

**Florida
Power**

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

September 30, 1998
3F0998-11

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

Subject: License Amendment Request #238, Revision to Licensing Basis for Reactor Coolant System Leakage Detection Instrumentation

Reference: FPC to NRC letter 3F1297-10, dated December 17, 1997, Crystal River Unit 3 Licensee Event Report 97-042, "Inadequate Engineering Evaluation Results in Loss of Diverse Reactor Coolant System Leak Detection Capability"

Dear Sir:

The purpose of this letter is to forward a proposed change to the Crystal River Unit 3 (CR-3) licensing basis. This proposed change will correct the reactor coolant system (RCS) leakage detection capability of the Reactor Building (RB) atmosphere gaseous radioactivity monitor described in the Improved Technical Specification (ITS) Bases and the Final Safety Analysis Report (FSAR). These documents currently identify that the gaseous radioactivity monitor is capable of detecting a one gallon per minute (gpm) RCS leak within one hour. The inability of the gaseous detector to meet the licensing basis was reported in the referenced Licensee Event Report. Florida Power Corporation has determined that this change to the licensing basis is an unreviewed safety question.

Several factors contribute to the difficulty in reliably detecting RCS leakage increases of one gpm within one hour using a gaseous radioactivity monitor. These include the relatively long half-life of Xe-133 (primary nuclide of detection), fluctuations in background levels of radioactivity, the existence of minor RCS leaks, improved performance of nuclear fuel, and improved primary water chemistry control. Based on RCS radioactivity concentrations assumed in the Environmental Report, half-lives of the most abundant gaseous nuclides, and background radioactivity levels, a one gpm leak can conservatively be detected in approximately 14 hours by the CR-3 gaseous monitor.

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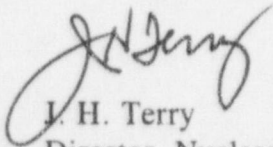
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The rapid detection of small leaks by the gaseous monitor is not considered critical for several reasons. First, the redundant RCS leakage detection instruments (RB sump level instrumentation and RB atmosphere particulate monitor) are capable of detecting a one gpm leak within one hour. Second, both generic and CR-3 specific leak-before-break analyses of RCS piping indicate flaws will not propagate to critical crack sizes without first leaking at much greater than one gpm for extended periods of time. Third, other indications of RCS leakage are available such as makeup tank level, pressurizer level, and RB cooling unit condensate flow. Therefore, a high degree of assurance exists that leaks in the RCS primary loop piping will be detected, and actions initiated to safely shut down the reactor in a timely manner using any of the three separate leak detection methods required by the Technical Specifications or by other diverse methods.

The proposed change to the licensing basis is evaluated in Attachment A. The proposed changes to the ITS Bases and FSAR in strikeout/shadow format are provided in Attachment B. The proposed changes in revision bar format are provided in Attachment C.

If you have any questions regarding this letter, please contact Ms. Sherry Bernhoft, Manager, Nuclear Licensing at (352) 563-4566.

Sincerely,



J. H. Terry
Director, Nuclear Engineering and Projects

JHT/scp

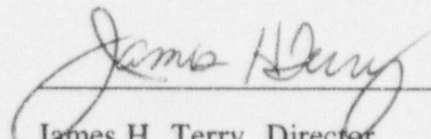
Attachments

xc: Regional Administrator, Region II
Senior Resident Inspector
NRR Project Manager

STATE OF FLORIDA

COUNTY OF CITRUS

James H. Terry states that he is the Director, Nuclear Engineering and Projects 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.

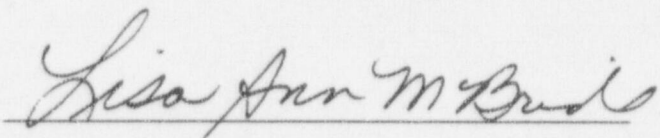


James H. Terry, Director,
Nuclear Engineering and Projects

Sworn to and subscribed before me this 30th day of September, 1998, by
James H. Terry.



LISA ANN MCBRIDE
Notary Public, State of Florida
My Comm. Exp. Oct. 25, 1999
Comm. No. CC 505458



Signature of Notary Public
State of Florida

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

Personally Known X -OR- Produced Identification _____

**FLORIDA POWER CORPORATION
CRYSTAL RIVER UNIT 3
DOCKET NO. 50-302/LICENSE NO. DPR-72**

ATTACHMENT A

**LICENSE AMENDMENT REQUEST #238, REVISION 0
Revision to Licensing Basis for Reactor Coolant System
Leakage Detection Instrumentation**

**License Amendment Request,
No Significant Hazards Consideration Evaluation,
and Environmental Impact Evaluation**