June 6, 1989

Docket No. 50-397

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

Dear Mr. Sorensen:

SUBJECT: ISSUANCE OF AMENDMENT NO. 68 TO FACILITY OPERATING LICENSE NO. NPF-21 - WPPSS NUCLEAR PROJECT NO. 2 (TAC NO. 67620)

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 18, 1988 (G02-88-065)1 and supplemental letter dated April 12, 1989 (G02-89-059).

This amendment revises Technical Specification Section 4.8.2.1, "D.C. Sources Surveillance Requirements." Specifically, the discharge amperage profiles listed under subsection d are changed and subsections e and f are revised to reflect the more conservative aging factor used for sizing the division 1 250 vdc battery.

A copy of the related safety evaluation supporting the amendment is enclosed. Also enclosed is a copy of the related Notice of Issuance.

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. 68 to Facility Operating License No. NPF-21
2. Safety Evaluation
3. Notice of Issuance

cc: w/enclosures
See next page

*See previous concurrence

PD5/DRSP	PD5:APM/DRSP*	OGC	D:PD5/DRSP
JLee	RSamworth:dr		GWKnighton
5/19/89	5/8/89	5/18/89	5/6/89

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

June 6, 1989

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P.O. Box 968
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2. Safety Evaluation
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cc: w/enclosures
See next page

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. 68
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 18, 1988, as supplemented by letter dated April 12, 1989, 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. 68, 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

George W. Knighton, Director
Project Directorate V
Division of Reactor Projects - III,
IV, V and Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 6, 1989

ENCLOSURE TO LICENSE AMENDMENT NO. 68

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.

AMENDMENT PAGE	OVERLEAF PAGE
3/4 8-13	3/4 8-14

SURVEILLANCE REQUIREMENTS (Continued)

d. At least once per 18 months, during shutdown, by verifying that either:

1. The battery capacity is adequate to supply and maintain in OPERABLE status all of the actual emergency loads for 2 hours for Divisions 1, 2 and 3 when the battery is subjected to a battery service test, or

2. The battery capacity is adequate to supply a dummy load of the following profile (Minimum amperage) while maintaining the battery terminal voltage greater than or equal to 21 volts for the ±24-volt battery, 105 volts for the 125-volt battery, and 210 volts for the 250-volt battery, and 105 volts for the 125-volt Div. 3 battery.

BATTERY (VOLTS/DIV)	SECONDS 0-6	SECONDS 6-15	SECONDS 15-60	MINUTES 1-2	MINUTES 2-60	MINUTES 60-119	MINUTES 119-120
B0-1A/-1B (±24V/Div 1)	17.0	17.0	17.0	17.0	17.0	17.0	17.0
B0-2A/-2B (±24V/Div 2)	17.0	17.0	17.0	17.0	17.0	17.0	17.0
B1-1 (125V/DIV 1)	436	232	232	143	143	143	276
B1-2 (125V/DIV 2)	288	221	221	166	166	166	225
B2-1 (250V/DIV 1)	1307	1307	526	503	481	445	613
HPCS DUTY CYCLE	SECONDS 0-13	SECONDS 13-20	SECONDS 20-60				
B1-HPCS (125V/DIV 3)	55.1	75.6	15.6	15.6	15.6	16.0	16.0

e. At least once per 60 months during shutdown by verifying that the battery capacity is at least 80% (83.4% for the 250 Volt battery) of the manufacturer's rating when subjected to a performance discharge test. At this once per 60-month interval, this performance discharge test may be performed in lieu of the battery service test.

f. At least once per 18 months during shutdown performance discharge tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% (93.4% for the 250 Volt battery) of the manufacturer's rating.

TABLE 4.8.2.1-1

BATTERY SURVEILLANCE REQUIREMENTS

	CATEGORY A(1)	CATEGORY B(2)	
Parameter	Limits for each designated pilot cell	Limits for each connected cell	Allowable(3) value for each connected cell
Electrolyte Level	>Minimum level indication mark, and ≤ ¼" above maximum level indication mark	>Minimum level indication mark, and ≤ ¼" above maximum level indication mark	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 volts	≥ 2.13 volts(c)	> 2.07 volts
Specific Gravity(a)		≥ 1.195	Not more than 0.020 below the average of all connected cells
	≥ 1.200(b)	Average of all connected cells > 1.205	Average of all connected cells ≥ 1.195(b)

(a)Corrected for electrolyte temperature. Level correction will be used when electrolyte level is outside the normal range.
(b)Or battery charging current is less than (2) amperes when on float charge.
(c)May be corrected for average electrolyte temperature.
(1)For any Category A parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that within 24 hours all the Category B measurements are taken and found to be within their allowable values, and provided all Category A and B parameter(s) are restored to within limits within the next 6 days.
(2)For any Category B parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that the Category B parameters are within their allowable values and provided the Category B parameter(s) are restored to within limits within 7 days.
(3)With any Category B parameter not within its allowable value declare the battery inoperable.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 68 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 18, 1989, Washington Public Power Supply System proposed certain changes to the Technical Specifications for Nuclear Project No. 2 (WNP-2). Specifically they would change the battery duty cycles (load profiles) for division 1, 2, and 3 125 volt DC and division 1 250 volt DC power systems contained in Technical Specification section 4.8.2.1.d. These changes reflect a revision to the battery calculations related to the resolution of unresolved item No. 87-19-01 resulting from the safety system functional inspection (SSFI) of WNP-2 during the period of August 3 to August 28, 1987.

The SSFI resulted in the identification of instances of incorrectly calculating battery loads from the plant design basis. The licensee subsequently recalculated battery loads and determined the new battery load profiles for inclusion in the technical specifications.

By letter dated April 12, 1989, the licensee identified corrections to Technical Specification sections 4.8.2.1.e and 4.8.2.1.f to account for the fact that the aging factor for the 250 volt battery is different from the factor used for the other batteries.

2.0 EVALUATION

In support of the amendment application the licensee provided the following revised calculations for staff review: Revision 7 to calculation No. 2.05.01 covering 24, 125, and 250 volt batteries and revision 1 to calculation No. E/I-02-85-02 covering the high pressure core spray (HPCS) 125 volt DC battery. In each calculation specific load profiles for each battery were developed based on assumed loss of coolant accident (LOCA) with simultaneous loss of offsite power (including loss of AC power to the battery chargers) for two hours. Accident loads included valve, motor/pump, and breaker actuations as a result of the accident signals and operator actions. Loads for miscellaneous inverters, relays, alarms, and indicators were also included in the calculations.

Once the load profiles were developed, the licensee verified the correct sizing of the corresponding batteries utilizing methodology contained in

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IEEE Standard 485-1983, "IEEE Recommended Practice for Sizing Large Lead Storage Batteries for Generating Stations and Substations." Continuous and momentary loads were included in the load profiles. An aging factor of 25% (corresponding to a battery replacement when its actual capacity drops to 80% of its rated capacity) was used for all battery calculations except for the division 1 250 Vdc batteries. For these, an aging factor of 20% was used. A design margin of 10% and a minimum allowable battery voltage of 1.81 volts per cell were used in the calculations for all batteries.

An aging factor of 25% corresponds to replacement of the battery when its actual capacity drops to 80% of its rated capacity. An aging factor of 20%, as used in the division 1 250 Vdc calculations, would require that this battery be replaced when measured capacity drops to 83.4% of rated capacity. Technical Specification section 4.8.2.1.e previously only addressed verification based on the 25% aging factor. The proposed revision includes verification of the capacity of the division 1 250 Vdc battery which uses the lower aging factor. Since the lower aging factor is more conservative, the staff finds this revision acceptable.

The staff reviewed the battery sizing calculations submitted by the licensee. Since the sizing methodology as recommended in IEEE Std 485-1983 and the 2-hour scenario are consistent with current staff guidance and requirements, we find that the battery sizing calculations are acceptable to support the load profile/battery capacity verification performed by the licensee. The staff reviewed the load profiles developed by the licensee and finds them acceptable based on their consistency with plant conditions and system operations during the assumed two hour scenario.

Since the requested revision to the division 1, 2, and 3 125 Vdc and division 1 250 Vdc battery duty cycles for section 4.8.2.1.d.2 of the Technical Specifications reflects the new load profiles, we find that revision acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact have been prepared and published (54 FR 23552) in the Federal Register on June 1, 1989. Accordingly, based upon the environmental assessment, the Commission has determined that the issuance of this amendment will not have a significant effect on the quality of the human environment.

4.0 CONTACT WITH STATE OFFICIAL

The Commission has issued a Notice of Consideration of Issuance of Amendment to Facility Operating License and Opportunity for Hearing (53 FR 17810, May 18, 1988) and consulted with the State of Washington. No public comments were received, and the State of Washington did not have any comment.

5.0 CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Frederick H. Burrows

Dated: June 6, 1989

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UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

DOCKET NO. 50-397

NOTICE OF ISSUANCE OF AMENDMENT TO

FACILITY OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (Commission) has issued Amendment No.68 to Facility Operating License No. NPF-21, issued to Washington Public Power Supply System (the licensee), which revised the Technical Specifications for operation of the Nuclear Project No. 2, located in Benton County, Washington.

The amendment was effective as of the date of issuance.

The amendment revises Technical Specification Section 4.8.2.1, "D.C. Sources Surveillance Requirements." Specifically, the discharge amperage profiles listed under subsection d. are changed and subsections e and f are revised to reflect the more conservative aging factor used for sizing the division 1 250 vdc battery.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations. The Commission has made appropriate findings as required by the Act and the Commission's regulations in 10 CFR Chapter 1, which are set forth in the license amendment.

Notice of Consideration of Issuance of Amendment and Opportunity for Hearing in connection with this action was published in the FEDERAL REGISTER on May 18, 1988 (53 FR 17810). No request for a hearing or petition for leave to intervene was filed following this notice.

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The Commission has prepared an Environmental Assessment related to the action and has determined that an environmental impact statement will not be prepared and that issuance of this amendment will have no significant adverse effect on the quality of the human environment.

For further details with respect to the action see (1) the application for amendment dated March 18, 1988, as supplemented April 12, 1989, (2) Amendment No.68 to License No. NPF-21, (3) the Commission's related Safety Evaluation and (4) the Commission's Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, 2120 L Street NW., Washington, DC 20555, and at the Richland City Library, Swift and Northgate Streets, Richland, Washington 99352. A copy of items (2), (3) and (4) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Director, Division of Reactor Projects III, IV, V and Special Projects.

Dated at Rockville, Maryland this 6th day of June, 1989.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert B. Samworth

Robert B. Samworth, Senior Project Manager
Project Directorate V
Division of Reactor Projects III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation