. 50-397

INTRODUCTION

By Reference 1, Washington Public Power Supply System (WPPSS) proposed Technical Specification changes for WNP-2. The amendment would add a new Technical Specification Section 3/4.3.10, entitled Neutron Flux Monitoring Instrumentation and supporting licensing bases and would modify Technical Specification Section 3/4.4.1 (Recirculation Loops) to permit operation at a higher power level than is currently authorized under Single Loop Operation (SLO).

EVALUATION

The WNP-2 submittal provides an improved means for maintaining thermal-hydraulic stability by restricting power level to values that depend on flow rate instead of a constant upper limit. In addition, it requires operators to monitor LPRM flux signals as well as APRM signals in order to avoid or control abnormal neutron flux oscillations. The staff has reviewed the changes proposed by WPPSS and finds them acceptable for the following reasons:

1. They meet the recommendations made by General Electric in SIL 380 (Ref. 2) which have been found by the staff (Refs. 3, 4) to be an acceptable method for meeting General Design Criteria 10 and 12 with regard to Thermal-Hydraulic Stability.

2. The proposed Technical Specification changes are very similar to those which were previously proposed by Iowa Electric for Duane Arnold. The Duane Arnold Tech Specs have been reviewed and approved by the staff in Reference 5.

EVALUATION OF WASHINGTON STATE COMMENTS

The State of Washington's Energy Facility Site Evaluation Council in Olympia was contacted by telephone on July 17, 1985. Discussions were held with Mr. William Fitch, Executive Secretary and Mr. Michael Mills, Engineer for the Council. A concern regarding the safety implications of operation with a single feedwater pump in conjunction with single recirculation loop operation was raised.

The two issues are entirely separate and are governed by two separate Technical Specifications. The issue of the flow-power instability that is a concern when the power level is high and the recirculation flow rate is low is not affected by the source of the feedwater-one pump or two. The feedwater flow rate must match the power level and as long as that relationship is maintained the flow-power instability is unaffected. For a given recirculation flow rate, the

maximum acceptable power level is governed by the onset of the flow-power instability which is indicated by a significant increase in the noise levels of both the core plate pressure drop and the neutron flux.

On July 18, 1985 the Chairman of the Council, Mr. Curtis Eschols, called to say that he and many on his committee have not had sufficient time for a meaningful review of the amendment change requested by the Supply System. Therefore, as a representative of the State of Washington, he declined to take a position relative to safety.

FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

A proposed amendment to an operating license for a facility involves no significant hazards consideration if 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; (2) create the possibility of a new or different kind of accident from an accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

We have evaluated the licensee's request for the proposed Technical Specifications for compliance with the above cited standards:

1. Consideration of Probability and Consequences of Accidents

Our evaluation of the proposed changes indicates that the principal accident associated with a single recirculation loop operating would be an inadvertent startup of the idle recirculation loop pump causing a transient. However, such a transient was evaluated in the WNP-2 Final Safety Analysis Report (FSAR) and found to satisfy the Commission's regulations. In addition, the licensee has proposed more restrictive Technical Specification changes related to MCPR limits, flow-biased scram and rod block setpoints, and reduced MAPLHGR operating limits, to ensure that the probabilities and the consequences of accidents with single recirculation loop operation will not be significantly increased. We have also evaluated the implication of thermal-hydraulic stability for both single and dual loop operations after the licensee's proposed Technical Specification changes based on the GE recommendations in SIL 380, Revision 1 are incorporated. Our evaluation shows that the proposed changes would alleviate the concerns related to the thermal-hydraulic instability by adding surveillance requirements for detecting thermal-hydraulic instabilities and specifying the remedial operator actions for responding to them. Such operator actions will also assure that there will be no significant increase in the probability or consequences of an accident. Based on the above discussion, we find that the proposed changes are not expected to significantly increase the probability or consequences of previously evaluated accidents.

2. Consideration of Possibility of a New or Different Kind of Accident

The WNP-2 operation with one recirculation loop is not expected to create the possibility of a new or different kind of accident from any previously analyzed, as all abnormal operating transients which could be initiated with single loop

operation, such as an inadvertent startup of an idle recirculation pump or pump trip have already been analyzed in the FSAR, and reviewed and accepted by the staff.

For single and dual loop operation, the addition of the surveillance requirements and remedial actions for thermal-hydraulic instability detection and response involve normal plant operating practices and, therefore, are not expected to create a new or different kind of accident from any previously analyzed in the FSAR.

3. Consideration of Reduction in a Margin of Safety

The licensee has proposed the revised operating limits and procedures for the proposed single loop operation. Our evaluation of the licensee's proposal indicated that the proposed changes will ensure that the FSAR margins of safety will not be reduced during normal operation and with one recirculation pump not operating. Our conclusions are based on our review of the evaluations by GE in support of the single loop operation presented in the GE report NEDO-24011.

For single loop operation, the additional surveillance requirements and remedial actions required of the operator for detection of and response to thermal-hydraulic instability will increase the present margin of safety.

Based on the above considerations the staff concludes that the proposed amendment meets the Commission's standards in 10 CFR 50.92(c). Therefore, the staff has made a final determination that the application involves no significant hazards consideration.

BASIS FOR EMERGENCY SITUATION

This amendment is being issued on an emergency basis. Prior to the scheduled maintenance, M-3, outage in the spring of 1985, a reactor recirculation flow control valve hydraulic line weld failed. The line was repaired and the subsequent failure analysis attributed the failure to excessive piping vibration. Data collected and analyzed from vibration instruments installed on recirculation pump B indicated the cause to be excessive pump vibration. During the M-3 outage the pump was partially disassembled and damage was found in the radial bearing and seal assembly. The failure of the bearing was considered by the pump manufacturer's technical representative, a GE technical representative and the Supply System's technical personnel to have caused the vibration problem. The pump was reassembled and tested while in cold shutdown. The vibration data collected during the test were evaluated and indicated that the problem had been solved. During power escalation following the M-3 outage, the vibration reappeared and increased to unacceptable levels. The vibration levels experienced are such that extended operation at rated speed is not prudent.

The Supply System could not have anticipated the reoccurrence of high vibration levels in pump B. Pump technical representatives believed that the problem had been identified and repaired and data from a test of the pump indicated the

repairs to be successful. Nevertheless on July 8 the vibration levels of the pump exceeded the manufacturer's recommended shutdown limits and the pump was subsequently secured. Between July 8 and July 16 the plant operated with a single recirculation loop while engineering options for repair were considered. On July 17 a shutdown was performed which allowed visual examination of the pump and other attempts to mitigate the effects of the vibrations. The plant has since returned to power and the pump was tested at 60 Hz with unsatisfactory results; consequently, it was concluded that pump repair must be accomplished as soon as possible. This repair will require several weeks after spare parts are obtained which may require several months. In the meantime the plant is operating on a single recirculation loop and, under the present Technical Specifications, is limited to fifty percent power. Safe operation on one recirculation loop at power levels considerably in excess of fifty percent has previously been demonstrated and approved by the staff. (See EVALUATION section, above). Thus on July 17, 1985 it became apparent that the emergency technical specification change was necessary to avoid continued derating and the request was made the same day.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change to the requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant change in the types or significant increase in the amounts 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 determined that this amendment involves no significant hazards consideration. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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.

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.

Dated: July 19, 1985

REFERENCES

1. Letter, G. C. Sorensen (WPPSS) to W. R. Butler (NRC), "Nuclear Plant No. 2 Operating License NPF-21, Request for Technical Specification Amendment Under Emergency Circumstances," dated July 17, 1985.

2. GE Service Information Letter (SIL), No. 380, Revision 1, dated February 10, 1984.

3. Letter, C. O. Thomas (NRC) to H. C. Pfefferlen (GE), "Acceptance for Referencing of Licensing Topical Report NEDE-24011, Rev. 6, Amendment 8, "Thermal-Hydraulic Stability Amendment to GESSAR II,"" April 24, 1985.

4. Memo., H. R. Denton to V. Stello, "Close Out Generic Issue #B-19-Thermal-Hydraulic Stability," May 21, 1985.

5. Letter, M. C. Thadani (NRC), to L. Lui (Iowa Electric), dated May 28, 1985.