



Crystal River Nuclear Plant
Docket No. 50-302
Operating License No. DPR-72

Ref: 10 CFR 54

February 25, 2011
3F0211-03

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

Subject: Crystal River Unit 3 – Response to Request for Additional Information Associated with Open Item 3.5-1 from the Safety Evaluation Report with Open Items Related to the License Renewal of Crystal River Unit 3 Nuclear Generating Plant (TAC NO. ME0274)

References: (1) CR-3 to NRC letter, 3F1208-01, dated December 16, 2008, "Crystal River Unit 3 – Application for Renewal of Operating License"
(2) NRC to CR-3 letter, dated December 14, 2010, "Safety Evaluation Report with Open Items Related to the License Renewal of Crystal River Unit 3 Nuclear Generating Plant (TAC NO. ME0274)"

Dear Sir:

On December 16, 2008, Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc. (PEF), requested renewal of the operating license for Crystal River Unit 3 (CR-3) to extend the term of its operating license an additional 20 years beyond the current expiration date (Reference 1). Subsequently, the Nuclear Regulatory Commission (NRC), by letter dated December 14, 2010, issued a Safety Evaluation Report (SER) with open items related to the license renewal of CR-3 (Reference 2). On January 27, 2011, a telephone conference was held between the NRC staff and PEF license renewal personnel to discuss Open Item 3.5-1, Reactor Building Delamination. The discussion focused on the CR-3 schedule of monitoring and testing that will be performed to ensure that the Reactor Building concrete delamination has been adequately repaired. CR-3 agreed to provide the current schedule for the Reactor Building testing activities. The Enclosure to this submittal contains the requested summary schedule.

No new regulatory commitments are contained in this submittal. The current summary schedule for Reactor Building testing, monitoring and examination contained in the Enclosure to this submittal is being provided for information only and is subject to change.

If you have any questions regarding this submittal, please contact Mr. Mike Heath, Supervisor, License Renewal, at (910) 457-3487, e-mail at mike.heath@pgnmail.com.

Sincerely

Jon A. Franke
Vice President
Crystal River Unit 3

JAF/dwh

Enclosure: Crystal River Unit 3 - Current Schedule for Reactor Building Testing, Monitoring, and Examination (as of 02/22/2011)

xc: NRC CR-3 Project Manager
NRC License Renewal Project Manager
NRC Regional Administrator, Region II
Senior Resident Inspector

Progress Energy Florida, Inc.
Crystal River Nuclear Plant
15760 W. Power Line Street
Crystal River, FL 34428

A140
NRK

STATE OF FLORIDA

COUNTY OF CITRUS

Jon A. Franke states that he is the Vice President, Crystal River Nuclear Plant for Florida Power Corporation, doing business as Progress Energy Florida, Inc.; 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.




Jon A. Franke
Vice President
Crystal River Nuclear Plant

The foregoing document was acknowledged before me this 25th day of FEBRUARY, 2011, by Jon A. Franke.



Signature of Notary Public
State of Florida

NOTARY PUBLIC-STATE OF FLORIDA
 Sheryl M. McCullough
Commission # EE011293
Expires: JULY 25, 2014
BONDED THRU ATLANTIC BONDING CO., INC.

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

Personally Known ✓ -OR- Produced Identification

PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50 - 302 / LICENSE NUMBER DPR - 72

ENCLOSURE

**CRYSTAL RIVER UNIT 3 - CURRENT SCHEDULE FOR REACTOR
BUILDING TESTING, MONITORING, AND EXAMINATION
(AS OF 02/22/2011)**

Crystal River 3 - Current Plans for Containment Testing, Monitoring, and Examination (as of 2-22-11)

Inspection/ Authority	IWL Visual (General) Exam	IWL Visual (General) Exam	IWL Visual (Detailed) Exam	CC-6000 - SIT Inspections	Vertical Cracks Measurement	Containment Dome Testing - Impulse Response (IR) (and Impact Echo (IE) if needed)	Containment Wall Testing - Impulse Response (IR) of Select Areas (and Impact Echo (IE) if needed)	IWE Liner (General) Exam	Liner Bulge Inspections	ILRT [Last Performed in 2005]	Strain Gages in Concrete	Laser Scan of Containment Inside Diameter (ID) for Displacement	Acoustic Sensor Monitoring	Surveillance of Tendons
Schedule	ASME Code Required	Owner-Elected	ASME Code Required	Owner-Elected	Owner-Elected	Owner-Elected	Owner-Elected	ASME Code Required	Owner-Elected	ASME Code Required	Owner-Elected	Owner-Elected	Owner-Elected	ASME Code Required
Prior to Tendon Retensioning					5 Containment Bays, 1 Location in each Bay [except bay 3-4] (one location was during tendon retensioning)	IR Testing of the Dome - Completed		IWE Liner (General) Exam - Completed				Laser Scan of Containment ID for Displacement [Post Detensioning - Completed]		
During Tendon Retensioning											Strain Gage (in all 6 Bays) & Thermocouple (Bay 3-4) Monitoring	Laser Scan of Containment ID for Displacement	Acoustic Sensor Monitoring in 5 Bays	
After Tendon Retensioning					5 Containment Bays, 1 Location in each Bay	IR Testing in Select Areas in the Dome (Impact Echo if needed)	IR Testing in Select High Stress Areas in each Bay (Impact Echo if needed)		Laser Scan of the Liner above 160' elevation and Liner Bulge manual measurement and UT Thickness Examination of 4 select bulges.			Laser Scan of Containment ID for Displacement		
Prior to the SIT			Concrete replacement (Bay 3-4), Core-Bore, and Elevator anchorage repair areas	Crack mapping in 5 select areas of at least 40 ft ²										
During the SIT				Crack mapping in 5 select areas of at least 40 ft ² . Displacement inspections with Taut Wire System.						Concurrent with the SIT	Strain Gage (in all 6 Bays) & Thermocouple (Bay 3-4) Monitoring			
During the ILRT			Concrete replacement (Bay 3-4), Core-Bore, and Elevator anchorage repair areas							(See Above)	Strain Gage (in all 6 Bays) & Thermocouple (Bay 3-4) Monitoring			
Following the SIT and ILRT		Containment Exterior (accessible areas), outside of the repair areas.	Concrete replacement (Bay 3-4), Core-Bore, and Elevator anchorage repair areas	Crack mapping in 5 select areas of at least 40 ft ²	5 Containment Bays, 1 Location in each Bay		Baseline IR Testing, One panel in each Bay outside of Bay 3-4 {Nuclear Condition Report (NCR) 358724-32, see Note 1}		Laser Scan of the Liner above 160' elevation and Liner Bulge manual measurement and UT Thickness Examination of 4 select bulges.		Strain Gage (in all 6 Bays) & Thermocouple (Bay 3-4) Monitoring (For up to a 24 hour period following the pressure test)			

Inspection/ Authority	IWL Visual (General) Exam	IWL Visual (General) Exam	IWL Visual (Detailed) Exam	CC-6000 - SIT Inspections	Vertical Cracks Measurement	Containment Dome Testing - Impulse Response (IR) (and Impact Echo (IE) if needed)	Containment Wall Testing - Impulse Response (IR) of Select Areas (and Impact Echo (IE) if needed)	IWE Liner (General) Exam	Liner Bulge Inspections	ILRT [Last Performed in 2005]	Strain Gages in Concrete	Laser Scan of Containment Inside Diameter (ID) for Displacement	Acoustic Sensor Monitoring	Surveillance of Tendons
Schedule	ASME Code Required	Owner-Elected	ASME Code Required	Owner-Elected	Owner-Elected	Owner-Elected	Owner-Elected	ASME Code Required	Owner-Elected	ASME Code Required	Owner-Elected	Owner-Elected	Owner-Elected	ASME Code Required
2011 [* 35 Year Surveillance due Dec. 2011 ± 1 year, can be completed between Dec. 2010 and Dec. 2012] (See Note 3)	* 5 Year Required IWL Concrete Examination [Surveillance due Dec. 2011 ± 1 year]										Monitor the two types of concrete in Bay 3-4 using the installed sensors quarterly over a 3 year period. {NCR 358724-33, see Note 2} {Quarterly 2011, following the Containment Repair Pressure tests}			* 5 Year Tendon (35th Year) Surveillance: 2% of the Tendons [Surveillance due Dec. 2011 ± 1 year]
2012 Repair / Replacement (R&R) Tendons and Concrete exams due One year (± 3 mo.) after SIT and ILRT (Sometime in 2012) (See Note 3)	Concrete replacement, Core-Bore, and Elevator anchorage repair areas (Per IWL-2410(d)-IWL-2510-IWL-2310(a): this will be a General examination) (1 year following the SIT/ILRT ± 3 mo.)				5 Containment Bays, 1 Location in each Bay (During 1 year following the SIT/ILRT ± 3 mo.)		IR Testing, One panel in each Bay outside of Bay 3-4 {NCR 358724-32, see Note 1} {During 1 year following the SIT/ILRT ± 3 mo. or 35th Year Surveillance, whichever is later}				Monitor the two types of concrete in Bay 3-4 using the installed sensors quarterly over a 3 year period. {NCR 358724-33, see Note 2} {Quarterly 2012}			Tendons affected by Repair / Replacement activities: 4% of the R&R affected Tendons. (1 year following the SIT/ILRT ± 3 mo.)
2013 (R17)									Liner Bulge manual measurement and UT Thickness Examination of 4 select bulges in 3 Locations.		Monitor the two types of concrete in Bay 3-4 using the installed sensors quarterly over a 3 year period. {NCR 358724-33, see Note 2} {Quarterly 2013}			
2014											Monitor the two types of concrete in Bay 3-4 using the installed sensors quarterly over a 3 year period. {NCR 358724-33, see Note 2} {Quarterly 2014}			
2015 (R18)								IWE Liner (General) Exam	Liner Bulge manual measurement and UT Thickness Examination of 4 select bulges in 3 Locations.					
2016 [** 40 Year Surveillance due Dec. 2016 ± 1 year, can be completed between Dec. 2015 and Dec. 2017] (See Note 3)	** 5 Year Required IWL Concrete Examination [Surveillance due Dec. 2016 ± 1 year]				5 Containment Bays, 1 Location in each Bay {During 40th Year Surveillance}		IR Testing, One panel in each Bay outside of Bay 3-4 {NCR 358724-32, see Note 1} {During 40th Year Surveillance}							** 5 Year Tendon (40th Year) Surveillance: 2% of the Tendons Plus 4% of the R&R affected Tendons [Surveillance due Dec. 2016 ± 1 year]

Inspection/ Authority	IWL Visual (General) Exam	IWL Visual (General) Exam	IWL Visual (Detailed) Exam	CC-6000 - SIT Inspections	Vertical Cracks Measurement	Containment Dome Testing - Impulse Response (IR) (and Impact Echo (IE) if needed)	Containment Wall Testing - Impulse Response (IR) of Select Areas (and Impact Echo (IE) if needed)	IWE Liner (General) Exam	Liner Bulge Inspections	ILRT [Last Performed in 2005]	Strain Gages in Concrete	Laser Scan of Containment Inside Diameter (ID) for Displacement	Acoustic Sensor Monitoring	Surveillance of Tendons
Schedule	ASME Code Required	Owner-Elected	ASME Code Required	Owner-Elected	Owner-Elected	Owner-Elected	Owner-Elected	ASME Code Required	Owner-Elected	ASME Code Required	Owner-Elected	Owner-Elected	Owner-Elected	ASME Code Required
2017 (R19)									Liner Bulge manual measurement and UT Thickness Examination of 4 select bulges in 3 Locations.					
2018														
2019 (R20)								IWE Liner (General) Exam						
2020														
2021 (R21) [*** 45 Year Surveillance due Dec. 2016 ± 1 year, can be completed between Dec. 2020 and Dec. 2022] (See Note 3)	*** 5 Year Required IWL Concrete Examination [Surveillance due Dec. 2021 ± 1 year]				5 Containment Bays, 1 Location in each Bay {During 45th Year Surveillance}		IR Testing, One panel in each Bay outside of Bay 3-4 {NCR 358724-32, see Note 1} {During 45th Year Surveillance}			ILRT {10 Years following the Containment Repair SIT/ILRT}				*** 5 Year Tendon (45th Year) Surveillance: 2% of the Tendons [Surveillance due Dec. 2021 ± 1 year]

NOTES:

1. NRC Request for additional clarification: "Page 2 of 7 of Enclosure 1 of the applicant's letter 3F1110-03 states that the applicant will establish plan to periodically monitor concrete condition. The inspection should use NDE of the area and selective core drill. The staff needs details."

Response: This was one of the Containment Delamination Root Cause report recommendations. Nuclear Condition Report (NCR) 358724, Corrective Action assignment #32, states: "Establish an inspection plan to periodically monitor containment concrete condition to ensure there are no unexpected changes. The inspection should use nondestructive examination (NDE), such as impulse response mapping, of the area and selective core drilling in areas identified as suspect by NDE."

The implementation of this Root Cause recommendation is to perform periodic Impulse Response (IR) testing of selected areas in the Containment Bays (outside of Bay 3-4). Five (5) areas were selected, two (2) from the "High Stress" areas determined by Performance Improvement International, with the remaining three (3) to establish a representative area of the containment. These areas will be monitored following the pressure test(s) to provide the baseline data going forward, at the one year Repair/Replacement Concrete and Tendon Examination or 35th Year Surveillance (whichever is the later) and at the 40th and 45th Year Surveillances. Selected areas are: RBCN-0010 Panel "H", RBCN-0011 Panel "N", RBCN-0012 Panel "H", RBCN-0013 Panel "AC" and RBCN-0014 Panel "W." If IR scanning identifies any suspect areas, then an NCR shall be generated and evaluated by Design Engineering. Selective core drilling of suspect areas will only be performed if determined to be required by the NCR evaluation.

2. NRC Request for additional clarification: "Page 2 of 7 of Enclosure 1 of the applicant's letter 3F1110-03 states that the applicant will establish a monitoring program to evaluate the response of two types of concrete. The staff needs details."

Response: This was one of the Containment Delamination Root Cause report recommendations. Nuclear Condition Report (NCR) 358724, Corrective Action assignment #33 states: "Establish a monitoring program that evaluates the response of the installed containment monitoring sensors to ensure the two types of concrete in Bay 3-4 are behaving consistently as an indication of good coupling."

The implementation of this Root Cause recommendation is to perform periodic monitoring of selected installed containment monitoring sensors. The sensors to be monitored will be selected from those installed under Engineering Change (EC) 75220 and monitored during the EC 75221 tendon re-tensioning and the Containment Structural Integrity Pressure Test (SIT). A minimum of three (3) sensors shall be selected for monitoring purposes. The monitoring of these selected sensors will be quarterly over the next 3-year period for any significant step-change in stresses that would signify an issue between the two types of concrete installed in Bay 3-4. The continued need for the containment monitoring will be evaluated following this 3 year period. The monitoring period shall begin following the containment pressure tests (SIT & Integrated Leak Rate Test) specified in EC 75221 and continue for 3 years.

3. IWL Visual Examinations, Tendon Testing, vertical crack monitoring, and IR Testing between Containment Buttresses 1 and 3 can only be performed when the plant is off-line due to the proximity of the steam safety relief valves. In these cases the examinations, monitoring, and testing will be performed during the next available refueling outage.