May 22, 1990

Docket No. 50-397

DISTRIBUTION
Docket File
NRC & LPDRs
PD5 Reading
JZwokinski
LA
RSamworth
OGC
D. Hagan
E. Jordan
G. Hill (4)
Wanda Jones
J. Calvo
ACRS (10)
GPA/PA
OC/LFMB
Region V (4)

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. 83 TO FACILITY OPERATING LICENSE NO. NPF-21 - WPPSS NUCLEAR PROJECT NO. 2 (TAC NO. 76177)

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 (G02-90-036) as supplemented by your letter dated April 5, 1990 (G02-90-070).

This amendment revises Technical Specification 3/4.8.2, "Electrical Power Systems, D.C. Sources." Specifically, surveillance requirement 4.8.2.1.d.2 is amended by revising the specified battery load profiles.

A copy of the related safety evaluation supporting the amendment is enclosed. A Notice of Issuance will be included in the Commission's bi-weekly Federal Register notice.

Sincerely,

original signed by John Bradfute for

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

cc w/enclosures:
See next page

DRSP/PD5	DRSP/PD5	OGC	(A)DRSP/D:PD5
ELYTon	RSamworth:dr		JLarkins
5/8/90	5/3/90	5/14/90	5/21/90

[WNP2 76177]

9005290060 900522
PDR ADOCK 05000397
P PDC

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

May 22, 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. 83 TO FACILITY OPERATING LICENSE NO. NPF-21 - WPPSS NUCLEAR PROJECT NO. 2 (TAC NO. 76177)

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 (G02-90-036) as supplemented by your letter dated April 5, 1990 (G02-90-070).

This amendment revises Technical Specification 3/4.8.2, "Electrical Power Systems, D.C. Sources." Specifically, surveillance requirement 4.8.2.1.d.2 is amended by revising the specified battery load profiles.

A copy of the related safety evaluation supporting the amendment is enclosed. A Notice of Issuance will be included in the Commission's bi-weekly Federal Register notice.

Sincerely,

for 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. 83 to Facility Operating License No. NPF-21
2. Safety Evaluation

cc w/enclosures:
See next page

cc:

Mr. C. M. Powers
WNP-2 Plant Manager
Washington Public Power Supply System
P.O. Box 968, MD 927M
Richland, Washington 99352

Mr. G. E. Doupe, Esquire
Washington Public Power Supply System
P. O. Box 968
3000 George Washington Way
Richland, Washington 99532

Mr. Curtis Eschels, Chairman
Energy Facility Site Evaluation Council
Mail Stop PY-11
Olympia, Washington 98504

Mr. Alan G. Hosler, Licensing Manager
Washington Public Power Supply System
P. O. Box 968, MD 956B
Richland, Washington 99352

Mr. A. Lee Oxsen
Assistant Managing Director for Operations
Washington Public Power Supply System
P. O. Box 968, MD 1023
Richland, Washington 99352

Mr. Gary D. Bouchey, Director
Licensing and Assurance
Washington Public Power Supply System
P. O. Box 968, MD 280
Richland, Washington 99352

Regional Administrator, Region V
U.S. Nuclear Regulatory Commission
1450 Maria Lane, Suite 210
Walnut Creek, California 94596

Chairman
Benton County Board of Commissioners
Prosser, Washington 99350

Mr. Christian Bosted
U. S. Nuclear Regulatory Commission
P. O. Box 69
Richland, Washington 99352

Nicholas S. Reynolds, Esq.
Bishop, Cook, Purcell
& Reynolds
1400 L Street NW
Washington, D.C. 20005-3502

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. 83
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 and supplemented by letter dated April 5, 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.

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. 83, 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

Steven A Reynolds

John T. Larkins, Acting Director
Project Directorate 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: May 22, 1990

ENCLOSURE TO LICENSE AMENDMENT NO. 83

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 page is identified by Amendment number and contain vertical lines indicating the areas of change. Also to be replaced is the following overleaf page.

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)	24	24	24	24	24	24	24
B0-2A/-2B (±24V/Div 2)	24	24	24	24	24	24	24
B1-1 (125V/DIV 1)	570	260	260	180	180	180	276
B1-2 (125V/DIV 2)	400	230	230	185	185	185	241
B2-1 (250V/DIV 1)	1320	1320	520	505	480	444	574
HPCS DUTY CYCLE	SECONDS 0-13	SECONDS 13-20	SECONDS 20-60				
B1-HPCS (125V/DIV 3)	70.3	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. 83 TO FACILITY OPERATING LICENSE NO. NPF-21

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

NUCLEAR PROJECT NO. 2

DOCKET NO. 50-397

1.0 INTRODUCTION

By letters dated March 2 and April 5, 1990, the licensee for Washington Public Power Supply System Nuclear Plant 2 (WNP-2) proposed changes to the battery duty cycles (load profiles) for the Division 1 and 2 24 Vdc and 125 Vdc, Division 1 250 Vdc and Division 3 125 Vdc power systems contained in Section 4.8.2.1.d.2 of the plant's Technical Specifications. These changes reflect a revision to the battery profiles resulting from the licensee's review of battery capabilities and loads. The proposed changes and our evaluation of these changes are as follows.

The April 5, 1990 letter changes the loading of the B1-HPCS battery. The change is similar to the changes made in the original March 2, 1990 application and does not alter the staff's initial no significant hazards consideration.

2.0 EVALUATION

For each of the six plant batteries, specific load profiles have been included in the Technical Specifications based on an assumed LOCA with simultaneous loss of offsite power (including loss of AC power to the battery chargers) for two hours and included valve, motor/pump, and breaker actuations as a result of accident signals and operator action. Also continuous and momentary loads and loads for miscellaneous inverters, relays, alarms, and indicators were included in the profiles. The licensee has revised the battery profiles to account for several changes in loads on the batteries. The load profile for the Division 1 250 Vdc battery was revised to account for the installation of a new inverter, changes to the assumptions related to manual operation of MOV's, and the additions of margin to offset future load growth. As a result of a recent review of motor-operated valves in the plant, a motor on valve RHR-V-40 was determined to be undersized and will be replaced with a larger motor which increases the load on the Division 1 125 Vdc battery. During a safety system functional inspection, the licensee identified an error in previous battery profiles where loads for some 480 volt breakers did not account for charging spring motors running after the corresponding breakers tripped. To correct these errors the licensee added appropriate in-rush loads to the Division 1 and Division 2 125 Vdc batteries. Division 1 and 2 125 Vdc battery profiles were revised as a result of changes in the

number of pilot lights and auxiliary relays, the number of breakers that operate during the scenario, inverter load capability, and margin to offset future growth. Also to reduce the maintenance on diesels, new ac-driven lube oil pumps have been installed. The dc-driven pumps will now start when ac power is lost in lieu of running continuously. This results in added in-rush currents at the beginning of the scenario for Division 1, 2, and 3 125 Vdc battery profiles. The 24 Vdc battery profiles were changed as a result of the licensee conducting a detailed load study versus utilization of General Electric provided information.

Once the revised load profiles were developed, the correct sizing of the corresponding batteries was verified by the licensee in Revision 8 to Calculation No. 2 05.01 for 24, 125 and 250 volt batteries and a modification to Calculation E/I 02-85-02 for the Division 3 125 volt battery utilizing the methodology contained in IEEE Std 485-1983, "IEEE Recommended Practice for Sizing Large Lead Storage Batteries for Generating Stations and Substations." 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 battery calculations which contained a 20% aging factor. A design margin of 10% and a minimum allowable battery voltage of 1.81 volts per cell (1.75 for the 24 Vdc batteries) were also used in the calculations for all batteries.

We have reviewed the revised load profiles developed by the licensee and find them acceptable based on their consistency with plant conditions/system operations during the assumed two-hour scenario. We have reviewed the battery sizing calculations submitted by the licensee. Since the sizing methodology and the two-hour scenario are consistent with current staff guidance/requirements*, we find that the battery sizing calculations are acceptable to support the load profile/battery capacity verification performed by the licensee.

Additionally, since the requested revision to the Division 1 and 2 24 Vdc and 125 Vdc, Division 1 250 Vdc and Division 3 125 Vdc battery duty cycles for Section 4.8.2.1.d.2 of the plant's Technical Specifications reflects the new load profiles, which we find acceptable, we therefore also find the technical specification changes also to be acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in a requirement with respect to surveillance of facility components located within the restricted area as defined in 10 CFR Part 20. 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.

*It should be noted that this issue will be revisited during the staff's plant-specific station blackout review.

The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. 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.

4.0 CONTACT WITH STATE OFFICIAL

The Commission made a proposed determination that the amendment involves no significant hazards consideration (55 FR 12605, April 4, 1990) and consulted with the State of Washington. No public comments were received, and the State of Washington advised that they have no 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: F. Burrows, SELB

Dated: May 22, 1990