



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

Docket File

March 7, 1990

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

Dear Mr. Sorensen:

SUBJECT: ISSUANCE OF AMENDMENT NO. 78 TO FACILITY OPERATING LICENSE
NO. NPF-21 - WPPSS NUCLEAR PROJECT NO. 2 (TAC NO. 76072)

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 2, 1990 (G02-90-038).

This amendment revises Technical Specifications 3.3.7.5, "Accident Monitoring Instrumentation," and 3.4.2, "Safety/Relief Valves. Specifically the amendment revises the surveillance requirements for the two specifications by providing that the acoustic monitors for the safety/relief valves may be inoperable until the fifth refueling outage, currently scheduled to begin on or about April 13, 1990. It also modifies the footnote on Table 4.3.7.5-1, "Accident Monitoring Instrumentation Surveillance Requirements", specifying that additional surveillances of tailpipe temperatures will be performed on the valves. Prior to the amendment request, the specifications required that the monitors be returned to operability within seven days or that the plant be shut down.

WNP-2 entered action statements leading to plant shutdown on February 28, 1990 under the requirement of technical specification sections 3.3.7.5 and 3.4.1, and requested relief from those action statements to permit the unit to remain at power. Compensatory measures were proposed to ensure that safety is not impaired. Relief is granted by issuance of this amendment.

Because this amendment is needed to permit continued operation of the facility, this amendment is authorized on an emergency basis. The staff reviewed the circumstances associated with your request and concluded that you provided a sufficient basis for finding that the situation could not have been avoided by prior application. Therefore, in accordance with 10 CFR 50.91(a)(5), a valid emergency existed.

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Mr. G. C. Sorensen

- 2 -

March 7, 1990

A copy of the related safety evaluation supporting the amendment is enclosed. The notice of issuance and final determination of no significant hazards consideration and opportunity for hearing will be included with the Commission's biweekly Federal Register notices.

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

cc w/enclosures:

See next page

A copy of the related safety evaluation supporting the amendment is enclosed. The notice of issuance and final determination of no significant hazards consideration and opportunity for hearing will be included with the Commission's biweekly Federal Register notices.

Sincerely,

original signed by

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

cc w/enclosures:
See next page

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[WNP2 AMD 75983]

Note: Concurrence indicates final position is ok. However, the other position indicators may not ~~be~~ indicate a stuck open relief valve if a LOCA was in progress. ~~the~~
(no safety significance)

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. 78
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 2, 1990 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.

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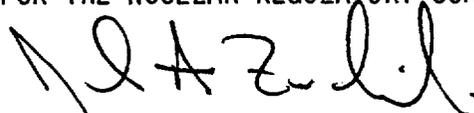
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-21 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 78, 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



John A. Zwolinski, Acting Assistant Director
for Region V
Division of Reactor Projects - III
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 7, 1990

ENCLOSURE TO LICENSE AMENDMENT NO. 78

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.

<u>AMENDMENT PAGE</u>	<u>OVERLEAF PAGE</u>
3/4 3-71	3/4 3-72
3/4 3-74	3/4 3-73
3/4 4-7	3/4 4-8

WASHINGTON NUCLEAR - UNIT 2
3/4 3-71
AMENDMENT NO. 78

TABLE 3.3.7.5-1

ACCIDENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>REQUIRED NUMBER OF CHANNELS</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE OPERATIONAL CONDITIONS</u>	<u>ACTION</u>
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	2/valve*	1/valve	1, 2	80
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 - The acoustic monitors may be inoperable until the fifth Refueling Outage scheduled for No Later Than May 15, 1990 without applying the shutdown requirement of Action 80.a.

WASHINGTON NUCLEAR - UNIT 2
3/4 3-74
AMENDMENT NO. 78

TABLE 4.3.7.5-1

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>APPLICABLE OPERATIONAL CONDITIONS</u>
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

*Surveillance of the OPERABLE Tailpipe Temperature instrument channels will be performed daily until the acoustic monitors are declared OPERABLE.

REACTOR COOLANT SYSTEM

3/4.4.2 SAFETY/RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.2 The safety valve function of at least 12 of the following reactor coolant system safety/relief valves shall be OPERABLE with the specified code safety valve function lift settings:*

- 2 safety/relief valves @ 1150 psig +1%/-3%
- 4 safety/relief valves @ 1175 psig +1%/-3%
- 4 safety/relief valves @ 1185 psig +1%/-3%
- 4 safety/relief valves @ 1195 psig +1%/-3%
- 4 safety/relief valves @ 1205 psig +1%/-3%

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

- a. With the safety valve function of one or more of the above required safety/relief valves inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- b. With one or more safety/relief valves stuck open, provided that suppression pool average water temperature is less than 90°F, close the stuck open safety/relief valve(s); if unable to close the open 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 one or more safety/relief valve acoustic monitors inoperable, restore the inoperable monitor(s) 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 acoustic monitor 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 lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures.

**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.

***The acoustic monitors may be inoperable until the fifth Refueling Outage scheduled for No Later Than May 15, 1990 without applying the shutdown requirement.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 78 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 2, 1990 (G02-90-032) Washington Public Power Supply System proposed certain changes to the Technical Specifications for Nuclear Project No. 2. Specifically the Supply System requested that notes be added to Specification 3.4.2, "Safety Relief Valves", and to Tables 3.3.7.5-1, "Accident Monitoring Instrumentation", and 4.3.7.5-1, "Accident Monitoring Instrumentation Surveillance Requirements", to allow the acoustic monitors on the SRVs to be inoperable until the plant shuts down for its next scheduled refueling outage. The note on Table 4.3.7.5-1 specifies compensatory surveillances of the tailpipe temperatures of the valves.

Action c for Specification 3.4.2, "Safety Relief Valves", and action 80.a for Technical Specification Table 3.3.7.5-1, "Accident Monitoring Instrumentation", require that the plant be shutdown if an inoperable safety/relief valve indicator channel is not restored to operable status within seven (7) days. On February 27 the licensee received a report of a recent environmental qualification failure of a replacement connector/cable assembly for the acoustic monitors. The licensee's assessment of the qualification test report led them to the conclusion that the monitor cables have the potential for failure when subjected to a LOCA following radiological and thermal aging. Accordingly, the Supply System entered the seven day LCO at 5:00 p.m. PST on February 28, 1990. It has been determined that the plant will be required to be shutdown and cooled down in order to replace the cabling for the acoustic monitors, unless an amendment is granted to allow the Supply System to continue to operate until the next scheduled outage. The licensee is scheduled to shutdown for a refueling outage on or about April 13, 1990.

2.0 EVALUATION

Relief requests for inoperable relief valve acoustic monitors were made by the licensee on October 13, 1987, on July 25, 1988 and on February 14, 1990. The Supply System has made modifications to the acoustic monitors and changed procedures to increase the reliability of the monitors. The environmental qualification testing which identified the cabling inadequacy was being done in conjunction with a design change that would allow accessibility, without plant shutdown.

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 (e.g., SRV position indication) to monitor and assess important variables following an accident. TMI Action Plant 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". The technical specifications for WNP-2 require two instrumentation channels for providing this information on valve position. One channel utilizes an acoustic monitor. The second channel utilizes thermocouples to detect a temperature increase indicative of flow past the valve.

The redundancy contributes to reduction in accident risk. The loss of either channel on one or more SRVs does not prevent accurate determination of the position of the associated SRV(s). Total loss of position indication would allow an SRV to be stuck in the open position without this being known immediately to the operator. As discussed in the safety analysis of this event (WNP-2 FSAR 15.1.4), the operator response to this event is triggered by a suppression pool temperature alarm not by an "open" alarm from the SRV position indication instruments.

The mitigating actions for the stuck open valve are to locate and attempt to close the open SRV and to establish suppression pool cooling within 20 minutes. As discussed in the FSAR analysis, even if the valve fails to close (worst case) the consequences of the event are mild. Hence the failure of an acoustic monitor causing an operator to review other instrumentation (as listed below) to determine which valve is open does not increase the severity of the transient.

The loss of position indication of a Safety/Relief Valves does not reduce the capability of the SRV to perform its intended function, nor does it prevent accurate determination of the position of the associated SRV.

During normal operation or during a small break LOCA, the following mitigating and compensatory factors provide assurance that the valve position is reliably known:

1. Tail pipe temperature is monitored and recorded. An increase in temperature would indicate that the valve is open, and steam was entering the suppression pool via the tail pipe. This indication has remained capable of indicating valve actuation since the failed monitor was identified. Channel checks of the temperature recorder are currently performed monthly per LCO 3/4.3.7.5. Until the acoustic monitors for MSRVRV-2C and 2D are declared operable, the tail pipe temperature surveillance will be performed daily instead of monthly. A control room annunciator alarms on high tail pipe temperature (greater than 250°F). An annunciator response procedure addressing the tailpipe temperature alarm will be revised to uniquely identify appropriate actions for the relief valves.

2. Suppression Pool temperature indication is available, and is set to alarm at 85°F. An increase in suppression pool temperature would indicate an open SRV. This parameter will be monitored on a daily basis.
3. Suppression Pool level indication is available, and is set to alarm at +0.5"/-1" of Normal Level (466'3"). An increase in suppression pool level would indicate an open SRV. This parameter will be monitored on a daily basis.
4. Other plant parameters are affected by an SRV actuation and are available as confirmation. Examples are main turbine governor valve position indication change, generator output change, main turbine steam flow change, steam/feedwater flow mismatch and the resultant reactor pressure perturbation.

Other indicators provide adequate feedback for ADS (reactor pressure) and SRV operation, and Alternate Shutdown Cooling operation (reactor pressure/temperature) if they are required.

With the compensatory measures proposed by the licensee, the staff finds the safety significance to be small and the proposed temporary amendment to be acceptable.

3.0 EMERGENCY CIRCUMSTANCES

Failure of the acoustic monitors based on failure of the cabling to meet environmental qualification requirements has only recently been identified. The licensee declared the monitors for the valve inoperable at 5:00 p.m., February 28, 1990. It was not possible to anticipate this event and submit this request in a more timely manner. The licensee has determined that correction will require that the reactor be shut down and cooled down in order to permit drywell entry. Based on the above, the licensee requested the emergency temporary change to the technical specifications to allow continued operation until the refueling outage of Absent this amendment, the Supply System would be required to unnecessarily shutdown by March 7, 1990. The outage for refueling will start on or about April 13, 1990.

The staff reviewed the circumstances associated with the request and concluded that the licensee provided a sufficient basis for finding that the situation could not have been avoided by prior application. Therefore, in accordance with 10 CFR 50.91(a)(5), a valid emergency existed.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves changes in requirements with respect to the use or installation of a facility component located within the restricted area as defined in 10 CFR Part 20 and 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. 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.

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards considerations if operation of the facility in accordance with the amendment would not:

1. Involve a significant increase in the probability or the consequences of any accident previously evaluated; or
2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or
3. Involve a significant reduction in a margin of safety.

The licensee has evaluated the amendment against these standards. A discussion of the standards as they relate to the amendment request follows:

1. The change does not involve a significant increase in the probability or consequence of an accident previously evaluated because the SRV position indication channels are not assumed to function in the initiation of an analyzed accident. The inoperability of these indication channels does not affect ADS operation of the SRVs. The analysis for an inadvertent opening of an SRV (FSAR Section 15.1.4) assumes the function of these alarm-only instrument channels for the purpose of having the operator assess the need for commencing suppression pool cooling with RHR. As discussed above, the operator has many diverse indications available to indicate the need for commencing suppression pool cooling as a result of an open SRV and the SRV position indication is not the primary indication. Loss of an SRV position indication channel will not adversely affect the operator's ability to respond to this event as assumed in the analysis. The proposed change affects only the operability of the SRV position indication and does not affect automatic or manual actuation of the SRV. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.
2. The change does not create the possibility of a new or different kind of accident from any accident previously evaluated because SRV operation, including the ADS function, remains unaffected. No new modes of operation of any equipment result due to this change.

Sufficient diverse indication remains available to adequately determine whether an SRV is inadvertently open, therefore this change will not result in a failure to assess the need for suppression pool cooling. This change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The change does not involve a significant reduction in a margin of safety because, as discussed above, the operator has many diverse indications available to indicate the need for commencing suppression pool cooling. Loss of an SRV position indication channel will not adversely affect the operator's ability to respond to this event as assumed in the analysis. The additional surveillances to monitor the suppression pool temperature while operation continues with an inoperable channel will compensate for the loss of position indication channel. Therefore, this change will not involve a significant reduction in the margin of safety.

Accordingly, the Commission has determined that this amendment involves no significant hazards consideration.

6.0 CONTACT WITH STATE OFFICIAL

In accordance with 10 CFR 50.91, the licensee provided the State of Washington with a copy of its March 2, 1990 letter. The NRC staff advised the Washington Energy Facility Siting Council of the final determination of no significant hazards considerations by telephone on March 7, 1990. The State of Washington did not have any comment on this determination.

7.0 CONCLUSION

In summary, based on the assertion that no significant hazard is created by the proposed amendment and that the proposed compensatory actions provide reliable indication of SRV position, approval of the proposed amendment does not represent an undue risk to the health and safety of the public.

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, (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: Robert B. Samworth

Dated: March 7, 1990