

April 22, 1988

Docket No. 50-302

Mr. W. S. Wilgus
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Florida Power Corporation
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Dear Mr. Wilgus:

SUBJECT: CRYSTAL RIVER UNIT 3 - ISSUANCE OF AMENDMENT
RE: INOPERABLE D.C. BATTERY (TAC NO. 67177)

The Commission has issued the enclosed Amendment No. 106 to Facility Operating License No. DPR-72 for the Crystal River Unit No. 3 Nuclear Generating Plant (CR-3). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated January 20, 1988.

This amendment revises the TSs to provide specific actions to be taken when one of the batteries supplying D.C. control power to the 230 kv switchyard breakers is inoperable, and revises the time the plant may operate with one inoperable battery. The amendment also more explicitly defines the surveillances to be performed in Modes 5 and 6.

Minor changes have been made for clarity. These have been discussed with and agreed to by members of your staff.

A copy of the Safety Evaluation and the Notice of Issuance are enclosed.
Sincerely,

/s/

Harley Silver, Project Manager
Project Directorate II-2
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 106 to DPR-72
2. Safety Evaluation
3. Notice of Issuance

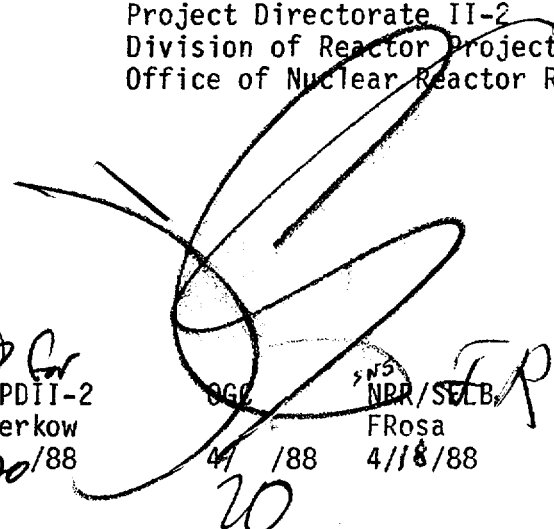
cc w/enclosures:
See next page

LAH/NL-2
D Miller
4/16/88

PM:PDII-2
HSilver:bg
4/18/88

D:PDII-2
HBerkow
4/20/88

OGC
NRR/SELB
FRosa
4/18/88



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Mr. W. S. Wilgus
Florida Power Corporation

Crystal River Unit No. 3 Nuclear
Generating Plant

cc:

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

FLORIDA POWER CORPORATION
CITY OF ALACHUA
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CITY OF GAINESVILLE
CITY OF KISSIMMEE
CITY OF LEESBURG
CITY OF NEW SMYRNA BEACH AND UTILITIES COMMISSION, CITY OF NEW SMYRNA BEACH
CITY OF OCALA
ORLANDO UTILITIES COMMISSION AND CITY OF ORLANDO
SEBRING UTILITIES COMMISSION
SEMINOLE ELECTRIC COOPERATIVE, INC.
CITY OF TALLAHASSEE

DOCKET NO. 50-302

CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 106
License No. DPR-72

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Florida Power Corporation, et al. (the licensees) dated January 20, 1988 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and 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.

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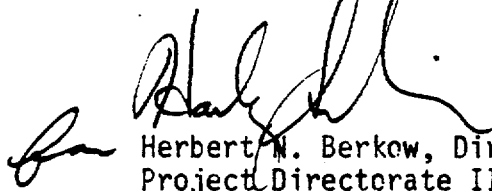
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-72 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 106, are hereby incorporated in the license. Florida Power Corporation shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert M. Berkow, Director
Project Directorate II-2
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 22, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 106

FACILITY OPERATING LICENSE NO. DPR-72

DOCKET NO. 50-302

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Remove

3/4 8-1
3/4 8-2
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3/4 8-5
3/4 8-6
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Insert

3/4 8-1
3/4 8-2
3/4 8-2a
3/4 8-5
3/4 8-6
3/4 8-6a
3/4 8-6b
3/4 8-6c

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A. C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

- 3.8.1.1 As a minimum, the following 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. Two separate and independent diesel generators each with:
 - 1. A separate day fuel tank containing a minimum volume of 400 gallons of fuel,
 - 2. A separate fuel storage system containing a minimum volume of 20,300 gallons of fuel, and
 - 3. A separate fuel transfer pump, and
 - c. Two separate battery/charger combinations supplying D.C control power to the 230 kv switchyard breakers.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one of the above offsite circuits inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; and 4.8.1.1.2.a.4 within 24 hours, unless the diesel generators are already operating. Restore at least two offsite circuits to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator inoperable, demonstrate the operability of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; and 4.8.1.1.2.a.4 within 24 hours. Restore two diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (continued)

ACTION: (Continued)

- c. With one offsite circuit and one diesel generator 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 one hour and at least once per 8 hours thereafter; and 4.8.1.1.2.a.4 within 8 hours, unless the diesel generator is already operating. Restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two offsite circuits and two diesel generators to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With two of the above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of two diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the diesel generators are already operating; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, restore at least two off-site circuits to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two diesel generators to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- f. With one of the batteries or chargers supplying D.C. control power to the 230 kv switchyard breakers inoperable, restore the inoperable battery and/or charger to OPERABLE status or supply all D.C. control power to the 230 kv switchyard from a single OPERABLE battery/charger combination within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (continued)

ACTION: (Continued)

- g. With a single battery/charger combination supplying D.C. control power to the redundant 230 kv breaker tripping coils, demonstrate the OPERABILITY of that battery by performing Surveillance Requirement 4.8.1.1.1.c.1 within 8 hours and at least once per 24 hours thereafter. Restore both batteries and chargers to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each independent circuit between the offsite transmission network and the onsite Class 1E distribution system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability.
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring unit power supply from the normal circuit to the alternate circuit.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying the generator capability to reject a load of ≥ 515 kw without tripping.
 - * 3. Simulating a loss of offsite power in conjunction with Reactor Building high pressure and Reactor Building high-high pressure tests signals, and;
 - a) Verifying de-energization of the emergency buses and load shedding from the emergency busses,
 - b) Verifying that the 4160 v. emergency bus tie breakers open,
 - c) Verifying the diesel starts from ambient condition on the auto-start signal, energizes the emergency busses with permanently connected loads, energizes the auto-connected emergency loads through the load sequencer, and operates for ≥ 5 minutes while its generator is loaded with the emergency loads.
 - **4. Verifying the diesel generator operates for at least 60 minutes. During the first 5 minutes but no greater than 6 minutes of this test the diesel generator shall be loaded to greater than or equal to 3248 kw but less than 3300 kw and during the remaining time of this 60 minute test, the diesel generator shall be loaded to greater than or equal to 2750 kw but less than 3000 kw,
 - **5. Verifying that the auto-connected loads to each diesel generator for the worst case diesel generator operating condition do not exceed 3248 kw, and
 6. Verifying that the automatic load sequence timers are OPERABLE with each load sequence time interval within $\pm 10\%$.
-

* This test shall be performed in MODE 3

** These revised requirements shall become effective upon approval of the licensee's final test report and supporting documentation and shall apply only until the end of Cycle VII.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. At least once per 7 days by verifying that:
 - a) The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,
 - b) The pilot cell specific gravity, corrected to 77°F, and full electrolyte level is ≥ 1.20 .
 - c) The pilot cell voltage is ≥ 2.15 volts under float charge, and
 - d) The overall battery voltage is ≥ 120 volts under float charge.
2. At least once per 92 days by verifying that:
 - a) The voltage of each connected cell is ≥ 2.15 volts under float charge and has not decreased more than 0.10 volts from the value observed during the base-line tests, and
 - b) The specific gravity, corrected to 77°F, and full electrolyte level of each connected cell is ≥ 1.20 and has not decreased more than 0.01 from the value observed during the previous tests, and
 - c) The electrolyte level of each connected cell is between the minimum and maximum level indication marks.
3. At least once per 18 months by verifying that:
 - a) The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.
 - b) The cell-to-cell and terminal connections are clean, tight and coated with anti-corrosion materials,
 - c) The battery charger will supply at least 95 amperes at 125 volts for at least 2 hours.
4. At least once per 18 months, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual emergency loads for 1 hour when the battery is subjected to a battery service test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

5. At least once per 60 months, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test shall be performed subsequent to the satisfactory completion of the required battery service test.

4.8.1.2.2 At least one diesel generator shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 1. Verifying the fuel level in the day fuel tank,
 2. Verifying the fuel level in the fuel storage tank,
 3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank,
 4. Verifying the diesel starts from ambient condition and can be accelerated to at least 900 rpm,
 5. Verifying the diesel generator is aligned to provide standby power to the associated emergency buses.
- b. At least once each 92 days by verifying that a sample of diesel fuel from the fuel storage tank is within the acceptable limits specified in Table 1 of ASTM D975-68 when checked for viscosity, water and sediment.
- c. At least once per 184 days in lieu of surveillance 4.8.1.2.2.a.4 by verifying the diesel starts from ambient condition and accelerates to at least 900 rpm in less than or equal to 10 seconds.
- d. At least once per 18 months, by:
 1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,
 2. Verifying the generator capability to reject a load of ≥ 515 kw without tripping.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- *3. Simulating a loss of offsite power in conjunction with Reactor Building high pressure and Reactor Building high-high pressure tests signals, and;
- a) Verifying de-energization of the emergency buses and load shedding from the emergency buses,
 - b) Verifying that the 4160 v. emergency bus tie breakers open,
 - c) Verifying the diesel starts from ambient condition on the auto-start signal, energizes the emergency buses with permanently connected loads, energizes the auto-connected emergency loads through the load sequencer, and operates for ≥ 5 minutes while its generator is loaded with the emergency loads.
4. Verifying the diesel generator operates for ≥ 60 minutes while loaded to ≥ 3000 kw,
- *5. Verifying that the auto-connected loads to each diesel generator do not exceed the 2000 hour rating of 3000 kw, and
6. Verifying that the automatic load sequence timers are OPERABLE with each load sequence time interval within $\pm 10\%$.
-

* This test shall be performed in MODE 3.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 106 TO FACILITY OPERATING LICENSE NO. DPR-72
FLORIDA POWER CORPORATION, ET AL.
CRYSTAL RIVER UNIT NO. 3 NUCLEAR GENERATING PLANT
DOCKET NO. 50-302

INTRODUCTION

By letter dated January 20, 1988, Florida Power Corporation (FPC or the licensee) requested an amendment to the Technical Specifications (TSs) appended to Facility Operating License No. DPR-72 for the Crystal River Unit No. 3 Nuclear Generating Plant (CR-3). The proposed amendment would revise Technical Specification (TS) 3.8.1.1 to provide more appropriate actions to be taken when one of the batteries or battery chargers supplying D.C. control power to the 230 kv switchyard breakers is inoperable. It would also increase the allowable outage time for surveillance testing of the batteries within the Action Statement time interval while Units 1 and 2 (where the battery is located) are shutdown, rather than operating as is presently done. Thus, the D.C. systems would not have to be removed from service while those units are operating.

The revision to TS 4.8.1.2 would clarify the surveillance and equipment required to be operable in Modes 5 and 6, and would not result in changes from the current surveillance requirements.

EVALUATION

In the event of inoperability of one battery or charger, the present TS 3.8.1.1 requires, in effect, that one offsite power source be declared inoperable because the independence of the two offsite sources is compromised. The Action Statements require verifying breaker alignments within 1 hour and every 8 hours thereafter, starting and accelerating the diesel generators within 24 hours, and restoring the battery or charger to operable status within 72 hours or shutting down.

The proposed changes to TS 3.8.1.1 recognize that inoperability of a battery or charger does not affect the offsite power supplies. The changes require restoration of both batteries and chargers to operable status or supply of all D.C. control power from a single battery/charger combination within 8 hours, or shutting down (3.8.1.1.f.). If a single battery/charger is supplying all D.C. control power, the operability of that battery is to be demonstrated within 8 hours and every 24 hours thereafter. Both batteries and chargers are to be restored to operable status within 7 days, or the plant is to be shut down (3.8.1.1.g.).

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The changes in the Action Statement by adding TS 3.8.1.1.f. and g. define more appropriate actions to be taken when one of the batteries and/or chargers is inoperable. The action and time limit in proposed TS 3.8.1.1.f. are conservative and do not significantly increase the probability of not isolating a 230 kv fault, which would cause a simultaneous loss of both offsite power sources. The probability of the loss of offsite power due to the inability to isolate a 230 kv fault is very low. Therefore, these changes are acceptable.

The requirement of proposed TS 3.8.1.1.g. to demonstrate battery operability within 8 hours is conservative and acceptable. The requirement to restore both batteries and chargers to operable status within 7 days provides adequate time to perform required surveillances without significantly increasing the risk of loss of offsite power, and is therefore acceptable.

Addition of TS 3.8.1.1.c., Limiting Condition of Operation (LCO), clarifies TS 3.8.1.1 and permits appropriate Action Statements, and is therefore acceptable.

The staff finds that the changes in TS 3.8.1.1 reduce unnecessary operation of the diesel generators, impose conservative limiting conditions for plant operation and surveillance requirements, and are therefore acceptable. However, for clarity, the proposed action f. should be modified as follows:

- f. With one of the batteries and/or chargers supplying D.C. control power to the 230 kv switchyard breakers inoperable, restore the inoperable battery and/or charger to OPERABLE status or supply all D.C. control power to the 230 kv switchyard from a single OPERABLE battery/charger combination within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The proposed change to TS 3.8.1.2 and 4.8.1.2.1 is related to Limiting Condition for Operation during Shutdown and Refueling (Modes 5 and 6). This change is to clarify the surveillances and equipment required to be operable during these modes, and is therefore acceptable. There is no significant change from the existing requirement as interpreted by NRR memorandum to Region II, dated October 16, 1987. For clarity, the following sections should be modified to be consistent with other sections of the TS as follows:

- 4.8.1.2.1.c.1.c) The pilot cell voltage is greater than or equal to 2.15 volts under float charge, and
- 4.8.1.2.1.c.1.d) The overall battery voltage is greater than or equal to 120 volts under float charge.

SUMMARY

Based on our review, the changes proposed by the licensee in this amendment request are adequate and acceptable, with the minor changes for clarity noted above.

ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.32, an environmental assessment was published (April 19, 1988, 53 FR 12836). Accordingly, the Commission has determined that the issuance of this amendment will not result in any environmental impacts other than those evaluated in the Final Environmental Statement.

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 the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: April 22, 1988

Principal Contributors:

S. Saba
H. Silver

UNITED STATES NUCLEAR REGULATORY COMMISSIONFLORIDA POWER CORPORATIONDOCKET NO. 50-302NOTICE OF ISSUANCE OF AMENDMENT TOFACILITY OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 106 to Facility Operating License No. DRP-72 to the Florida Power Corporation (the licensee), which revised the Technical Specifications for operation of the Crystal River 3 Nuclear Generating Plant, located in Citrus County, Florida. The amendment was effective as of the date of its issuance.

The amendment revised the Technical Specifications to provide specific actions to be taken when one of the batteries supplying D.C. control power to the 230 kv switchyard breakers is inoperable, and revised the time the plant may operate with one inoperable battery. The amendment also more explicitly defined the surveillances to be performed in Modes 5 and 6.

The application for amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, 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 March 22, 1988 (53 FR 9386).

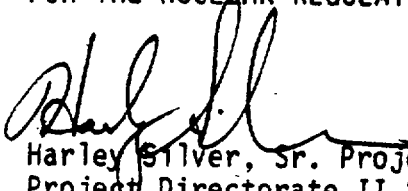
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Also in connection with this action, the Commission prepared an Environmental Assessment and Finding of No Significant Impact, which was published in the FEDERAL REGISTER on April 19, 1988 (53 FR 12836).

For further details with respect to the action, see (1) the application for amendment dated January 20, 1988, (2) Amendment No. 106 to License No. DPR-72, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C., and at the Crystal River Public Library, 668 N.W., First Avenue, Crystal River, Florida 32629.

Dated at Rockville, Maryland this 22nd day of April , 1988.

FOR THE NUCLEAR REGULATORY COMMISSION


Harley Silver, Sr. Project Manager
Project Directorate II-2
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation