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From: Brett Rini
To: Bruce Boger; James Wiggins; John Grobe
Date: 8/20/2007 10:14:01 AM
Subject: Status Update on Japanese Earthquake Review

All,

As an update to John Thorp's previous e-mail, I would like to provide the current status of our review and activities related to the Japanese earthquake. DIRS/IOEB is still acting as the NRC POC regarding the Japanese earthquake.

- The Issue for Resolution (IFR) is in concurrence. One of the applications of the IFR is development of a user needs letter for the Office of Research to perform a long-term evaluation of the lessons learned from the Japanese earthquake as more insights are gained and more information is released to the NRC. This letter will also request that RES perform a more detailed analysis and comparison of the US and Japanese seismic standards and analyses. IOEB is also planning to develop an internal website dedicated to this event to post background information and related seismic documents.

- IOEB provided the EDO staff with the attached one-page update on information received since August 1. This was in response to a request from Commissioner Lyons' staff for updated information before his trip to Diablo Canyon.

- The IAEA report titled, "Preliminary Findings and Lessons Learned from the 16 July 2007 Earthquake at Kashiwazaki-Kariwa NPP," has been issued, and it has also been provided to the EDO staff for Commissioner Lyons.

- We are working with RES and OIP to schedule several near-term briefings on the earthquake from the following: United States Geological Survey (USGS) representatives, Japanese Nuclear and Industrial Safety Agency (NISA) representatives, and Jim Johnson - US participant on IAEA team.

Please contact me if you have any questions regarding this e-mail.

Brett Rini

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>>> John Thorp 08/07/2007 10:40 AM >>>

During the next two to three weeks, while continuing communication and operating experience discussions are taking place within the EDO and Commission staff and in the regions, and until the agency transitions to longer term follow-up analysis of the data and information emerging from the recent Japanese seismic event, the Operating Experience Branch in NRR/DIRS has been tasked to provide an individual to act as the agency point of contact for seismic event followup efforts.

This week, through 13 August, Stephen Pannier (415-4083) is the agency point of contact for seismic event followup activities. He will coordinate with assigned technical staff experts in NRR and NRO and conduct meetings as necessary, to ensure all participants stay in synch with one another's efforts. Next week, Brett Rini (415-3931) will return on 14 August and will re-assume the role of NRC POC for seismic follow-up activities.

MJ Ross-Lee, Steve Pannier, and Brett Rini met with Elmo Collins on August 1st to discuss the plans for

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moving forward. Since the full evaluation of the event won't be completed for some time, IOEB will be taking steps to close the current seismic event Issue for Resolution (IFR) with a preliminary evaluation that states there are no immediate safety concerns for plants in the US. As part of the IFR closure, technical staff seismic experts have been asked to provide a few paragraphs each on why existing (Kamal Manoly) and new (Becky Karas/Yong Li) US reactors are okay, and what work we have been doing related to seismic issues. IOEB will pull all of this information and other required information together to finalize the IFR.

Please call me or Steve Pannier if you have any questions regarding this e-mail.

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Updated Information on Impact of Japanese Niigata-Chuetsu Oki Earthquake on Kashiwazaki-Kariwa Nuclear Power Plant (August 1 - August 17)

Members of a joint US-Japan earthquake reconnaissance team has completed its visit to Japan to analyze the impact of the earthquake on the local area. During the visit, a member of the reconnaissance team visited the Kashiwazaki-Kariwa Nuclear Power Plant to review the impact to the plant. The team confirmed that measured peak acceleration values were often much higher than the design values. In some cases, the measured values at the plant were as much as two to three times as much as the design. Due to the apparent absence of structural damage, the team believed that the design of the plant resulted in redundant structures with large safety margins. There was damage observed at the plant, but it appeared to be related to problems with the soils. There were signs of liquefaction, distorted roads, and a small landslide in a man-made hill separating reactors 1-4 from reactors 5-7. Official accounts indicate that the main structures did not suffer any significant damage, and the reactor protection system operated successfully to trip the plants that were operating.

The International Atomic Energy Agency (IAEA) has also completed its visit to the Kashiwazaki-Kariwa Nuclear Power Plant. The inspection team stated that the plant behaved in a safe manner, during and after the earthquake. Safety-related structures, systems, and components seemed to be in a much better general condition than might be expected following such a strong earthquake, most likely due to the conservatism in the design. The team noted that important components, such as the reactor vessels, the core internals, and the fuel elements have not yet been examined in-depth. Non-safety related structures, systems, and components did experience significant damage such as soil and anchorage failures and oil leaks due to the ground motion. The team indicated that a reevaluation of the seismic safety of the plant needs to be performed using updated criteria and methods and noted that long-term operation of the plant may be affected by hidden damage from the earthquake.

The Japanese Nuclear and Industrial Safety Agency (NISA) continues to issue press releases regarding the condition of the Kashiwazaki-Kariwa Nuclear Power Plant. The utility continues to identify damage in other areas as their inspections continue. A summary of recently confirmed issues is below:

- Regarding the damage to the Unit 6 reactor building crane, the utility has now identified three places that the crane was damaged.
- The utility has indicated that during the earthquake, workers on the refueling floor were splashed by water sloshing in the spent fuel pool. The workers exited the controlled area after confirming that they had not been contaminated.
- On the Unit 4 refueling area, a leak of about 200 liters of hydraulic oil was found leaking from the stud bolt tensioner which is used to tighten the upper head to the reactor vessel. In Unit 6, leakage of about 24 liters of hydraulic oil was found.
- Additional transformer oil leaks were found, and it is believed that oil has filtered into the soil.
- Ornamental lights in the main control rooms of Unit 6 and Unit 7 fell, and the emergency lighting was displaced.

NRC staff is continuing to gather information related to the Japanese earthquake that occurred on July 16, 2007, and will apply the lessons learned from the event to United States reactors through Regulatory Guide changes and other agency programs.