



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

November 30, 2010

Mr. Jon Franke, Vice President
Crystal River Nuclear Plant (NA1B)
ATTN: Supervisor, Licensing & Regulatory Programs
15760 W. Power Line Street
Crystal River, FL 34428-6708

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT, LICENSE
RENEWAL APPLICATION (TAC NO. ME0274)

Dear Mr. Franke:

By letter dated December 16, 2009, Florida Power Corporation submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54, to renew the operating license for Crystal River Unit 3 Nuclear Generating Plant (CR-3), for review by the U.S. Nuclear Regulatory Commission (NRC or the staff). The staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. Further requests for additional information may be issued in the future.

Items in the enclosure were discussed with Mr. Michael Heath, and a mutually agreeable date for the response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-3733 or by e-mail at robert.kuntz@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Kuntz" followed by a flourish and the word "for" written in a smaller, cursive script.

Robert F. Kuntz, Sr. Project Manager
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure:
As stated

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION
LICENSE RENEWAL APPLICATION FOR
CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT
DOCKET NO. 50-302

RAI B.2.18-1

Background

Generic Aging Lessons Learned (GALL) aging management program (AMP) XI.M32, "One-Time Inspection," states in element 4, "detection of aging effects" that the inspection includes a representative sample of the system population, and, where practical, focuses on the bounding or lead components most susceptible to aging due to time in service, severity of operating conditions, and lowest design margin.

License renewal application (LRA) Section B.2.18, One-Time Inspection, states that the applicant's One-Time Inspection Program is consistent with GALL AMP XI.M32.

Issue

Due to the uncertainty in determining the most susceptible locations and the potential for aging to occur in other locations, the staff noted that large (at least 20%) sample sizes may be required in order to adequately confirm an aging effect is not occurring. The applicant's One-Time Inspection Program did not include specific information regarding how the population of components to be sampled or the sample size will be determined.

Request

Provide specific information regarding how the population of components to be sampled will be determined and the size of the sample of components that will be inspected.

DRAI B.2.19-3

Background

GALL AMP XI.M33, "Selective Leaching of Materials," states in element 1, "scope of program," that the program includes a one-time visual inspection and hardness measurement of a selected set of sample components to determine whether loss of material due to selective leaching is not occurring for the period of extended operation.

LRA Section B.2.19, Selective Leaching, states that a sample population will be selected for the inspections which will be completed prior to commencing the period of extended operation.

ENCLOSURE

Issue

Due to the uncertainty in determining the most susceptible locations and the potential for aging to occur in other locations, the staff noted that large (at least 20%) sample sizes may be required in order to adequately confirm an aging effect is not occurring. The applicant's Selective Leaching Program did not include specific information regarding how the selected set of components to be sampled or the sample size will be determined.

Request

Provide specific information regarding how the selected set of components to be sampled will be determined and the size of the sample of components that will be inspected.

RAI B.2.29-1

Background

NRC staff review has determined that masonry walls in the scope of license renewal should be visually examined at least every five years, with provisions for more frequent inspections in areas where significant loss of material or cracking is observed.

Issue

LRA Section B.2.29, under operating experience, noted that a baseline inspection was completed in 1997 and in 2007 a subsequent inspection was completed consistent with the program frequency of at least one inspection every ten years. The LRA did not provide the basis for a ten year inspection frequency.

Request

Explain how the interval will ensure there is no loss of intended function between inspections.

RAI B.2.30-6

Background

NRC staff review has determined that adequate acceptance criteria for the Structures Monitoring Program should include quantitative limits for characterizing degradation. Chapter 5 of ACI 349.3R provides acceptable criteria for concrete structures. If the acceptance criteria in ACI 349.3R is not used, the plant-specific criteria should be described and a technical basis should be provided for the plant specific criteria.

Issue

Although the LRA discussed ACI 349.3R as a reference for the Structures Monitoring Program, it did not commit to the quantitative acceptance criteria, or clearly identify plant specific quantitative acceptance criteria for Structures Monitoring Program inspections.

Request

- a) Provide the quantitative acceptance criteria for the Structures Monitoring Program. If the criteria deviate from those discussed in ACI 349.3R, provide technical justification for proposed acceptance criteria.
- b) If quantitative acceptance criteria will be added to the program as an enhancement, provide plans and a schedule to conduct a baseline inspection with the quantitative acceptance criteria prior to the period of extended operation.

RAI 4.3.3-6

Background

In LRA Section 4.3.3, the applicant discussed the methodology to determine the locations that require environmentally assisted fatigue analyses consistent with NUREG/CR-6260 "Application of NUREG/CR-5999 Interim Fatigue Curves to Selected Nuclear power Plant Components." The staff noted that, in LRA Table 4.3-3, there are ten plant-specific locations listed based on the six generic components identified in NUREG/CR-6260.

Issue

GALL Report AMP X.M1, "Metal Fatigue of Reactor Coolant Pressure Boundary," states that the impact of the reactor coolant environment on a sample of critical components should include the locations identified in NUREG/CR-6260 as a minimum, and that additional locations may be needed. The LRA is unclear whether the applicant verified that the plant-specific locations listed in the LRA Table 4.3-3 per NUREG/CR-6260 were bounding for the generic NUREG/CR-6260 components. Furthermore, the staff noted that the applicant's plant-specific configuration may contain locations that should be analyzed for the effects of the reactor coolant environment other than those identified in NUREG/CR-6260. This may include locations that are limiting or bounding for a particular plant-specific configuration, or that have calculated cumulative usage factor (CUF) values that are greater when compared to the locations identified in NUREG/CR-6260.

Request

- a) Confirm and justify that the plant-specific locations listed in LRA Table 4.3-3 are bounding for the generic NUREG/CR-6260 components.
- b) Confirm and justify that the locations selected for environmentally-assisted fatigue analyses in LRA Table 4.3-3 consists of the most limiting locations for

Crystal River Unit 3 Nuclear Generating Plant (beyond the generic components identified in the NUREG/CR-6260 guidance). If these locations are not bounding, clarify the locations that require an environmentally-assisted fatigue analysis and the actions that will be taken for these additional locations. If the limiting location identified consists of nickel alloy, state whether the methodology used to perform the environmentally-assisted fatigue calculation for nickel alloy is consistent with NUREG/CR-6909. If not, justify the method chosen.

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Sincerely,
/RA David Wrona for/
Robert F. Kuntz, Sr. Project Manager
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure:

As stated

cc w/encl: Distribution via Listserv

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OFFICE	PM:RPB2:DLR	LA:DLR	BC:RPB2:DLR	PM:RPB2:DLR
NAME	RKuntz	IKing	DWrona	RKuntz (DWrona for)
DATE	11/29/10	11/29/10	11/29/10	11/30/10

OFFICIAL RECORD COPY

Letter to J. Franke from R. Kuntz dated November 30, 2010

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