

Docket No. 50-302

May 30, 1989

Mr. W. S. Wilgus
Vice President, Nuclear Operations
Florida Power Corporation
ATTN: Manager, Nuclear Operation
Licensing
Post Office Box 219-NA-2I
Crystal River, Florida 32629

Dear Mr. Wilgus:

SUBJECT: CRYSTAL RIVER, UNIT 3 - ISSUANCE OF AMENDMENT RE: REACTOR BUILDING
HIGH RADIATION MONITOR, WIDE-RANGE PRESSURE MONITOR AND FLOOD LEVEL
MONITOR (TAC NO. 54527)

The Commission has issued the enclosed Amendment No. 116 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
(TS) in response to your application dated March 31 1983, as supplemented
June 22, 1983.

This amendment provides TS for a reactor building high radiation monitor, a
reactor building wide-range pressure monitor, and a reactor building flood
level monitor. These changes are being made in response to NUREG-0737,
Item II.F.1.1.

Finally, the staff has made minor changes to your proposed TS which include
(1) the correction of a typographical error, and (2) the correction of one of
your proposed TS changes to agree with the installed instrumentation. These
changes were discussed with and agreed to by your staff.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will
be included in the Commission's biweekly Federal Register notice. This concludes
our effort on TAC No. 54527.

Sincerely,

Original signed by

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P PNU

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

Enclosures:

1. Amendment No. 116 to DPR-72
2. Safety Evaluation

cc w/enclosures:
See next page

[CR AMENDMENT 45427] *[Signature]*
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DMS:Ver HSilver/jd
05/22/89 05/22/89

D:PDII-2
HBerkow
05/23/89

OGC *[Signature]*
05/25/89

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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
CITY OF BUSHNELL
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. 116
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 March 31, 1983, as supplemented June 22, 1983, 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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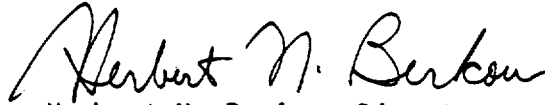
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-72 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 116, 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 and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. 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: May 30, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 116

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 numbers and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Remove

3/4 3-23
3/4 3-24
3/4 3-25
3/4 3-38
3/4 3-39
B 3/4 3-2

Insert

3/4 3-23
3/4 3-24
3/4 3-25
3/4 3-38
3/4 3-39
B 3/4 3-2

TABLE 3.3-6
RADIATION MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
1. AREA MONITORS					
a. Fuel Storage Pool area					
i. Criticality Monitor	1	*	15 mr/hr	10^{-1} - 10^4 mr/hr	14
b. Reactor Building High Radiation Monitor	2	1,2,3,4	10^2 rad/hr	1 - 10^8 rad/hr	30
2. PROCESS MONITORS					
a. Reactor Building					
i. Gaseous Activity-RCS Leakage Detection	1	1,2,3,4	Not Applicable	10^1 - 10^6 cpm	15
ii. Iodine Activity-RCS Leakage Detection	1	1,2,3,4	Not Applicable	10^1 - 10^6 cpm	15
b. Control Room					
i. Iodine Activity-Ventilation System Isolation/Recirculation	1	All Modes	2 x background	10^1 - 10^6 cpm	18

*With fuel in the storage pool or building

TABLE 3.3-6 (cont.)
RADIATION MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
2. Process Monitors (Continued)					
c. Condenser Vacuum Pump Exhaust Monitor - Gaseous Activity Monitor (RM-A12)	1	1, 2, 3, 4			19
d. Nuclear Services Closed Cooling Water Monitor (RM-L3)	1	All Modes			19
e. Decay Heat Closed Cooling Water Monitors (RM-L5 and RM-L6)	1	All Modes			19

TABLE 3.3-6 (CONTINUED)

TABLE NOTATION

- ACTION 14 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.
- ACTION 15 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.
- ACTION 18 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, within 1 hour initiate and maintain operation of the control room emergency ventilation system in the recirculation mode of operation.
- ACTION 19 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, plant operation may continue provided grab samples are collected and analyzed for gross activity* at least once per 24 hours.
- ACTION 30 - With the number of OPERABLE Channels less than required by the Minimum Channels OPERABLE requirements.
- 1) Either restore the inoperable Channel(s) to OPERABLE status within 7 days of the event, or
 - 2) Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

*LLD for noble gas principal gamma emitters shall be 5×10^{-5} Ci/cc.
LLD for liquid samples shall be 1×10^{-6} Ci/ml.

TABLE 4.4-3
RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. AREA MONITORS				
a. Fuel Storage Pool Area				
i. Criticality Monitor	S	R	M	*
b. Reactor Building High Radiation Monitor	S	R	M	1,2,3,4
2. PROCESS MONITORS				
a. Reactor Building				
i. Gaseous Activity- RCS Leakage Detection	S	R	M	1,2,3,4
ii. Iodine Activity- RCS Leakage Detection	S	R	M	1,2,3,4
b. Control Room				
i. Iodine Activity- Ventilation System Isolation/ Recirculation	S	R	M	All Modes

*With fuel in the storage pool or building

TABLE 4.3-3 (cont.)

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WH SURVEILLANCE REQUIRED</u>
2. Process Monitors (continued)				
c. Condenser Vacuum Pump Exhaust Monitor - Gaseous Activity Monitor (RM-A12)	D	R	M	1, 2, 3,
d. Nuclear Services Closed Cooling Water Monitor (RM-L3)	D	R	M	ALL MODES
e. Decay Heat Closed Cooling Water Monitors (RM-L5 and RM-L6)	D	R	M	ALL MODES

TABLE 3.3-10

POST-ACCIDENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MEASUREMENT RANGE</u>	<u>MINIMUM CHANNELS OPERABLE</u>
1. Power Range Nuclear Flux	0-125%	2
2. Reactor Building Pressure	0-70 psia	2
	0-280 psia	2
3. Source Range Nuclear Flux	10^{-1} to 10^6 cps	2
4. Reactor Coolant Outlet Temperature	520°F - 620°F	2 per loop
5. Reactor Coolant Total Flow	$0-160 \times 10^6$ lb./hr.	1
6. RC Loop Pressure	0-2500 psig	2
	0-600 psig	1
	1700-2500 psig	2
7. Pressurizer Level	0-320 inches	2
8. Steam Generator Outlet Pressure	0-1200 psig	2/steam generator
9. Steam Generator Operating Range Level	0-100%	2/steam generator
10. Borated Water Storage Tank Level	0-50 feet	2
11. Startup Feedwater Flow	$0-1.5 \times 10^6$ lb./hr.	2
12. Reactor Coolant System Subcooling Margin Monitor	-658°F to +658°F	1
13. PORV Position Indicator (Primary Detector)	N/A	1
14. PORV Position Indicator (Backup Detector)	N/A	N/A
15. PORV Block Valve Position Indicator	N/A	N/A
16. Safety Valve Position Indicator (Primary Detector)	N/A	1/valve
17. Safety Valve Position Indicator (Backup Detector)	N/A	N/A
18. Emergency Feedwater Flow	0-850 gpm	2/steam generator
19. Reactor Building Flood Level	0-10 feet	2

**TABLE 4.3-7
POST-ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS**

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Power Range Nuclear Flux	M	Q*
2. Reactor Building Pressure	M	R
3. Source Range Nuclear Flux	M	R*
4. Reactor Coolant Outlet Temperature	M	R
5. Reactor Coolant Total Flow Rate	M	R
6. RC Loop Pressure	M	R
7. Pressurizer Level	M	R
8. Steam Generator Outlet Pressure	M	R
9. Steam Generator Level	M	R
10. Borated Water Storage Tank Level	M	R
11. Startup Feedwater Flow Rate	M	R
12. Reactor Coolant System Subcooling Margin Monitor	M	R
13. PORV Position Indicator (Primary Detector)	M	R
14. PORV Position Indicator (Backup Detector)	M	R
15. PORV Block Valve Position Indicator	M	R
16. Safety Valve Position Indicator (Primary Detector)	M	R
17. Safety Valve Position Indicator (Backup Detector)	M	R
18. Emergency Feedwater Flow	M	R
19. Reactor Building Flood Level	M	R

*Neutron detectors may be excluded from CHANNEL CALIBRATION

3/4.3 INSTRUMENTATION

BASES

3/4.3.1 and 3/4.3.2 REACTOR PROTECTION SYSTEM (RPS) AND ENGINEERED SAFETY FEATURES ACTUATION SYSTEM (ESFAS) INSTRUMENTATION

The OPERABILITY of the RPS and ESFAS instrumentation systems ensure that 1) the associated ESFAS action and/or RPS trip will be initiated when the parameter monitored by each channel or combination thereof exceeds its setpoint, 2) the specified coincidence logic is maintained, 3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and 4) sufficient system functional capability is available for RPS and ESFAS purposes from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses.

The surveillance requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability. The ESFAS Functional Unit CHANNEL FUNCTIONAL TESTS shall be performed in accordance with Regulatory Guide 1.22 (Revision 0, 1972).

The measurement of response time at the specified frequencies provides assurance that the RPS and ESFAS action function associated with each channel is completed within the time limit assumed in the safety analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable.

Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements provided that such test demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either 1) in place, onsite or offsite test measurements or 2) utilizing replacement sensors with certified response times.

3/4.3 INSTRUMENTATION

BASES

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring channels ensures that 1) the radiation levels are continually measured in the areas served by the individual channels and 2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded.

The CHANNEL CALIBRATION of the Reactor Building High Radiation Monitor is performed in situ for at least one decade below 10 rad/hr. In situ calibration by electronic signal substitution is used for all range decades above 10 rad/hr.

3/4.3.3.2 INCORE DETECTORS

The OPERABILITY of the incore detectors ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the reactor core. See Bases Figures 3-1 and 3-2 for examples of acceptable minimum incore detector arrangements.

3/4.3.3.3 SEISMIC INSTRUMENTATION

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event so that the response of those features important to safety may be evaluated. This capability is required to permit comparison of the measured response to that used in the design basis for the facility. This instrumentation is consistent with the recommendations of Safety Guide 12 "Instrumentation for Earthquakes," March 1971.

3/4.3.3.4 METEOROLOGICAL INSTRUMENTATION

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public. This instrumentation is consistent with the recommendations of Regulatory Guide 1.23 "Onsite Meteorological Programs", February 1972.

3/4.3.3.5 REMOTE SHUTDOWN INSTRUMENTATION

The OPERABILITY of the remote shutdown instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 116 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 March 31, 1983, as supplemented June 22, 1983, Florida Power Corporation (FPC or the licensee) requested an amendment to the Technical Specifications (TS) appended to Facility Operating License No. DPR-72 for the Crystal River Unit No. 3 Generating Plant (CR-3). The proposed amendment would provide specifications for a reactor building high radiation monitor, a reactor building wide-range pressure monitor, and a reactor building flood level monitor. These changes are being made in response to NUREG-0737, Item II.F.1.1.

EVALUATION

Reactor Building High Radiation Monitor

The reactor building high radiation monitor is a post-accident instrument that will be used in making dose projections following radiological accidents. Normally two channels of reactor building high monitoring will be in service; however, should both channels of this instrument become inoperable the licensee has the capability to monitor the area over a range of up to 10,000 rad/hr. For this reason, there is no shutdown requirement associated with the loss of one or both channels of reactor building high radiation monitoring.

The reactor building high radiation monitor helps control room operators mitigate the effects of a radiological accident. The addition of these TS will ensure that adequate controls are in place to assure that the monitoring instrumentation will be operable should it be needed. The staff has previously found the proposed TS change to be consistent with the guidance provided by Generic Letter 83-37 (GL 83-37), as indicated in our letter of October 1, 1984.

Reactor Building Wide-Range Pressure Monitor and Reactor Building Flood Level Monitor

The reactor building wide-range pressure monitor and flood level monitor will help operators mitigate the consequences of an accident should normal operating monitors go off-scale. The addition of these TS will ensure that the monitors will operate properly and give accurate indication in the event of an accident. The staff has already found the licensee's proposed TS changes acceptable as indicated in our letter of October 1, 1984.

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In addition, the staff has made minor corrections to the proposed TS changes in Table 3.3-10. The first change involves the correction of a typographical error in the measurement range for the reactor coolant system subcooling margin monitor from "-658°F to +668°F" to "-658°F to +658°F". The measurement range for reactor building pressure was also changed from "0 - 300 psia" to "0 - 280 psia" in order to agree with the installed instrumentation. These changes were discussed with and agreed to by the licensee.

SUMMARY

Based on our review, the changes proposed in this request are adequate and acceptable.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to surveillance requirements. We have determined that the 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. 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.

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: May 30, 1989

Principal Contributor:
G. Wunder

DATED: May 30, 1989

AMENDMENT NO. 116 TO FACILITY OPERATING LICENSE NO. DPR-72-CRYSTAL RIVER UNIT 3


NRC & Local PDRs

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