

Boyle, Patrick

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From: Khanna, Meena *me*
Sent: Thursday, September 15, 2011 9:15 PM
To: Karwoski, Kenneth
Cc: Martin, Robert; Boyle, Patrick
Subject: FW: Questions/Issues related to North Anna Seismic Event
Attachments: NRR_DE_EICB High Priority Questions Potentially Affecting North Anna Re-start Plans (2).docx

One more set of questions

From: Rahn, David *me*
Sent: Thursday, September 15, 2011 9:13 PM
To: Khanna, Meena; Martin, Robert
Cc: Wilson, George; Dittman, Bernard; Wyman, Stephen; Kemper, William; Stattel, Richard
Subject: RE: Questions/Issues related to North Anna Seismic Event

Hi Meena and Bob:

Please see the attached "high priority" questions from the NRR/DE/EICB members associated with the North Anna Earthquake Event of August 23, 2011. The "high priority" questions are those deemed to potentially influence the content of the licensee's proposed Restart Plan to be submitted to the NRC staff for its evaluation.

Please note that yesterday we held a teleconference with Shakur Walker who is one of the AIT members currently tasked with the AIT charter activities, working with Mark Franke of the Region II staff. The attached list of questions does not duplicate activities which are currently identified in the AIT charter.

Dave

From: Khanna, Meena
Sent: Wednesday, September 14, 2011 12:14 PM
To: Mendiola, Anthony; Ulses, Anthony; Casto, Greg; Dennig, Robert; Bailey, Stewart; Taylor, Robert; Lupold, Timothy; Mitchell, Matthew; McMurtray, Anthony; Wilson, George; Murphy, Martin; Mathew, Roy; Tate, Travis; Martin, Robert; Harrison, Donnie; Circle, Jeff; Klein, Alex; Pham, Bo; Auluck, Rajender; Pelton, David; Kulesa, Gloria; Manoly, Kamal; Miranda, Samuel; Mitman, Jeffrey; Karipineni, Nageswara; Rahn, David; McConnell, Matthew; Goel, Vijay; Sahay, Prem; Som, Swagata; Scales, Kerby; Matharu, Gurcharan; Laur, Steven; Snodderly, Michael; Sheikh, Abdul; Bedi, Gurjendra; Lin, Bruce; Franke, Mark; McCoy, Gerald; Boyle, Patrick; Martin, Robert; Kulesa, Gloria
Cc: Hiland, Patrick; Howe, Allen; Galloway, Melanie; Lubinski, John; Wilson, George; Lee, Samson; Evans, Michele; Giitter, Joseph; Farzam, Farhad
Subject: Questions/Issues related to North Anna Seismic Event
Importance: High

All,

Pls note that the licensee has indicated that they plan to submit their restart document to us this Friday. Having said that, we'd like to request that **all technical BCs, as applicable, identify any high priority questions, e.g., related to fuel, etc. be submitted to Bob Martin and myself by 2:30 pm today.** The plan is for us to share these questions with the licensee by COB, today, and provide them with an opportunity to hold conference calls with us tomorrow to discuss, as needed. We would like to send whatever high priority questions we have today, so that at least they can consider them prior to issuing their document. Pls. note that this is by no means intended to be an all inclusive list.

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NRR/DE/EICB Questions Regarding Licensee Response to August 23, 2011 Earthquake Affecting the North Anna Nuclear Power Station

High Priority Questions (potentially affecting Licensee's Submittal of Unit 1 and 2 Restart Plans)

1. The NRR headquarters I&C staff understands that Dominion has been examining all unusual spurious changes of state of I&C and Electrical equipment which impacted the Sequence of Events recorders and other post trip review logs from the August 23rd event, and that the NRC staff AIT members are confirming the licensee's actions in thoroughly investigating the root causes of unexpected equipment performance in this area.
 - a. Please confirm that any immediate follow-up actions identified that are resulting from this effort (e.g., required equipment replacements, enhancements/repairs in equipment mounting configurations, etc.) regarding such unexpected I&C equipment spurious actuation will take place before restart of the units.

2. The licensee's presentation to the NRC staff on September 8, 2011 identified that "comprehensive surveillance testing to validate SSC operability/performance" (448 surveillance tests) will be performed. The NRC headquarters I&C staff would like to understand the basis for selection of the particular I&C-related surveillance tests that are scheduled to be performed and whether the licensee has identified any additional acceptance criteria for such testing that may require additional field confirmations or additional test steps to be performed during such surveillance testing.

For example, some RTS and ESF periodic functional testing is performed without including the local transmitter in the loop, and some locally-mounted instrumentation devices have flexible conduit connections. Should these connections be subjected to seismic acceleration in key natural frequencies of the flexible section that are in excess of design basis conditions, the additional stress put on the instrument terminals could weaken the electrical connections at the terminal strips of the devices, which could result in momentary disruption of the signal, but not permanent disruption that would manifest itself under the static conditions normally present during a periodic surveillance test.

- a. Please confirm that the possibility that loose electrical and/or mechanical connections were considered as part of the instrumentation walkdowns and was addressed as additional acceptance criteria to be tested when the instructions for the performance of such surveillance testing were developed.

- b. Please confirm that the licensee has verified that safety related instrumentation (especially mechanical instrumentation) calibration remains within specification.

- c. Please confirm that the licensee has verified that safety related instrumentation channel response times remain within specifications. In particular, the settings of mechanically- based instrumentation devices and relays (e.g., Agastat time delay relays, and other devices) that are subject to excessive acceleration can drift, resulting in a total channel response time that could exceed analyzed event response time requirements.
3. The NRC headquarters I&C staff requests the licensee to confirm that the plans for start-up testing of each unit include confirmation of proper operation of non-safety, but important to safety control systems, such as would be performed as elements of the pre-operational and power ascension testing described within Appendix A to Revision 3 of Regulatory Guide 1.68 to verify proper operability of the normal (non-safety related) plant control systems (e.g., feedwater control, rod control, pressurizer level and pressure controls, secondary system steam pressure control system, main turbine and feedwater pump turbine control systems, in-core instrumentation, plant annunciator and process computer systems, seismic instrumentation system, plant instrumentation grounding system, etc.).
 - a. Please confirm which non-safety but important-to-safety plant systems were identified by the licensee as critical to the safe operation of the plant.
 - b. Please confirm what pre-operational testing has been selected to confirm proper operability of these systems prior to start-up.
 - c. Please identify what sequence of testing and administrative controls will be utilized during the planned power ascension during restart to ensure that such systems are properly operating before increasing to the next power level.