

**Florida
Power**

CORPORATION
Crystal River Unit 3
Docket No. 50-302
Operating License No. DPR-72

June 1, 2000
3F0600-07

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: License Amendment Request #256, Revision 0
Extension of Containment Sump Monitor Channel Calibration Interval

Dear Sir:

Florida Power Corporation (FPC) hereby submits License Amendment Request (LAR) #256, Revision 0, for amendment of the Crystal River Unit 3 (CR-3) Facility Operating License No. DPR-72 in accordance with 10 CFR 50.90. The changes to the CR-3 Improved Technical Specifications (ITS) proposed in LAR #256 revise the interval for calibration of the containment sump level monitor instrumentation from 18 months to 24 months.

Based on the date the calibration was last performed and the current 18-month interval, performance of the next calibration will be required before the next refueling outage. The containment sump level monitor was last calibrated on November 5, 1999. Based on the current interval of 18 months specified in the ITS, the next calibration must be performed by May 5, 2001. Therefore, FPC requests approval of LAR #256 by April 2, 2001.

There are no new regulatory commitments made in this submittal.

If you have any questions regarding this submittal, please contact Mr. Sid Powell, Manager, Nuclear Licensing at (352) 563-4883.

Sincerely,

J. J. Holden
Vice President and Site Director

JJH/ter

xc: Regional Administrator, Region II
NRR Project Manager
Senior Resident Inspector
Florida Department of Health

Attachments:

- A. Description of Changes, Reason for Request, Evaluation of Request, and Precedents / No Significant Hazards Consideration / Environmental Impact Evaluation
- B. Proposed Improved Technical Specifications and Bases Changes - Strikeout and Shadowed Text
- C. Proposed Improved Technical Specifications and Bases Changes - Revision Bar Format

STATE OF FLORIDA
COUNTY OF CITRUS

John J. Holden states that he is the Vice President and Site Director for Florida Power Corporation; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission the information attached hereto; and that all such statements made and matters set forth therein are true and correct to the best of his knowledge, information, and belief.

J. Holden

John J. Holden
Vice President and Site Director

Sworn to and subscribed before me this 1st day of June, 2000, by
John J. Holden.

Lisa A. Morris

Signature of Notary Public
State of Florida



LISA A. MORRIS
Notary Public, State of Florida
My Comm. Exp. Oct. 25, 2003
Comm. No. CC 879691

LISA A MORRIS

(Print, type, or stamp Commissioned
Name of Notary Public)

Personally Known X -OR- Produced Identification _____

**FLORIDA POWER CORPORATION
CRYSTAL RIVER UNIT 3
DOCKET NUMBER 50-302/LICENSE NUMBER DPR-72**

ATTACHMENT A

LICENSE AMENDMENT REQUEST #256, REVISION 0

**Extension of Containment Sump Monitor
Channel Calibration Interval**

**Description of Changes, Reason for Request,
Evaluation of Request, and Precedents**

No Significant Hazards Consideration

Environmental Impact Evaluation

LICENSE AMENDMENT REQUEST (LAR) #256, REVISION 0
EXTENSION OF CONTAINMENT SUMP MONITOR
CHANNEL CALIBRATION INTERVAL

LICENSE DOCUMENT INVOLVED: Crystal River Unit 3 (CR-3) Improved Technical Specifications

PORTIONS: Surveillance Requirement (SR) 3.4.14.3
Bases SR 3.4.14.3 and SR 3.4.14.4

1.0 DESCRIPTION OF CHANGES

Surveillance Requirement (SR) 3.4.14.3 requires channel calibration of the containment sump monitor. The containment sump monitor instrumentation string is used to satisfy the requirements of Improved Technical Specification (ITS) Limiting Condition for Operation (LCO) 3.4.14 for Reactor Coolant System (RCS) leakage detection. The current required interval for the calibration is 18 months. The requested change is to extend this interval to 24 months. This instrument is used principally for identifying changes in the containment sump level that occur over short time intervals, e.g., an operating crew shift, rather than measurement of a specific, required level. Any greater instrument drift that might occur as a result of the 24-month calibration interval will not materially affect the capability of the instrument to provide accurate level trend data.

The associated ITS Bases SR 3.4.14.3 and SR 3.4.14.4 for the channel calibration of the containment atmosphere radioactivity monitor are currently combined in one section. This change splits this combination into individual sections for SR 3.4.14.3 and SR 3.4.14.4. SR 3.4.14.3 is revised to reflect the proposed 24-month interval for the containment sump monitor channel calibration and the basis for that interval. SR 3.4.14.4 is revised only to make this a separate section, with no changes being made to the current 18-month channel calibration interval for the containment atmosphere radioactivity monitor.

2.0 REASON FOR REQUEST

Extending the channel calibration interval of the containment sump monitor to 24 months would make it consistent with the current CR-3 24-month operating cycle. With the current calibration interval of 18 months, the next performance of the calibration will be required during the current operating cycle. CR-3 would be required to perform the calibration with the plant in operation. Performing the calibration with the plant in operation is undesirable because of the radiation dose received by the personnel performing the calibration.

Extending the calibration frequency to 24 months will allow the calibration to be performed during refueling outages. The radiation dose to the personnel performing the calibration while CR-3 is shut down in a refueling outage is significantly reduced compared to the dose received

if the calibration is performed with CR-3 operating. The containment sump narrow range level element and transmitter are located in the Reactor Building (primary reactor containment) on the 95-foot level adjacent to the Makeup and Purification letdown line piping. The general area dose rate near the transmitter without shielding is normally 200 to 250 mREM/hr.

Calibrating the sump monitor transmitter requires approximately 10 man-hours. Based on the 200 to 250 mREM/hr general area dose rate, the dose received by personnel performing the calibration while CR-3 is operating would be approximately 2.0 to 2.5 REM. In contrast, during outages shielding is installed and general area dose rates are reduced to approximately 50 to 80 mREM/hr. At this dose rate, the dose to perform the 10-hour calibration would be approximately 0.5 to 0.8 REM.

3.0 BACKGROUND

To support the transition of CR-3 to a 24 month fuel cycle, Florida Power Corporation (FPC) evaluated the suitability of a 24-month calibration interval for the ITS required instrumentation in accordance with the guidance of Generic Letter (GL) 91-04. Based on that evaluation, FPC submitted Technical Specification Change Request Number (TSCRN) 202 by letter dated May 31, 1995, requesting extension of the calibration interval for other instruments to 24 months. Extension of the calibration interval for the containment sump monitor was not requested because, as stated in TSCRN 202, the drift data did not support an extension to 24 months. FPC has now concluded that the containment sump monitor is outside the scope of GL 91-04, based on how it is used.

4.0 EVALUATION OF REQUEST

The containment sump level instrumentation is used to detect trends and changes in the sump level rather than an absolute level. The containment sump monitor instrumentation string, including the level transmitter, signal converter, level indicator, level recorder, and level switch are shown schematically in Figure 1.

The containment sump monitor does not perform any safety function for mitigating the consequences of a design basis accident. Separate safety-related instrumentation is used to determine post-accident containment sump and containment flood levels and to satisfy the requirements of Regulatory Guide (RG) 1.97 for post-accident monitoring instrumentation. Additionally, the containment sump monitor does not have any associated safety system setpoint. The level switch in the instrument circuit is used only for automatic pumping of sump fluid using the two Reactor Building sump pumps.

The change in sump level is a possible indication of RCS leakage. The leak rate can be calculated based on the containment sump level as recorded on a recorder in the main control room. Therefore, although the actual level is recorded, only the trend is used to determine the leak rate into the sump. Any drift associated with the instrument over the trend period (one hour to one 12-hour shift) would be negligible.

The calibration and maintenance history of the containment sump monitor was evaluated in support of this request. Each calibration consists of checks at 0, 25, 50, 75, and 100% of span. Since 1987, the containment sump monitor has been calibrated on eight occasions, for a total of 40 possible as-found readings. Of the 40 as-found readings, only five were out-of-tolerance readings. The level transmitter was successfully calibrated in all instances. There have not been any failures of the level transmitter since 1987. Therefore, the maintenance and calibration history under the 18-month interval, in combination with the fact that the sump monitor is used for trending of sump level changes as explained above, justifies the extension of the calibration interval to 24 months.

5.0 PRECEDENTS

By letter to the NRC dated January 30, 1997, Centerior Energy submitted a request for amendment of the Davis-Besse operating license to extend the calibration interval of the Containment Wide Range Level instruments from 18 months to 24 months. The basis for the requested extension of the calibration interval to 24 months was that the drift experienced with a 24-month interval would be acceptable if the instrument was used for monitoring trends in level and not for measurement of absolute level. The requested revisions to the Davis-Besse technical specifications were approved and issued by License Amendment Number 218 to Facility Operating License No. NPF-3 dated December 2, 1997. FPC considers that the Davis-Besse license amendment and this request for extension of the containment sump calibration interval for Crystal River Unit 3 are sufficiently similar such that the Davis-Besse license amendment can be considered as a suitable precedent.

NO SIGNIFICANT HAZARDS CONSIDERATION

The Florida Power Corporation (FPC) Crystal River Unit 3 (CR-3) Improved Technical Specifications (ITS) 3.4.14 requires that instrumentation to detect leakage from the reactor coolant system (RCS) be available. This leakage from the RCS would be contained within the primary containment and not released to the environment. CR-3 has two separate and redundant types of instrumentation that are used to detect leakage from the RCS. These are the containment sump monitor and the containment atmosphere radioactivity monitor. ITS currently requires that these instruments be calibrated every 18 months to verify their proper operation.

License Amendment Request (LAR) #256, Revision 0, proposes to extend the interval for calibration of one of these instruments, the containment sump monitor, from the current 18 months to 24 months. There is a possibility that the increased interval between calibrations may result in an increase in the amount by which the monitor reading of the sump level might be different from the actual level as a result of instrument drift. The monitor is used to detect and measure RCS leakage by monitoring changes in the level of water in the containment sump over relatively short periods of time, on the order of 12 hours. FPC proposes that extending the interval to 24 months is acceptable based on the fact that any drift the monitor may have

experienced is eliminated from consideration when the difference between two readings of sump level is calculated.

FPC has evaluated proposed LAR #256 against the criteria of 10 CFR 50.92(c) to determine if any significant hazards consideration is involved. FPC has concluded that this proposed LAR does not involve a significant hazards consideration. The following is a discussion of how each of the 10 CFR 50.92(c) criteria is satisfied.

- (1) *Involve a significant increase in the probability or consequences of an accident previously evaluated.*

The containment sump monitor is not an initiator of any design basis accident. This monitor is used during normal plant operation to measure and to trend the rate of change of containment sump fluid level.

The containment sump monitor does not perform any safety function as part of mitigating the consequences of a design basis accident. Separate safety-related instrumentation is used to determine post-accident containment sump and containment flood levels and to satisfy the requirements of Regulatory Guide (RG) 1.97 for post-accident monitoring instrumentation. Additionally, the containment sump monitor does not have any associated safety system setpoint. The level switch in the instrument circuit is used only for automatic pumping of sump fluid using the two containment sump pumps.

A longer interval between calibrations may result in some increase in the amount of drift that the containment sump level monitor might experience between calibrations. The behavior of instrumentation, including considerations such as the amount of drift that the instrument might experience between calibrations, is not an accident precursor. Thus, changes to instrument maintenance such as intervals for performance of calibration, and the behavior of instruments including such considerations as the amount of drift, do not affect the probability of an accident. The probability of an accident previously evaluated is independent of the amount of drift that the containment sump level monitor might experience.

The containment sump monitor is used to detect RCS leakage during normal operation and does not have an accident mitigation function. Additionally, the ability of the instrument to detect small leaks will not be affected by extending the calibration interval.

Based on the above, increasing the interval between calibrations does not result in a significant increase in the probability or consequences of an accident previously evaluated.

- (2) *Create the possibility of a new or different kind of accident from any accident previously evaluated?*

The proposed license amendment involves no changes to the design or operation of the containment sump level monitor. Extending the interval between calibrations of the containment sump level monitor from 18 months to 24 months might result in greater drift of the monitor during the period of operation. However, the only function of the monitor is to detect changes and trends in the containment sump level during normal operation and the amount of drift that the monitor has experienced does not affect its ability to measure such changes and trends of the containment sump level. Furthermore, changes in the behavior of instrumentation, such as the amount of drift that the instrument might experience between calibrations, do not create the possibility of a new or different kind of accident.

Because initiation of accidents is independent of instrumentation behavior parameters such as drift, extending the calibration interval from 18 to 24 months does not create the possibility of any new or different kind of accident from any previously evaluated.

- (3) *Involve a significant reduction in a margin of safety?*

The CR-3 operating license, i.e., the Improved Technical Specifications, requires that instrumentation to detect leakage of reactor coolant system (RCS) inventory be available and operable during power operation. The required instrumentation is one containment sump monitor and one containment atmosphere radioactivity monitor.

The proposed extension of the containment sump monitor calibration interval from 18 to 24 months does not compromise the ability of the instrumentation to perform its safety function, i.e., early detection of RCS leakage. This is so because the only function of the containment sump monitor is to detect changes and trends in the containment sump level during normal operation. The proposed license amendment makes no changes to either the design or operation of the sump monitor. The proposed license amendment makes no changes to the license requirements or to the design or operation of the containment atmosphere radioactivity monitor.

Because no changes are made to either the design or operation of the sump monitor, the sump monitor remains operable with the requested changes, and no changes are made to the containment atmosphere radioactivity monitor, FPC concludes that the change does not result in a significant reduction in a margin of safety.

Conclusion

Based on the above responses to each of the criteria FPC concludes that the proposed change to the CR-3 ITS involves no significant hazards consideration.

ENVIRONMENTAL IMPACT EVALUATION

10 CFR 51.22(c)(9) provides criteria for identification of licensing and regulatory actions that are eligible for categorical exclusion from required performance of an environmental assessment. A proposed amendment to an operating license for a facility does not require an environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration, (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released off-site, or (3) result in a significant increase in individual or cumulative occupational radiation exposure.

Florida Power Corporation has reviewed this proposed licensed amendment and has determined that it meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(c), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the proposed license amendment. The basis for this determination is as follows:

1. The proposed license amendment does not involve a significant hazards consideration as described in the above No Significant Hazards Consideration evaluation.
2. The containment sump monitor is used to detect the fluid level in the containment sump. Other than potentially collecting and containing radioactive fluids generated in the plant, the containment sump and the sump monitor do not interface in any way with any plant system that is involved in the generation or processing of radioactive fluids. If the sump monitor instrumentation were to fail, there are redundant, safety-related level instrumentation and alarms that provide indication of sump level. The sump is located inside the reactor containment building, a seismically-qualified structure. Overflow of the sump would not result in an unmonitored flow path to the environment.
3. The request to extend the calibration interval to 24 months will allow the calibration to be performed during refueling outages. During these outages shielding is installed to reduce personnel exposures. During the outages the general area dose rates are reduced from what is experienced during plant power operation. Extending the calibration to 24 months will eliminate the potential need to perform the calibration with the plant on-line. Thus, the requested change to the license requirements is expected to result in a reduction of the individual and cumulative occupational exposure, and not an increase.

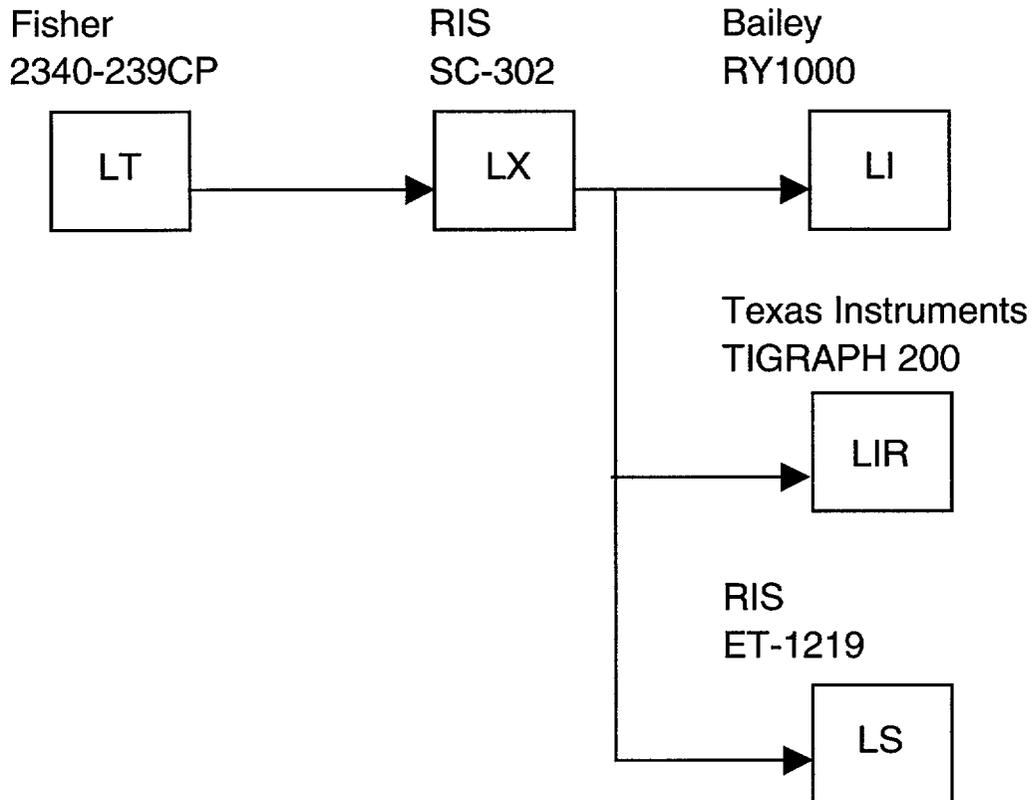


Figure 1
Containment Sump Monitor Instrumentation String

**FLORIDA POWER CORPORATION
CRYSTAL RIVER UNIT 3
DOCKET NUMBER 50-302 / LICENSE NUMBER DPR-72**

ATTACHMENT B

LICENSE AMENDMENT REQUEST # 256, REVISION 0

Proposed Improved Technical Specifications and Bases Changes

Strikeout and Shadowed Text

Text Being Added	Indicated by Shadowed Text
Text Being Deleted	Indicated by Strikeout Text

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.14.3	Perform CHANNEL CALIBRATION of containment sump monitor.	18 24 months
SR 3.4.14.4	Perform CHANNEL CALIBRATION of required containment atmosphere radioactivity monitor.	18 months

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

~~SR 3.4.14.3 and SR 3.4.14.4~~

~~These SRs requires the performance of a CHANNEL CALIBRATION for each of the required containment sump monitor RCS leakage detection instrumentation channels. The calibration verifies the accuracy of the instrument string, including the instruments located inside containment. The Frequency of 18 24 months is a typical refueling cycle and considers channel reliability. Operating experience has proven this Frequency acceptable. The acceptability of the 24-month frequency for the containment sump monitor CHANNEL CALIBRATION is based on the use of the instrumentation to measure trends or changes in the containment sump level rather than an absolute value of sump level.~~

~~SR 3.4.14.4~~

~~These SRs requires the performance of a CHANNEL CALIBRATION for each of the required containment atmosphere radioactivity monitor RCS leakage detection instrumentation channels. The calibration verifies the accuracy of the instrument string, including the instruments located inside containment. The 18-month Frequency for the containment atmosphere radioactivity monitor CHANNEL CALIBRATION has been proven acceptable based on operating experience. of 18 months is a typical refueling cycle and considers channel reliability. Operating experience has proven this Frequency acceptable.~~

REFERENCES

1. 10 CFR 50, Appendix A, GDC 30.
 2. Regulatory Guide 1.45.
 3. 10 CFR 50, Appendix A, GDC 4.
 4. NUREG 1366, December 1992.
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**FLORIDA POWER CORPORATION
CRYSTAL RIVER UNIT 3
DOCKET NUMBER 50-302 / LICENSE NUMBER DPR-72**

ATTACHMENT C

LICENSE AMENDMENT REQUEST # 256, REVISION 0

Proposed Improved Technical Specifications and Bases Changes

Revision Bar Format

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.14.3	Perform CHANNEL CALIBRATION of containment sump monitor.	24 months
SR 3.4.14.4	Perform CHANNEL CALIBRATION of required containment atmosphere radioactivity monitor.	18 months

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.4.14.3

This SR requires the performance of a CHANNEL CALIBRATION for the required containment sump monitor instrumentation channel. The calibration verifies the accuracy of the instrument string, including the instruments located inside containment. The Frequency of 24 months is a typical refueling cycle and considers channel reliability. The acceptability of the 24-month frequency for the containment sump monitor CHANNEL CALIBRATION is based on the use of the instrumentation to measure trends or changes in the containment sump level rather than an absolute value of sump level.

SR 3.4.14.4

This SR requires the performance of a CHANNEL CALIBRATION for the required containment atmosphere radioactivity monitor instrumentation channel. The calibration verifies the accuracy of the instrument string. The 18-month frequency for the containment atmosphere radioactivity monitor CHANNEL CALIBRATION has been proven acceptable based on operating experience.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 30.
 2. Regulatory Guide 1.45.
 3. 10 CFR 50, Appendix A, GDC 4.
 4. NUREG 1366, December 1992.
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