

Sykes, Marvin

From: Saba, Farideh
Sent: Wednesday, October 14, 2009 1:28 PM
To: Kuntz, Robert; Bernardo, Robert; Sykes, Marvin; Giitter, Joseph; Howe, Allen; Nelson, Robert; Boger, Bruce
Cc: Khanna, Meena; Boyce, Tom (NRR); Paige, Jason; Manoly, Kamal; Farzam, Farhad
Subject: FYI: POP for Eric Leeds briefing
Attachments: POP for Crystal River Containment Crack.doc

As requested by Eric Leeds, DE and DORL briefed him today on the containment crack (delamination) issue at Crystal River. DORL/LPL2-2 and DE/EMCB prepared the attached POP that was presented to Eric Leeds by Jason Paige (backup PM for Crystal River) and Farhad Farzam technical reviewer on the containment issue from EMCB. Tom Boyce (LPL2-2 BC), Meena Khanna (EMCB BC), Kamal Manoly (EMCB senior technical advisor), and Farideh Saba (Crystal River PM) were also present and supported this briefing.

Farideh

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A-174

Briefing on Crystal River Unit 3 Containment Delamination Issue (10/14/09)

BRIEFERS: DE/DORL

PURPOSE:

To inform NRR Office Director of activities being conducted in support of the recent Crystal River Unit 3 containment delamination issue that was identified by Progress Energy while performing hydro-demolition to support the steam generator removal and replacement activities.

To discuss current status and future plans in addressing the delamination issue.

EXPECTED OUTCOMES:

Common understanding of topics discussed.

PROCESS:

Current Plant Status: No Mode - core off loaded; Outage is 10 days behind schedule due to the need to re-engineer the steam generator lift system on containment

Summary of Issue: On Friday, October 2, Progress Energy (PE) was cutting into containment to replace their SGs. While performing the hydro-demolition of the concrete, the licensee noticed that water was leaking out of containment from a crack about 2.5 feet long. The crack runs vertically up the containment and is located between the vertical and horizontal tendons. It has been categorized as delamination of concrete. The licensee has not yet been able to determine how far around the containment the crack has propagated.

NRC Activities:

- Region II SIT Inspection – Started Tuesday, 10/13; NRR/DE member + ORNL contractor on team; Team is up to 8 people on a rotating basis for several months; NRR participating in team conference calls
- Chairman Brief – DE/DLR brief on 10/8 in preps for visit to CR3 10/9; EDO brief on 10/8
- DE examining generic implications
- GT from the Chairman - 1) provide a list of plants that have had cut holes in containment to get components in and out; 2) identify those plants by containment; and 3) of those plants, identify those that had problems similar to that recently identified at Crystal River. DE and DORL are working with RES and NEI to compile this list. Due date is 10/22
- IFR - generated by OpE for generic experience
- Region II alerted all regions to issue – TMI cutting containment this week for S/Gs
- NRR tapping expertise in RES in aircraft studies/concrete
- FOIA from Paul Gunter received 10/8 on CR3 & containment delamination

Communications

- Talking Points generated by Rgn II & given to Chairman/EDO; HQ OPA involved
- Press release from Rgn II on SIT issued - several calls from the media
- Florida State Dept of Environmental Protection Coordinator called the site VP

Future Activities

- CR3 to complete root cause analysis - support from various vendors (MPR, Sargent & Lundy, and Bechtel). They have also outreached to NEI and INPO for assistance.
- The licensee will need to declare the containment operable before they transition to Mode 4, which is tentatively scheduled for December 2009. The licensee stated that once they obtain additional or any new information, they will notify the NRC
- DE/DORL examine reports from licensees on containments required by TS
- NRR DE and DORL will continue to support Region II SIT
- NRR/DE will determine the need to further address generic implications

Current Plant Status

Crystal River is currently in No Mode and core off load was completed Friday (10/9) morning. The outage is 27 shifts behind after 20 shifts (10 days) was added to the schedule on Friday due to the need to re-engineer the steam generator lift system so that no load is placed on the containment.

Background

On Monday, October 12, Progress Energy (PE) was (the equipment hatch is too small to remove the SGs). While performing the demolition, the licensee noticed that water was leaking out of containment from a crack about 2.5 feet long. The crack runs vertically up the containment and is located between the vertical and horizontal tendons. It has been categorized as delamination of concrete. The licensee has not yet been able to determine how far around the containment the crack has propagated.

Communications

- The Florida State DEP Coordinator called the site VP regarding potential contaminated water leaking from a crack in containment. The site VP was able to resolve the misinformation and is considering contacting the local press to dispel any rumors or misconceptions.
- On Thursday, October 8, 2009, the staff briefed Bruce Mallett regarding the issue and its plans to brief Chairman Jaczko. Then DE briefed Chairman Jaczko in preparation of his site visit Friday, October 9, 2009. One action item from brief tasked to DE staff.
 - DE requested DORLs assistance
 - NRR is coordinating with RES and NEI to obtain information
- On Thursday, October 8, 2009, Region 2 issued a press release announcing that a special inspection will take place at Crystal River. Region 2 received several calls from the media asking for additional info on the issue and any preliminary findings. The region addressed the preliminary findings request by stating that they would provide all of their findings at the conclusion of the inspection. No members of the media went to Crystal River on Friday to meet or ask any questions to the Chairman.
- On Thursday, October 8, 2009, the NRC (DORL, OPA, DLR, DE) and Progress Energy held a teleconference to discuss the SG support outside lift system modification, the licensee's efforts to date, and future plans to resolve the issue.
- On Thursday, both the region/OPA and PE issued talking points in support of the Chairman's visit and for public communications.

Path Forward

- PE completed an analysis that shows that the containment will be able to withstand temperatures generated from any decay heat.
- The licensee completed an analysis on the polar crane to ensure that it will be able to withstand the weight of the SGs.
- PE has a Design Containment Specialist performing a root cause investigation and identifying necessary future actions by CR to determine if containment will be operable.
 - Before CR can come up in power, they have to perform an analysis of why crack is ok or repair the crack (Mode 4 scheduled for Dec 2009).
 - From root cause analysis, CR will be able to determine if need a license amendment or not
 - Completion of root cause analysis TBD
- The region is performing a special inspection at Crystal River, regarding the containment crack, which was kicked off on Tuesday, October 13, 2009 by the entrance meeting. The region requested HQs to provide expertise support during this inspection but also an expert to assist in the inspection.
 - DE provided comments and concurrence to the Region 2 Charter of the SIT on Friday.
 - George Thomas of NRR/DE is supporting the Region 2 SIT. We also have identified couple of other experts (Farhad Farzam and Hans Ashar) in NRR that will support this initiative.
 - NRR/DE has also contracted ORNL to participate in the SIT as an independent reviewer/inspector.
- NRR received a green ticket for action from the Chairman's office to: 1) provide a list of plants that have had cut holes in containment to get components in and out; 2) identify those plants by containment; and 3) of those plants, identify those that had problems similar to that recently identified at Crystal River. NRR is working with Research and NEI to compile this list. The due date is October 22, 2009.
- In the near future, the licensee will complete a failure analysis and root cause analysis, although no specific date has been set for completing this.
 - The analyses mentioned above have all been entered in their corrective action program for tracking. The licensee plans to determine how far the crack has propagated using non-destructive techniques.
 - To assist in their analyses, the licensee has requested support from various vendors (MPR, Sargent & Lundy, and Bechtel). They have also outreached to NEI and INPO for assistance.
 - Until the licensee has completed its failure and root cause analyses, they will not know their path forward with regards to licensing action(s) needed (i.e., license amendment request).
 - The licensee will need to declare the containment operable before they transition to Mode 4, which is tentatively scheduled for early December 2009. The licensee stated that once they obtain additional or any new information, they will notify the NRC immediately.

- Progress Energy removed 10 vertical and 17 horizontal tendons before concrete removal. The rest of 10 vertical tendons on each side and the 9 horizontal tendons on the top and bottom of the opening will be detensioned before the concrete is poured. The total will be 30 vertical and 35 horizontal tendons.

Generic/Other Implications

- NRR, based on the root cause analysis, will determine whether age-related degradation issues are involved, and will address the issue, as necessary, via the Crystal River license renewal review. As necessary, also based on the root cause analysis, NRR/DE will address any generic issues, as necessary via an IN.
- NRR/DE is also supporting Region I with TMI, which will be going into outage (on or about 10/24) to also accomplish steam generator replacement. Additionally, TMI has a containment structure similar in design to CR, and will be removing sections (liner and concrete) in much the same manner to accommodate SG replacement.