

February 13, 1996

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Mr. Percy M. Beard, Jr.
Senior Vice President,
Nuclear Operations
Florida Power Corporation
ATTN: Manager, Nuclear
Licensing
15760 W. Power Line Street
Crystal River, Florida 34428-6708

Dear Mr. Beard:

SUBJECT: CRYSTAL RIVER NUCLEAR GENERATING PLANT UNIT 3 - ISSUANCE OF
AMENDMENT RE: 18 TO 24-MONTH SURVEILLANCE EXTENSION (TAC NO. M92551)

Dear Mr. Beard:

The Commission has issued the enclosed Amendment No. 152 to Facility Operating License No. DPR-72 for the Crystal River Unit No. 3 Nuclear Generating Plant (CR-3). The amendment consists of changes to the Technical Specifications (TS) in response to your application dated May 31, 1995, as supplemented November 28, 1995, and December 21, 1995. The changes increase the surveillance interval on various instruments from 18 to 24 months.

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

Sincerely,
Original signed by:

George F. Wunder, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosures:

- 1. Amendment No. 152 to DPR-72
- 2. Safety Evaluation

cc w/enclosures:
See next page

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AMENDMENT NO.152 TO FACILITY OPERATING LICENSE NO. DPR-72
CRYSTAL RIVER UNIT 3

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

February 13, 1996

Mr. Percy M. Beard, Jr.
Senior Vice President,
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Florida Power Corporation
ATTN: Manager, Nuclear
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15760 W Power Line Street
Crystal River, Florida 34428-6708

SUBJECT: CRYSTAL RIVER NUCLEAR GENERATING PLANT UNIT 3 - ISSUANCE OF
AMENDMENT RE: 18 TO 24-MONTH SURVEILLANCE EXTENSION (TAC NO. M92551)

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

Sincerely,

A handwritten signature in cursive script, appearing to read "George F. Wunder".

George F. Wunder, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosures:

1. Amendment No. 152 to DPR-72
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. Percy M. Beard, Jr.
Florida Power Corporation

Crystal River Unit No. 3
Generating Plant

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

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
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. 152
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 licensee) dated May 31, 1995, as supplemented November 28 and December 21, 1995, 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. 152, 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.

FOR THE NUCLEAR REGULATORY COMMISSION



David B. Matthews, Director
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 13, 1996

ATTACHMENT TO LICENSE AMENDMENT NO.152

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.

Remove

3.3-4
3.3-14
3.3-17
3.3-23
3.3-25
3.3-28
3.3-40
3.3-43
3.9-3
B 3.3-29
B 3.3-56
B 3.3-59
B 3.3-77
B 3.3-81
B 3.3-98
B 3.3-143
B 3.3-149
B 3.9-8

Insert

3.3-4
3.3-14
3.3-17
3.3-23
3.3-25
3.3-28
3.3-40
3.3-43
3.9-3
B 3.3-29
B 3.3-56
B 3.3-59
B 3.3-77
B 3.3-81
B 3.3-98
B 3.3-143
B 3.3-149
B 3.9-8

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.1.5 -----NOTES----- 1. Neutron detectors and RC flow sensors are excluded from this Surveillance. 2. Verification of bypass function is excluded from this Surveillance. ----- Perform CHANNEL CALIBRATION.</p>	<p>92 days</p>
<p>SR 3.3.1.6 -----NOTE----- Neutron detectors and RCPPM current and voltage sensors are excluded from CHANNEL CALIBRATION. ----- Perform CHANNEL CALIBRATION.</p>	<p>24 months</p>
<p>SR 3.3.1.7 -----NOTE----- Neutron detectors and RCPPM current and voltage sensors and the watt transducer are excluded from RPS RESPONSE TIME testing. ----- Verify RPS RESPONSE TIME is within limits.</p>	<p>24 months on a STAGGERED TEST BASIS</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.5.1 Perform CHANNEL CHECK.	12 hours
SR 3.3.5.2 -----NOTE----- When an ESAS channel is placed in an inoperable status solely for performance of this Surveillance, entry into associated Conditions and Required Actions may be delayed for up to 8 hours, provided the associated ES Function is maintained. ----- Perform CHANNEL FUNCTIONAL TEST.	31 days
SR 3.3.5.3 Perform CHANNEL CALIBRATION.	24 months
SR 3.3.5.4 Verify ESF RESPONSE TIME within limits.	24 months on a STAGGERED TEST BASIS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.6.1 Perform CHANNEL FUNCTIONAL TEST.	24 months

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.4 Verify SDM is $\geq 1\% \Delta k/k$.	1 hour <u>AND</u> Once per 12 hours thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.9.1 Perform CHANNEL CHECK.	12 hours
SR 3.3.9.2 -----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. ----- Perform CHANNEL CALIBRATION.	24 months
SR 3.3.9.3 Verify at least one decade overlap with intermediate range neutron flux channels.	Once each reactor startup prior to source range counts exceeding 10^6 cps if not performed within the previous 7 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.10.2 -----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. ----- Perform CHANNEL CALIBRATION.</p>	<p>24 months</p>
<p>SR 3.3.10.3 Verify at least one decade overlap with power range neutron flux channels.</p>	<p>Once each reactor startup prior to intermediate range indication exceeding 1E-5 amp if not performed within the previous 7 days</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and associated Completion Time not met for Functions 1.c, 2, 3, or 4.	F.1 Reduce once through steam generator (OTSG) pressure to < 750 psig.	12 hours

SURVEILLANCE REQUIREMENTS

-----NOTE-----
Refer to Table 3.3.11-1 to determine which SRs shall be performed for each EFIC Function.

SURVEILLANCE	FREQUENCY
SR 3.3.11.1 Perform CHANNEL CHECK.	12 hours
SR 3.3.11.2 Perform CHANNEL FUNCTIONAL TEST.	31 days
SR 3.3.11.3 Perform CHANNEL CALIBRATION.	24 months
-----NOTE----- Only required to be performed in MODES 1 and 2. -----	
SR 3.3.11.4 Verify EFIC RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS

SURVEILLANCE REQUIREMENTS

-----NOTE-----
 These SRs apply to each PAM instrumentation Function in Table 3.3.17-1.

SURVEILLANCE	FREQUENCY
SR 3.3.17.1 -----NOTE----- Not required for Function 4. ----- Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.17.2 -----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. ----- Perform CHANNEL CALIBRATION.	-----NOTE----- The Frequency for Function 12 is 18 months. ----- 24 months

SURVEILLANCE REQUIREMENTS

-----NOTE-----
 These SRs apply to each Remote Shutdown System Instrumentation Function in
 Table 3.3.18-1.

SURVEILLANCE		FREQUENCY
SR 3.3.18.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.18.2	-----NOTE----- Not required for Function 1.a. ----- Perform CHANNEL CALIBRATION for each required instrumentation channel.	24 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.2.1	Perform CHANNEL CHECK.	12 hours
SR 3.9.2.2	<p>-----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. -----</p> <p>Perform CHANNEL CALIBRATION.</p>	24 months

BASES

SURVEILLANCE
REQUIREMENTSSR 3.3.1.5 (continued)

This Surveillance is modified by two Notes. The first clarifies that neutron detectors and RC flow sensors (tubes) are not required to be tested as part of this Surveillance. In the case of the neutron detectors, there is no adjustment that can be made to the detectors. Furthermore, adjustment of the detectors is unnecessary because they are passive devices with minimal drift. Slow changes in detector sensitivity are compensated for by performing the daily calorimetric calibration and the monthly axial channel calibration. RCS flow detectors are excluded from this SR, but are surveilled as part of SR 3.3.1.6 on a refueling basis. This is based on their inaccessibility during power operations. The second note clarifies that the bypass function associated with the test Functions need only be performed once per fuel cycle. This is consistent with the definition of CHANNEL CALIBRATION.

SR 3.3.1.6

The CHANNEL CALIBRATION is a complete check of the instrument channel, including the sensor. The test verifies that the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift to ensure that the instrument channel remains operational between successive tests. The 24 month Frequency is based on the results of a review of instrument drift data conducted in accordance with NRC Generic Letter 91-04.

A Note to the Surveillance indicates that neutron detectors and RCPPM current and voltage sensors are excluded from CHANNEL CALIBRATION. In the case of the neutron detectors, this Note is necessary because of the difficulty in generating an appropriate detector input signal. Excluding the detectors is acceptable because the principles of detector operation ensure a virtually instantaneous response. RCPPM current and voltage sensors are excluded due to the fact no adjustments can be made to these sensors.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)SR 3.3.5.3

CHANNEL CALIBRATION is a complete check of the instrument channel, including the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift to ensure that the instrument channel remains operational between successive tests.

The Frequency is based on the results of a review of instrument drift data conducted in accordance with NRC Generic Letter 91-04.

SR 3.3.5.4

SR 3.3.5.4 ensures that the ESAS actuation channel response times are less than or equal to the maximum times assumed in the accident analysis. The response time values are the maximum values assumed in the safety analyses. Individual component response times are not modeled in the analyses. Response time testing acceptance criteria are on a Function basis and are included in Reference 1. The analyses model the overall or total elapsed time from the point at which the parameter exceeds the actuation setpoint value at the sensor to the point at which the end device is actuated. Thus, this SR encompasses the automatic actuation logic components addressed under LCO 3.3.7 and the operation of the ES end devices.

Response time tests are conducted on an 24 month STAGGERED TEST BASIS. This results in response time verification of all instrument channels every 72 months. The Frequency is based on plant operating experience, which shows that random failures of instrumentation components causing serious response time degradation but not channel failure are infrequent occurrences.

REFERENCES

1. FSAR, Chapter 7.
 2. FSAR, Chapter 14.
 3. FSAR, Chapter 6.
-

BASES (continued)

ACTIONS

A Note has been added to the ACTIONS indicating separate Condition entry is allowed for each ESAS manual initiation Function.

A.1

With one manual initiation channel of one or more ESAS Functions inoperable, the channel must be restored to OPERABLE status within 72 hours. The Completion Time of 72 hours is based on plant operating experience and administrative controls, which provide alternative means of ESAS Function initiation via individual component controls. The 72 hour Completion Time is also consistent with the allowed outage time for a loss of redundancy condition for the safety systems actuated by ESAS.

B.1 and B.2

If the manual initiation channel cannot be restored to OPERABLE status within 72 hours, the plant must be placed in a MODE in which the LCO does not apply. To achieve this status, the plant must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required MODES from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE
REQUIREMENTS

SR 3.3.6.1

SR 3.3.6.1 is a CHANNEL FUNCTIONAL TEST of the ESAS manual initiation. The SR verifies manual initiating circuitry is OPERABLE but does not actuate the end device (i.e., pump, valves, etc.). Proper operation of the Function is primarily monitored by ES logic matrix test lights (located on the ES Actuation relay cabinets). The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance is performed with the reactor at power. This Frequency has been extended to 24 months based on operating experience, which shows these components usually pass the Surveillance when performed on an 18 month Frequency.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.9.2 (continued)

any failures in the detectors will be apparent as change in channel output. The Frequency of 24 months is based on the results of instrument drift data conducted in accordance with NRC Generic Letter 91-04.

SR 3.3.9.3

SR 3.3.9.3 is the verification of one decade of overlap between source and intermediate range neutron flux instrumentation. The SR is required to be performed prior to source range count rate exceeding 10^6 cps if it has not been performed within 7 days prior to reactor startup. Failure to verify one decade of overlap on ~~one~~ or more source range channels requires the plant to be maintained in subcritical condition until the verification can be made. This ensures a continuous source of neutron power indication during the approach to criticality. The verification may be omitted if performed within the previous 7 days. The 7 day portion of the Frequency is based on operating experience, which shows that source range and intermediate range instrument overlap does not change appreciably over this time interval.

REFERENCES

None.

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.10.2 (continued)

The SR is modified by a Note excluding neutron detectors from CHANNEL CALIBRATION. It is not necessary to test the detectors because generating a meaningful test signal is difficult. In addition, the detectors are of simple construction, and any failures in the detectors will be apparent as a change in channel output. The 24 month Frequency is based on the results of a review of instrument drift data conducted in accordance with NRC Generic Letter 91-04.

SR 3.3.10.3

SR 3.3.10.3 is the verification of one decade of overlap between intermediate and power range neutron flux instrumentation. The SR is required to be performed prior to intermediate range indication exceeding $1E-5$ amp if it has not been performed within 7 days prior to reactor startup. Failure to verify one decade of overlap on one or more channels requires the plant to remain in a condition where the intermediate range channels provide adequate indication until the verification can be made. This ensures the power range nuclear instrumentation is functioning properly prior to the transition to this range of indication.

The test may be omitted if performed within the previous 7 days. The 7 day portion of the Frequency is based on operating experience, which shows that intermediate range instrument overlap does not change appreciably over this time interval.

REFERENCES

None.

BASES

**SURVEILLANCE
REQUIREMENTS**

SR 3.3.11.1 (continued)

monitoring the same parameter should read approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious.

Acceptance criteria are determined by plant staff and are presented in the Surveillance Procedure. The criteria are based on a combination of the channel instrument uncertainties.

The Frequency, about once every shift, is based on operating experience that demonstrates channel failure is unlikely. Thus, performance of the CHANNEL CHECK ensures that undetected overt channel failure is limited to time intervals between subsequent performances of the SR.

SR 3.3.11.2

A CHANNEL FUNCTIONAL TEST verifies the function of the required trip, interlock, and alarm functions of the channel. The Frequency of 31 days is based on operating experience and industry accepted practice.

SR 3.3.11.3

CHANNEL CALIBRATION is a complete check of the instrument channel including the sensor. The test verifies the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channels adjusted to account for instrument drift to ensure that the instrument channel remains operational between successive tests. The Frequency is based on the results of a review of instrument drift data conducted in accordance with NRC Generic Letter 91-04.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.17.1 (continued)

A note to the Surveillance excludes the performance of a CHANNEL CHECK on Function 4. FPC requested, and was granted, exception from performing a CHANNEL CHECK on this instrumentation as part of Amendment 124, dated October 17, 1989. The basis for not performing this SR is based on the design of the system. The system utilizes differential pressure (dp) measurements across vertical elevations of the hot leg and the reactor vessel when the RCPs are tripped. Performance of the SR with the RCPs in operation provides no meaningful information, such that a CHANNEL CHECK of this Function is not required.

SR 3.3.17.2

CHANNEL CALIBRATION is a complete check of the instrument channel, including the sensor, to verify the channel responds to the measured parameter(s) within the necessary range and accuracy.

For the Containment Area Radiation instrumentation, a CHANNEL CALIBRATION consists of an electronic calibration of the channel, not including the detector, for range decades above 10 R/hr. The calibration also provides a one point check of the detector below 10 R/hr using a gamma test source (Reference NUREG 0737, Table II.F.1-3).

The 24 month Frequency is based on the results of a review of instrument drift data conducted in accordance with NRC Generic Letter 91-04. The Frequency for the hydrogen monitors is 18 months based on operating experience and was originally selected to be consistent with the typical industry fuel cycle.

A Note clarifies that the neutron detectors are not required to be tested as part of the CHANNEL CALIBRATION. Adjustment of the detectors is unnecessary because they are passive devices and operating experience has shown them to exhibit minimal drift. Furthermore, there is no adjustment that can be made to the detectors.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.18.2

CHANNEL CALIBRATION is a complete check of the instrument loop and sensor. The SR verifies that the channel responds to the measured parameters within the necessary range and accuracy.

A Note clarifies that Function 1.a., "Reactor Trip Breaker (RTB) Position" is not required to have a CHANNEL CALIBRATION. This indication is mechanical in nature, and thus, not subject to a calibration.

The 24 month Frequency is based on the results of a review of instrument drift data conducted in accordance with NRC Generic Letter 91-04 and is justified by the assumption of a 30 month calibration interval in the determination of the magnitude of equipment drift.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 19.
 2. 10 CFR 50, Appendix R, Section L.
-

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.9.2.2

SR 3.9.2.2 is the performance of a CHANNEL CALIBRATION every 24 months. The CHANNEL CALIBRATION for the source range nuclear instrumentation is a complete check and re-adjustment of the channels, from the pre-amplifier input to the indicators. The 18 month Frequency is based on engineering judgment and the need to perform this Surveillance during the conditions that exist during a plant outage. The 24 month Frequency is based on the results of a review of instrument drift data conducted in accordance with NRC Generic Letter 91-04.

Performance of SR 3.3.9.2 meets the requirements of this Surveillance, and one performance may be used to satisfy both requirements.

This SR is modified by a Note stating that neutron detectors are excluded from the CHANNEL CALIBRATION. It is not necessary to test the detectors because generating a meaningful test signal is difficult. The detectors are of simple construction, and any failures in the detectors will be apparent as change in channel output.

REFERENCES

1. FSAR, Section 7.3.1.2.
 2. FSAR, Section 14.1.2.4.
-



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 152 TO FACILITY OPERATING LICENSE NO. DPR-72

FLORIDA POWER CORPORATION, ET. AL.

CRYSTAL RIVER UNIT NO. 3 NUCLEAR GENERATING PLANT

DOCKET NO. 50-302

1.0 INTRODUCTION

By letter dated May 31, 1995, as supplemented November 28, 1995, and December 21, 1995, Florida Power Corporation (FPC) submitted proposed revisions to Crystal River Unit 3 (CR-3) Technical Specifications (TS). The proposed revisions would extend the existing 18-month instrument surveillance interval for the protective functions of the Reactor Protection System (RPS), Engineered Safeguard Actuation System (ESAS), Emergency Feedwater Initiation and Control (EFIC) System, Neutron Flux Monitoring System, Post Accident Monitoring (PAM) System, Remote Shutdown System, and Nuclear Instrumentation System to a 24-month interval. FPC also proposed to change the instrument setpoint allowable values of certain functions in the RPS, EFIC System, and Control Room isolation instrumentation channels. Because of the possible generic implications of the changes to the setpoint allowable values the staff and the licensee have agreed to deal with this issue separately; the setpoint changes are not covered by this evaluation.

In preparing their amendment request, FPC followed the guidelines provided in Generic Letter (GL) 91-04 and their submittal responded to each of the seven actions identified by the staff in the GL as an acceptable basis for the extension.

The November 28, 1995, and December 21, 1995, letters contained supplementary information that did not affect the staff's proposed finding of no significant hazards considerations.

2.0 EVALUATION

GL 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-month Fuel Cycle," provides guidance on the development of TS revisions to allow a 24-month fuel cycle. The GL also includes requirements to evaluate the effect on safety for an increase in surveillance intervals to accommodate a 24-month fuel cycle. The staff determined that a licensee should address the issue of instrumentation errors/setpoint methodology assumptions when proposing an extended instrumentation surveillance interval; specifically, the licensee must evaluate the effects of an increased calibration interval on instrument uncertainties, equipment qualification, and vendor maintenance requirements in order to ensure that an extended surveillance interval does not result in exceeding the assumptions stated in

the safety analysis. GL 91-04 also specifies that licensees incorporate a plant-specific program to monitor and assess the long-term effects of instrument drift and provide continuing data to evaluate extended 24-month instrumentation surveillance intervals.

EPRI document TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs" dated March 1994, expanded the NRC GL 91-04 guidelines and provided statistical methodologies to calculate instrument drift; however, these EPRI methodologies have not been reviewed and approved by the NRC staff. FPC's submittal requesting extension of certain instrumentation surveillance intervals, however, has followed the EPRI methodology for calculating instrument drift and included sample calculations of instrument drift for three representative instruments. The calculations used statistical techniques. The licensee compared the results of these calculations to the GL action items using qualitative reasoning as a justification for the surveillance interval extension. FPC's primary setpoint methodology is to use vendor-provided drift for setpoint development when it is available. This method is endorsed by Instrument Society of America (ISA) Standard ISA-S67.04 Parts I & II, "Methodologies for the Determination of Setpoints for Nuclear Safety-Related Instrumentation," and is also specified in the GL 91-04 guidance.

The licensee stated that most of the instruments in the study for which surveillance interval extension is requested have been replaced since original plant start-up. As such, most drift data used in the calculation is vendor-stated, and historical drift data is only used when vendor-stated data is not available. With the exception of a few components, all protection system instrumentation (RPS, ESAS and EFIC) is being evaluated with vendor-stated drift data. For instrumentation where historical data was used for determining instrument setpoint drift, FPC performed a linear regression analysis on the absolute value of drift data from each drift study to indicate the instrument's drift trend. The regression line was plotted with the absolute values of drift versus interval in months to show a correlation between the instrument setpoint drift and its calibration interval. The regression line showed only the drift trend and was not used to extrapolate the 30 months (24 months + 25% of 24-month interval permitted by TS) drift term. The licensee also plotted drift data versus "As found" data when the instrument was re-calibrated. These plots were used for determination of the time dependency of the instrument drift.

The staff review of the three sample calculations indicated that the data points used for these calculations were not sufficient in number due to the limited number of instruments and their limited calibration history. The independence of the data points was also not adequately demonstrated as the licensee used five calibration points from the span of the same instrument instead of an independent measurement of drift on five different instruments. FPC nevertheless believes that their methodology is conservative since the difference between as-left and as-found setpoint values is actually the sum of measurement and test equipment error, temperature difference error, vibration

effects, instrument accuracy and readability, power supply effects, and journeyman techniques. The FPC methodology combined all these errors into the instrument drift calculation. While the staff agrees that these error terms introduce conservatism into the drift analysis, the staff maintains that the small number of instruments and the small number of historical calibration data points do not provide for a statistically meaningful modeling of the data.

In discussion with the licensee on December 19, 1995, the staff informed FPC that their statistical approach to projecting instrument drift was not sufficient to justify a 24-month surveillance interval. In response to our concerns, FPC submitted additional justification by letter dated December 21, 1995. This additional information provides data based solely on experience and does not rely upon statistical analysis. The licensee evaluated calibration data for all instruments whose surveillance interval is proposed for extension. As-found and as-left data were evaluated to determine how the equipment performed. The instruments have, except on rare occasions, performed within the acceptance criteria of the calibration procedures used to satisfy Technical Specification calibration requirements. Equipment performing outside specified as-found tolerances is considered to be inoperable and is not returned to service until it is left within the as-left requirements. Instrument drift per calibration interval was evaluated by inspection of the data and, with a few exceptions, the instruments did not appear to have time-dependent drift. Instruments whose data could not support this conclusion were not included in the request for calibration extension to 24-months. The drift tended to be random in that the setpoint drift was in both the positive and negative directions. This tendency to "cross" zero reduces the impact of drift since it does not build in one direction for an extended period of time. Additionally, the safety system instrumentation setpoints include manufacturer-provided 30-month instrument drift values, and if the drift term was not bounded by the existing allowance, the surveillance interval remained at 18-months per the existing Technical Specifications.

The licensee has implemented a program to monitor the effects of a 24-month Calibration Cycle on the instrument drift as specified in GL 91-04. The purpose of this monitoring program is to provide a means to verify the assumptions made in the setpoint methodology with regard to instrument drift. The monitoring program also provides a method to determine the adequacy of the instruments surveillance intervals.

The staff finds that the licensee's evaluation of instrument calibration data sufficiently demonstrates that a 24-month calibration interval will not significantly impact the instrument's capability to perform its safety function. The ongoing monitoring program provides further assurance that unacceptable instrument drift will be evaluated immediately and the calibration interval and the instrument setpoint will be revised to account for any additional drift. The staff, therefore, finds that the proposed change of certain RPS, ESAS, EFIC System, neutron flux monitoring, PAM, and Remote Shutdown System instrumentation Surveillance intervals from an 18- to a 24-month interval is consistent with the guidelines of GL 91-04.

Based on the above evaluation, the staff concludes that the proposed changes to the Technical Specifications to extend the calibration surveillance interval from 18 to 24 months for certain RPS, ESAS, EFIC System, neutron flux, PAM, and remote shutdown system instrumentation is consistent with the guidance of GL 91-04 and is, therefore, acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Florida State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (60 FR 35070). Accordingly, the 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 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.

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