May 15, 1992

Docket No. 50-397

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

Dear Mr. Sorensen:

SUBJECT: ISSUANCE OF AMENDMENT FOR THE WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2 (TAC NO. M82918)

The Commission has issued the enclosed Amendment No. 105 to the Facility Operating License No. NPF-21 for WPPSS Nuclear Project No. 2. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated February 21, 1992.

The amendment revises the TS to reflect the addition of an independent, safety-grade, safety/relief valve position indicator.

A copy of the related Safety Evaluation is also enclosed. A notice of issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,
Original signed by
William M. Dean, Project Manager
Project Directorate V
Division of Reactor Projects III/IV/V Office of
Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 105 to NPF-21
2. Safety Evaluation

cc w/enclosures:
See next page

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NAME	DFoster	WDean	RBachmann	TQuay
DATE	4/23/92	4/24/92	5/1/92	5/15/92

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

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William M. Dean, Project Manager
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See next page

Mr. G. C. Sorensen
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

NUCLEAR PROJECT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 105
License No. NPF-21

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by the Washington Public Power Supply System (licensee) dated February 21, 1992, 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 rules and 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;

   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. 105 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 and must be fully implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

for Charles M. Trammell
Theodore R. Quay, Director
Project Directorate V
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 15, 1992

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 105 TO 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. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE	INSERT
3/4 3-71	3/4 3-71
3/4 3-73	3/4 3-73
3/4 3-74	3/4 3-74
3/4 4-7a	3/4 4-7a
B 3/4 4-1a	B 3/4 4-1a

TABLE 3.3.7.5-1

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	REQUIRED NUMBER OF CHANNELS	MINIMUM CHANNELS OPERABLE	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. Reactor Vessel Pressure	2	1	1, 2	80
2. Reactor Vessel Water Level	2	1	1, 2	80
3. Suppression Chamber Water Level	2	1	1, 2	80
4. Suppression Chamber Water Temperature	2/sector	1/sector	1, 2	80
5. Suppression Chamber Air Temperature	2	1	1, 2	80
6. Drywell Pressure	2	1	1, 2	80
7. Drywell Air Temperature	2	1	1, 2	80
8. Drywell Oxygen Concentration	2	1	1, 2	80
9. Drywell Hydrogen Concentration	2	1	1, 2	80
10. Safety/Relief Valve Position Indicators*	1/valve	1/valve	1, 2	82
11. Suppression Chamber Pressure	2	1	1, 2	80
12. Condensate Storage Tank Level	2	1	1, 2	80
13. Main Steam Line Isolation Valve Leakage Control System Pressure	2	1	1, 2	80

*NOTE - Either the acoustic monitor or valve stem position indicator satisfies these requirements.

Table 3.3.7.5-1 (Continued)

ACCIDENT MONITORING INSTRUMENTATION

ACTION STATEMENTS

ACTION 80 -

a. With the number of OPERABLE accident monitoring instrumentation channels less than the Required Number of Channels shown in Table 3.3.7.5-1, restore the inoperable channel(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours.

b. With the number of OPERABLE accident monitoring instrumentation channels less than the Minimum Channels OPERABLE requirements of Table 3.3.7.5-1, restore the inoperable channel(s) to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

ACTION 81 - With the number of OPERABLE accident monitoring instrumentation channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or:

a. Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and

b. In lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

ACTION 82 - With the number of OPERABLE Safety/Relief Valve Position Indicator instrumentation channels less than the Minimum Channels OPERABLE requirement of Table 3.3.7.5-1,

a. Restore an inoperable channel to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours, and

b. Verify operability and perform daily surveillance of the Tailpipe Temperature Monitoring instrument for the affected SRV until the Minimum Channels OPERABLE requirement is satisfied. Absent an OPERABLE Tailpipe Temperature monitor for the affected SRV restore the inoperable Tailpipe Temperature Monitor to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

TABLE 4.3.7.5-1

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	APPLICABLE OPERATIONAL CONDITIONS
1. Reactor Vessel Pressure	M	R	1, 2
2. Reactor Vessel Water Level	M	R	1, 2
3. Suppression Chamber Water Level	M	R	1, 2
4. Suppression Chamber Water Temperature	M	R	1, 2
5. Suppression Chamber Air Temperature	M	R	1, 2
6. Primary Containment Pressure	M	R	1, 2
7. Drywell Air Temperature	M	R	1, 2
8. Drywell Oxygen Concentration	M	R	1, 2
9. Drywell Hydrogen Concentration	M	Q	1, 2
10. Safety/Relief Valve Position Indicators*	M	R	1, 2
11. Suppression Chamber Pressure	M	R	1, 2
12. Condensate Storage Tank Level	M	R	1, 2
13. Main Steam Line Isolation Valve Leakage Control System Pressure	M	R	1, 2
14. Neutron Flux:			
APRM	M	R	1, 2
IRM	M	R	1, 2
SRM	M	R	1, 2
15. RCIC Flow	M	R	1, 2
16. HPCS Flow	M	R	1, 2
17. LPCS Flow	M	R	1, 2

*This includes acoustic monitor, valve stem position, and tailpipe temperature instrument channels.

3/4.4.2 SAFETY/RELIEF VALVES (Continued)

the dual purpose safety/relief valves in their ASME Code qualified mode (spring lift) of safety operation.

The overpressure protection system must accommodate the most severe pressurization transient. There are two major transients that represent the most severe abnormal operational transient resulting in a nuclear system pressure rise. The evaluation of these events with the final plant configuration has shown that the MSIV closure is slightly more severe when credit is taken only for indirect derived scrams; i.e., a flux scram. Utilizing this worse case transient as the design basis event, a minimum of 12 safety/relief valves are required to assure peak reactor pressure remains within the Code limit of 110% of design pressure.

Testing of safety/relief valves is normally performed at lower power. It is desirable to allow an increased number of valves to be out of service during testing. Therefore, an evaluation of the MSIV closure without direct scram was performed at 25% of RATED THERMAL POWER assuming only 4 safety/relief valves were operable. The results of this evaluation demonstrate that any 4 safety/relief valves have sufficient flow capacity to assure that the peak reactor pressure remains well below the code limit of 110% of design pressure.

TMI Action Plan Item II.D.3, "Direct Indication of Relief and Safety Valve Position," states that reactor coolant system relief and safety valves shall be provided with a positive indication in the control room derived from a reliable valve-position detection device or a reliable indication of flow in the discharge pipe. Each WNP-2 SRV has both a valve stem position indication device and an acoustic monitor flow detection device which independently meet the requirements of Item II.D.3. Hence failure of one device does not impact compliance to II.D.3 and entry into Limiting Condition for Operation action statement 3.4.2.c is required only for inoperability of both devices associated with a specific SRV.

Demonstration of the safety/relief valve lift settings will be performed in accordance with the provisions of Specification 4.0.5.

3/4.4.3 REACTOR COOLANT SYSTEM LEAKAGE

3/4.4.3.1 LEAKAGE DETECTION SYSTEMS

The RCS leakage detection systems required by this specification are provided to monitor and detect leakage from the reactor coolant pressure boundary. These detection systems are consistent with the recommendations of Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems," May 1973.

3/4.4.3.2 OPERATIONAL LEAKAGE

The allowable leakage rates from the reactor coolant system have been based on the predicted and experimentally observed behavior of cracks in pipes. The normally expected background leakage due to equipment design and the detection capability of the instrumentation for determining system leakage was also considered. The evidence obtained from experiments suggests that for leakage somewhat greater than that specified for UNIDENTIFIED LEAKAGE the probability is small that the imperfection or crack associated with such leakage would grow rapidly. However, in all cases, if the leakage rates exceed the values specified or the leakage is located and known to be PRESSURE BOUNDARY LEAKAGE, the reactor will be shut down to allow further investigation and corrective action. Service sensitive reactor coolant system Type 304 and 316 austenitic stainless steel piping; i.e., those that are subject to high stress or that certain relatively stagnant, intermittent, or low flow fluids, requires additional surveillance and leakage limits.

The surveillance requirements for RCS pressure isolation valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS pressure isolation valves is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.

3/4.4.4 CHEMISTRY

The water chemistry limits of the reactor coolant system are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. The effect of chloride is not as great when the oxygen concentration in the coolant is low, thus the 0.2 ppm limit on chlorides is permitted during POWER OPERATION. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present so a 0.5 ppm concentration of chlorides is not considered harmful during these periods.

Conductivity measurements are required on a continuous basis since changes in this parameter are an indication of abnormal conditions. When the conductivity is within limits, the pH, chlorides and other impurities affecting conductivity must also be within their acceptable limits. With the conductivity meter inoperable, additional samples must be analyzed to ensure that the chlorides are not exceeding the limits.

The surveillance requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.

3/4.4.2 SAFETY/RELIEF VALVES

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

valve(s) within 2 minutes or if suppression pool average water temperature is 110°F or greater, place the reactor mode switch in the Shutdown position.

c. With both the acoustic monitor and valve stem position indicator for one or more safety/relief valve(s) inoperable, restore either the acoustic monitor or valve stem position indicator to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.4.2 The position indicators for each safety/relief valve shall be demonstrated OPERABLE by performance of a:

a. CHANNEL CHECK at least once per 31 days, and a

b. CHANNEL CALIBRATION at least once per 18 months.**

**The provisions of Specification 4.0.4 are not applicable provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the test.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 105 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 February 21, 1992 (GO2-92-046), Washington Public Power Supply System submitted a request for changes to the Technical Specifications (TS) for Nuclear Project No. 2. Specifically, the Supply System requested that specifications 3.4.2 (Safety/Relief Valves), including the bases, and 3.3.7.5 (Accident Monitoring Instrumentation) be revised to incorporate the redundancy in component monitoring provided by the recently installed Safety/Relief Valve (SRV) position indicators.

2.0 BACKGROUND

By letter dated November 25, 1991 (GO2-91-215), the Supply System submitted an emergency request to change TS to allow the plant to remain at power despite an inoperable SRV acoustic monitor. Both Action C for Specification 3.4.2 and Action 80(a) for Table 3.3.7.5-1 require that the plant be shut down if an inoperable SRV indicator channel is not restored to operable status within 7 days. Similar relief requests for inoperable relief valve acoustic monitors were submitted on October 13, 1987, on July 25, 1988, and on March 2, 1990. Installation of the redundant SRV position indicators is a result of efforts taken by the licensee to alleviate the consequences of the repeated failures of the SRV acoustic monitors.

3.0 EVALUATION

The requirement for operability of the accident monitoring instrumentation is based on the need to ensure that sufficient information is available on selected plant parameters to monitor and assess important variables following an accident. TMI Action Plan Item II.D.3, "Direct Indication of Relief and Safety Valve Position," requires that "reactor coolant system relief and safety valves shall be provided with a positive indication in the control room derived from a reliable valve-position detection device or a reliable indication of flow in the discharge pipe." Currently, the WNP-2 TS require two instrumentation channels for providing this information on SRV position.

One channel uses an acoustic monitor and the second channel uses a thermocouple downstream of the valve that senses a temperature increase in the downstream piping if there is flow past the SRV.

The licensee has now added a third position indicating device, a direct reading SRV stem position indicator. The system utilizes linear voltage differential transformers mounted directly on the SRVs to provide a "closed/not closed" indication and annunciation. The design is safety grade with seismic and environmental qualifications and is powered from a 1E electrical source.

As noted above, the licensee previously relied on the acoustic monitors and the thermocouples as the devices used to determine SRV position. However, the thermocouples, by themselves, do not fully satisfy the TMI Action Plan Item II.D.3 noted above. In combination with other plant indicators (e.g., suppression pool temperature, tailpipe temperature alarm), they can provide an indirect indication of SRV position. NUREG-0892, "Safety Evaluation Report for WNP-2," Supplement 4, dated March 1982, documents the review and approval of the use of acoustic monitors with tailpipe temperature backup for SRV position indication. Since the newly installed SRV stem position indication instrument is equal to and independent of the acoustic monitor, the Supply System proposed that TS 3.4.2 be revised to reflect that both of the two safety-related position indication systems must be inoperable before an ACTION statement is required to be entered. Also, the Supply System proposed that the applicable entry in the REQUIRED NUMBER OF CHANNELS column of Table 3.3.7.5-1 be reduced from "2" to "1" and that a new ACTION statement (82) be added that retains the same actions that currently are required if the acoustic monitor is inoperable for any SRV. However, this proposed ACTION statement would only be entered if both the acoustic and the stem position indication systems were inoperable. This ACTION statement also more clearly elucidates how the thermocouples are to be used if both safety grade indicators are inoperable.

Basically, the same actions are required with the proposed TS change as already exist if the SRV position indication system meeting the TMI Action Plan is inoperable. The only difference is that there are now two such systems which must be declared inoperable before any actions are required. Although the tailpipe temperature thermocouples, in combination with other plant indications are a reliable backup method of indirect valve position indication, they were not designed as safety related equipment. Relying on the operability of nonsafety grade equipment for movement into Operational Conditions is overly restrictive. While reducing the REQUIRED NUMBER OF CHANNELS from "2" to "1" is a decrease from the present requirements, the enhanced plant safety achieved by using either stem position or acoustic monitor indications adequately mitigates this consideration. Regulatory Guide 1.97, Revision 2, which provides the basis for TMI Action Plan Item II.D.3, identifies SRV position indication as a category two, Type D variable. Category two, Type D variables are not required to be redundant. Therefore, the requirement to have two SRV position indicating systems operable is excessive. This fact supports the note that the licensee proposed adding to TS Tables 3.3.7.5-1 and the changes to TS Bases 3/4.4.2.

Taking into consideration the requirements of TMI Action Plan Item II.D.3 regarding reactor coolant system relief and safety valve position indication systems and the increased SRV position monitoring capacity beyond that approved in the WNP-2 SER (NUREG-0892, Supplement 4, March 1982), the staff has found the proposed TS changes to be acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes a surveillance requirement. The NRC staff has determined that the 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (57 FR 13139). Accordingly, the 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 STATE CONSULTATION

In accordance with the Commission's regulations, the Washington State official was notified of the proposed issuance of the amendment. The State official had no comments.

6.0 CONCLUSION

The Commission has 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 the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: William Dean

Date: May 15, 1992