From: Jackson, Donald
Sent: Sunday, December 19, 2010 2:19 PM
To: 'Mary Lampert'
Subject: Response To E-Mail Concerning GEH Marathon Control Rod Blades

Dear Mary,

I am writing in response to your emails to Mr. Bill Dean dated December 2 and December 6, 2010. As we discussed on the phone on December 7, Mr. Dean forwarded me your emails for follow-up. The subject of your emails was the interim Part 21 notification submitted by GE Hitachi Nuclear Energy (GEH) to the NRC regarding Marathon control rod blades (CRBs). Your emails asked a number of questions regarding the CRB issue as it relates to Pilgrim Nuclear Power Station.

I would first like to share with you the actions NRC is taking to monitor the CRB issue across the industry. We have worked closely with GEH to understand the extent of cracking identified, the factors that contributed to the cracking, the susceptibility of the Marathon CRBs at domestic plants, and the timeline for GEH's failure analysis. We have ensured that all potentially affected plants are aware of the issue and have entered it into their corrective action programs (CAPs). Additionally, we have confirmed that GEH plans to inspect all potentially affected plants for Marathon CRB cracking starting with the Spring 2011 refueling outages. A cracked CRB will result in B-10 leaching into the reactor coolant, which will cause an increase in the amount of boron, lithium, and tritium in the reactor coolant. Because no such increases in reactor coolant chemistry have been identified to date, there is no immediate safety issue at any of the domestic plants.

GEH is conducting a failure analysis for the Marathon CRBs, which will determine if any action must be taken to prevent cracking at domestic plants. Once the analysis is finalized, the NRC will review the analysis for any safety issues. (Please note that the October 20 and December 1 reports were interim reports until the final analysis can be completed.) Experts at the NRC Headquarters office, who have the lead for NRC's response to this issue, will remain highly engaged as GEH finalizes their analysis and develops a path forward.

Regarding Pilgrim Station, the NRC resident inspectors at Pilgrim have verified that Entergy entered this issue into their CAP for evaluation. The inspectors confirmed that only a small number of the overall population of CRBs installed in the Pilgrim reactor are Marathon CRBs, and that Entergy is sampling the reactor coolant to monitor for boron and tritium. Based on the facts that the CRBs are early in their mechanical lifetime and no significant changes in reactor coolant chemistry have been observed, the NRC has determined that there is no immediate safety concern at Pilgrim. In order to further evaluate the Marathon CRB cracking issue as it applies to Pilgrim, we understand that Entergy, in coordination with GEH, plans to perform inspections during the upcoming Spring 2011 refueling outage. The resident inspectors will continue to closely monitor Entergy's evaluation of this issue.

Regarding your question about the impact of the boron on reactor power, low levels of B-10 leaching into the reactor coolant would result in a negligible, localized increase in neutron absorption that would not affect overall reactor power or flux patterns.

The NRC is committed to ensuring that GEH and the affected licensees properly analyze, report, and develop solutions for this potential generic issue and that they take appropriate actions should any safety impacts be identified. I hope the information provided in this email gives you assurance that the CRB issue does not pose an immediate safety concern at Pilgrim or at any of the domestic plants. The NRC will continue to remain actively involved until the issue is fully understood and addressed by the industry.

Very Respectfully,
Donald E. Jackson, Chief- Region I DRP Projects Branch 5