

April 25, 1995

Mr. J. V. Parrish (Mail Drop 1023)
Vice President Nuclear Operations
Washington Public Power Supply System
P.O. Box 968
Richland, Washington 99352-0968

SUBJECT: ISSUANCE OF AMENDMENT FOR THE WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2 (TAC NO. M86209)

Dear Mr. Parrish:

The Commission has issued the enclosed Amendment No. 136 to 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 April 1, 1993.

The amendment revises TS 3.8.1, "A.C. Sources" by increasing the minimum required level of diesel generator fuel storage capacity. This change is based on testing and revised calculations that demonstrated that the existing levels of DG fuel storage were inadequate to meet the post-loss of coolant accident fuel consumption requirements for seven days of operation.

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

Sincerely,

Original Signed By

James W. Clifford, Senior Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosures: 1. Amendment No. 136 to NPF-21
2. Safety Evaluation

cc w/encls: See next page

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DOCUMENT NAME: M86209.WNP

OFC	PDIV-2/LA	PDIV-2/PM	PDIV-2/PM	NRR-3PLB	OGC
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DATE	3/30/95	3/30/95	3/30/95	4/4/95	4/7/95

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DATE	3/30/95	3/30/95	3/30/95	4/4/95	4/7/95

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 25, 1995

Mr. J. V. Parrish (Mail Drop 1023)
Vice President Nuclear Operations
Washington Public Power Supply System
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Sincerely,

A handwritten signature in cursive script, appearing to read "James W. Clifford".

James W. Clifford, Senior Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosures: 1. Amendment No. 136 to NPF-21
2. Safety Evaluation

cc w/encls: See next page

Mr. J. V. Parrish
Washington Public Power Supply System

WPPSS Nuclear Project No. 2
(WNP-2)

cc:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

DOCKET NO. 50-397

NUCLEAR PROJECT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 136
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 April 1, 1993, 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:

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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 136 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 its date of issuance and will be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


James W. Clifford, Senior Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 25, 1995

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 136 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 marginal lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE

3/4 8-1
3/4 8-10

INSERT

3/4 8-1
3/4 8-10

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

- c. With DG-3 of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1a. within 1 hour and 4.8.1.1.2a.4., for one diesel generator at a time, within 4 hours and at least once per 8 hours thereafter; restore the inoperable DG-3 to OPERABLE status within 72 hours or declare the HPCS system inoperable and take the ACTION required by Specification 3.5.1.
- d. With DG-1, DG-2, or DG-3 of the above required A.C. electrical power sources inoperable, in addition to ACTION a., b., or c., as applicable, verify within 2 hours that all required systems, subsystems, trains, components, and devices that depend on the remaining OPERABLE diesel generators as a source of emergency power are also OPERABLE; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- e. With two of the above required offsite circuits inoperable, demonstrate the OPERABILITY of three diesel generators by performing Surveillance Requirement 4.8.1.1.2a.4. for one diesel generator at a time, within 4 hours and at least once per 8 hours thereafter, unless the diesel generators are already operating; restore at least one of the inoperable offsite circuits to OPERABLE status within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours. With only one offsite circuit restored to OPERABLE status, restore at least two offsite circuits to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- f. With DG-1 and DG-2 of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1a. and 4.8.1.1.2a.4. within 2 hours and at least once per 8 hours thereafter; restore at least one of the inoperable DG-1 and DG-2 to OPERABLE status within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. Restore both DG-1 and DG-2 to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

A.C. SOURCES - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Three separate and independent diesel generators, each with:
 1. Separate day fuel tanks containing a minimum of 1400 gallons of fuel,
 2. A separate fuel storage system containing a minimum of 55,500 gallons of fuel for diesel generator 1 (DG-1) and 55,500 gallons of fuel for diesel generator 2 (DG-2), and 33,000 gallons of fuel for diesel generator 3 (DG-3).
 3. A separate fuel transfer pump.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

- a. With either one offsite circuit or DG-1 or DG-2 of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a. within 1 hour and 4.8.1.1.2.a.4., for one diesel generator at a time, within 4 hours and at least once per 8 hours thereafter; restore at least two offsite circuits and DG-1 and DG-2 to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. With one offsite circuit and DG-1 or DG-2 of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1a. within 1 hour and 4.8.1.1.2a.4., for one diesel generator at a time, within 4 hours and at least once per 8 hours thereafter; restore at least one of the inoperable A.C. sources to OPERABLE status within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. Restore at least two offsite circuits and DG-1 and DG-2 to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

TABLE 4.8.1.1.2-1

DIESEL GENERATOR TEST SCHEDULE

<u>Number of Failures in Last 20 Valid Tests*</u>	or	<u>Number of Failures Last 100 Valid Tests*</u>	<u>Test Frequency</u>
≤ 1		≤ 4	At least once per 31 days
$\geq 2^{**}$		≥ 5	At least once per 7 days

- *Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, Revision 1, August 1977, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date shall be included in the computation of the "last 100 valid tests." Entry into this test schedule shall be made at the 31 day test frequency. With the exception of the semiannual fast start, no starting time requirements are required to meet the valid test requirements of Regulatory Guide 1.108.
- **Once this test frequency is required, it shall be maintained until seven consecutive failure free valid tests have been performed and the number of failures in the last 20 demands has been reduced to one.

ELECTRICAL POWER SYSTEMS

A.C. SOURCES - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Diesel generator 1 or 2 (DG-1 or DG-2), and diesel generator 3 (DG-3) when the HPCS system is required to be OPERABLE, with each diesel generator having:
 1. Day fuel tanks containing a minimum of 1400 gallons of fuel.
 2. A fuel storage system containing a minimum of 55,500 gallons of fuel for DG-1 and DG-2, and 33,000 gallons of fuel for DG-3.
 3. A fuel transfer pump.

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5, and *.

ACTION:

- a. With less than the offsite circuits and/or DG-1 or DG-2 of the above required A.C. electrical power sources OPERABLE, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment, operations with a potential for draining the reactor vessel and crane operations over the spent fuel storage pool when fuel assemblies are stored therein. In addition, in OPERATIONAL CONDITION 5, with the water level less than 22 feet above the reactor pressure vessel flange, immediately initiate corrective action to restore the required power sources to OPERABLE status as soon as practical.
- b. With DG-3 of the above required A.C. electrical power sources inoperable, restore the inoperable diesel generator IC to OPERABLE status within 72 hours or declare the HPCS system inoperable and take the ACTION required by Specification 3.5.2 and 3.5.3.
- c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.8.1.2 At least the above required A.C. electrical power sources shall be demonstrated OPERABLE per Surveillance Requirements 4.8.1.1.1, 4.8.1.1.2, and 4.8.1.1.3, except for the requirement of 4.8.1.1.2.a.5.

*When handling irradiated fuel in the secondary containment.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 136 TO FACILITY OPERATING LICENSE NO. NPF-21
WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2
DOCKET NO. 50-397

1.0 INTRODUCTION

By application dated April 1, 1993, the Washington Public Power Supply System (WPPSS or the licensee) requested changes to the Technical Specifications (TS) (Appendix A to Facility Operating License NPF-21) for the WPPSS Nuclear Project No. 2. The proposed changes would revise TS 3.8.1, "A.C. Sources" by increasing the minimum required level of diesel generator fuel storage capacity. This change is based on testing and revised calculations that demonstrated that the existing levels of DG fuel storage were inadequate to meet the post-loss of coolant accident (LOCA) fuel consumption requirements for seven days of operation.

2.0 EVALUATION

TS 3.8.1, "A.C. Sources" currently requires that a minimum of 53,000 gallons of fuel be stored in the fuel storage system for diesel generators (DGs) 1 and 2 and 33,000 gallons be stored for DG-3. In addition, 1400 gallons of fuel are required to be stored in the day fuel tanks for each DG. These limits are based on the licensee's commitment to ANSI Standard N195-1976 "Fuel Oil Systems for Standby Diesel Generators" which states that one method for determining on-site storage requirements is by calculating for continuous operation of each diesel generator for at least seven days while satisfying post-LOCA maximum loading.

An Electrical Distribution System Functional Inspection (EDSFI) was conducted at WNP-2 in January and February 1992 (IR 50-397/92-01). The inspectors found that the licensee's calculations of diesel fuel oil consumption rate were not completely conservative. The inspectors also reviewed the 1983 on-site fuel oil consumption test and found that the test was not conducted under worst case conditions. In particular, the licensee did not account for the temperature of the intake air, the temperature of the fuel oil, the EDG room temperature and the specific gravity of the fuel oil during the tests.

In response to the team's findings, the licensee performed calculations and tests using new methodology that is in line with current industry standards, vendor data, service data, and qualification testing. The licensee determined that the current minimum stored fuel requirements for DG-1 and DG-2 are 1,852 gallons short of the quantity required to support seven days operation at full electrical design rating. The licensee found that the original calculation had not considered the lowest heating value for the fuel as allowed by the TS and the Final Safety Analysis Report (FSAR), the temperature of the stored fuel, intake air temperature, or DG room temperature. Because of the shortfall, administrative controls were taken to increase the required storage by 2000 gallons. The EDSFI team found this value to be conservative.

The licensee completed testing in July 1992 to verify the calculated consumption rate. The fuel consumption rates determined by testing were smaller for DG-1 and greater for DG-2 than those used in the calculations. However, the increase in fuel consumption for DG-2 did not challenge the previously set administrative limit. The same testing and evaluation was performed for DG-3 with the conclusion that no changes were necessary to the fuel storage requirement for DG-3.

The licensee now proposes to revise the TS by increasing the minimum required fuel in the fuel storage systems by 2,500 gallons for DG-1 and DG-2. The revised TS would require a minimum of 55,500 gallons of fuel in the fuel storage system for DG-1 and DG-2. This change would make the TS consistent with the current operating practice and administrative controls. The proposed TS requirement provides sufficient margin above the new calculated value to accommodate the results of future revisions to the calculation. This change preserves the assumptions in the safety analysis by satisfying the recommendations of ANSI N195-1976 and is acceptable.

3.0 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.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change 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. The NRC staff has determined that the amendments involve 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 amendments involve no significant hazards consideration, and there has been no public comment on such finding (58 FR 28065). Accordingly, the amendments meet 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 the amendment.

5.0 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: Donna Skay

Date: April 25, 1995