

47

Thompson, John

From: King, Mark *INRC*
Sent: Thursday, September 01, 2011 9:30 AM
To: Cook, Christopher; Bernardo, Robert
Cc: Thomas, Eric; Beall, Robert; Copeland, Douglas; Craffey, Ryan; Harmon, David; Patel, Jay; Frye, Timothy; Issa, Alfred; Thompson, John; Thorp, John; Issa, Alfred
Subject: RE: Geo-science OpE - Bob please keep Chris Cook, NRO, informed (by cc-ing him) on North Anna info / updates
Attachments: NA AIT notes; image003.png

Chris,
 Here's the latest info from the first phone call of the AIT that was held yesterday afternoon. Our NRR/IOEB OpE Branch regional contact point following up on this North Anna issue is: **Bob Bernardo**.

Bob - please keep Chris informed as requested on North Anna. Thanks.

Chris,
SEE THE ATTACHED - North Anna (NA) AIT Notes, from yesterdays, 8/31, phone call.
 FYI,
 Mark

PS - Also Note: An aftershock occurred this morning on Thursday, 9/1/2011: **North Anna declared an UNUSUAL EVENT at 0518 EDT based upon aftershocks**. There are no reports of damage. The NRC remains in the 'normal' response mode as of 0529 EDT. Both units remain shutdown in Mode 5. **USGS reports the earthquake as 3.4 magnitude**.

Here the news item summary for today 9/1, on the North Anna issues, FYI.

Dry Casks At North Anna Station Shifted During Earthquake, NRC Says. The Richmond (VA) Times-Dispatch (9/1, Bacqué, 127K) reports, "Last week's central Virginia earthquake caused 25 spent-fuel storage casks - each weighing 115 tons - to move on their concrete pad at Dominion Virginia Power's North Anna nuclear power plant." According to the NRC, last week's quake was the first time "shifting of these massive casks holding used nuclear fuel was" recorded in the US, though none of the "metal cylinders was damaged and no radiation was released, Dominion Virginia Power said." Dominion spokesman Rick Zuercher said the "16-foot tall casks shifted from an inch to 4½ inches." NRC "regulators will examine data from the spent-fuel storage area as part of the inspection of the plant that the NRC began Tuesday, said Scott Burnell," an NRC spokesman.

The Fredericksburg (VA) Free Lance Star (9/1, Dennen, 43K) reports Dominion spokesman Zuercher said "The earthquake did move, slightly, some of the dry storage casks on the pad," adding, "We're evaluating whether we need to move them back." Zuercher noted that "newer steel and concrete casks that sit horizontally on pads sustained some minor 'cosmetic' damage."

On his "Water, Earth and Sky" blog for the Fredericksburg (VA) Free Lance-Star (9/1) Rusty Dennen wrote, "Dominion Virginia Power, in the midst of stepped-up inspections at North Anna Power Station, says 25 of 27 vertical steel casks that hold highly radioactive spent fuel, shifted up to 4 1/2 inches on their pads in last Tuesday's magnitude 5.8 earthquake." Reuters (9/1, Rampton) also covered the story.

NRC's AIT Begins Three-Week Review Of North Anna Station. Virginia Business (9/1, Squires, 28K) reports the six inspectors from NRC's Augmented Inspection Team "remained onsite Wednesday" at North Anna Power Station, beginning their "three-week review" of how the plant "held up during last week's 5.8-magnitude earthquake." At issue is "whether the quake's ground motion exceeded the amount of shaking the plant was designed to withstand." The plants remained offline and NRC public affairs officer Joey Ledford said

E/36 R (15)

"Dominion has not requested clearance at this point to restart them." After the AIT gathers information for the NRC's "continuing evaluation of earthquake risk at all US nuclear plants," Ledford said "the NRC will hold an exit meeting with Dominion and a public meeting near the plant to discuss the findings."

If Quake Had Damaged North Anna, Residents Downwind Would Have Been Advised. On its website, WTOP-FM Washington, DC (8/31, Silverberg) reported that if there had been "damage and a radiation leak" at North Anna station following last week's quake, state emergency management spokesman, Bob Spieldenner, "says the sirens [would] act as a signal for people to tune into local media for more details. ... 'Depending on the wind direction, those downwind would evacuate, so we are not talking about large population numbers,' says Spieldenner."

Quake Said To Underscore Need For Effective Regulation. According to a Toledo (OH) Blade editorial, partially reprinted on the Linton (OH) Tribune's (9/1) website, while the "5.8-magnitude East Coast earthquake" does not justify "hysteria," it does underscore "the need for effective regulation of nuclear plants, and an adherence to modern, scientifically robust engineering principles." The piece adds that the NRC "has never completely shed its image as a cheerleader for the nuclear industry. The commission endangered northern Ohio when it failed to provide effective oversight before the near-rupture of the original reactor head at FirstEnergy's Davis-Besse nuclear plant in Oak Harbor in 2002."

And Here is a link to an Energy Daily Article from August 30, 2011 - that is also pasted below

© 2011 IHS Global Inc. Tuesday, August 30, 2011 ED Vol. 39, No. 166

Quake Stresses May Have Topped Virginia Nuke's Design Limits

BY GEORGE LOBSENZ

In a disclosure likely to raise the temperature of the debate over earthquake safety at U.S. nuclear plants, the Nuclear Regulatory Commission said Monday that preliminary reviews by the operator of the North Anna nuclear plant indicate that ground motion at the Virginia facility during the recent earthquake may have exceeded levels that the plant was designed to withstand.

Nonetheless, NRC and Dominion, the operator of the plant, were quick to add that continuing inspection of the two-reactor plant showed no significant damage to safety systems at the plant, which is located only about 10 miles from the epicenter of the quake at Mineral, Va.

However, a discovery that ground-shaking at the plant during the earthquake may have exceeded the plant's so-called "design basis"—the technical parameters set by NRC for the plant to ensure that reactor cooling and containment equipment can withstand seismic events—is likely to heat up allegations by antinuclear groups that federal regulators have not accurately assessed existing earthquake risks to U.S. nuclear plants.

The NRC already has committed to re-examine earthquake risks in the wake of the earthquake-induced accident at Japan's Fukushima Daiichi nuclear plant, but antinuclear activists have suggested the agency needs to move with more urgency on enhanced seismic protection requirements at U.S. plants—some of which the activists claim are unsafe under present NRC regulations.

NRC officials have rejected those claims as unfounded, but the agency acknowledged after the Fukushima accident that new seismic studies had recently raised questions about NRC's current assessment of earthquake risks facing nuclear plants in parts of the East and Midwest. In fact, NRC officials said that prior to the Fukushima disaster, they had begun to review their earthquake models for those U.S. regions to see if they underestimated seismic risks to existing nuclear plants.

The preliminary data on ground motion at North Anna during the quake—if confirmed—may provide the clearest evidence yet that NRC's current regulatory regime may be underestimating real-world earthquake risks at some plants.

The North Anna disclosure follows on the heels of a low-profile announcement by NRC August 23—the day the quake shook the East Coast—that NRC staff would make recommendations to the commission August 31 about which of the safety recommendations recently made by NRC's Fukushima review task force should be acted on by the commission "without unnecessary delay."

The August 31 date is notable because the NRC earlier this month said it would give its staff until September 9 to propose recommendations that needed to be acted on "without unnecessary delay."

Meanwhile, NRC said Monday it had dispatched an augmented inspection team, or AIT, to North Anna to review the ground motion data recorded by Dominion on instruments at various locations at North Anna, which is located near Louisa, Va., about 40 miles northwest of Richmond.

"The fact that we're sending an AIT should not be interpreted to mean that Dominion staff responded inappropriately or that the station is less safe as a result of the quake," NRC Region 2 Administrator Victor McCree said in a statement. "An AIT provides us with the resources needed to completely understand all the effects at North Anna and gather important information for the NRC's continuing evaluation of earthquake risk at all U.S. nuclear plants."

However, NRC said its own preliminary analyses indicated that ground motion at North Anna may have exceeded the plant's design basis, and that it would be working with Dominion to determine if "additional actions" might be needed before restart of the plant, which safely shut down after the earthquake occurred.

"No significant damage to [North Anna] safety systems has been identified, but Dominion has reported to the NRC that initial reviews determined the plant may have exceeded the ground motion for which it was designed," NRC said in its press release. "This determination is in line with NRC's preliminary independent analyses, although data is still being collected and analyzed to determine the precise level of shaking that was experienced at key locations within the North Anna facility."

"The company and the NRC will continue to carefully evaluate information to determine if additional actions may be necessary. NRC regulations require that the station not start up until it can demonstrate that no functional damage occurred to those features needed for continued safe operation."

Jim Norvelle, a spokesman for Dominion, confirmed NRC's statement that the company alerted NRC to the worrisome ground motion data, which he said were undergoing reviews that would not be completed until later this week.

He also said that Dominion to date had found only minor damage at the plant, such as insulation that had been shaken off some pipes and minor wall cracks in office buildings located outside plant operating areas. Interpreting ground motion data is complex because it reflects many more factors than the more commonly referenced earthquake magnitude measurements made under the relatively well-known Richter scale.

Dominion officials last week confirmed that while last week's East Coast quake measured 5.8 on the Richter scale, North Anna was designed to withstand a 6.2 magnitude earthquake.

However, NRC noted in a fact sheet last week that it was not possible to translate Richter measurements—which express the energy released by a quake—into ground motion data at a specific site.

"Several important factors affect the relationship between an earthquake's magnitude and associated ground acceleration, including the distance from the earthquake, the depth of the quake and the site's local geology (i.e., hard rock or soil)," NRC said in the fact sheet issued Thursday.

"A small earthquake close to a site could therefore generate the same peak ground acceleration as a large earthquake farther away." NRC said its earthquake safety requirements for individual U.S. nuclear plants were based on an examination of the seismological history of an area around a given plant, which provides an understanding of the largest quake and associated ground motion expected at that plant.

But NRC said that later this year it planned to give U.S. nuclear plant operators new seismic assessment tools developed in conjunction with new reactor construction applications so plant operators could perform updated reviews of their earthquake risks.

Rumors about the ground motion data at North Anna appear to have been floating around last week, as evidenced by a seemingly prescient letter to NRC Friday from Rep. Edward Markey (D-Mass.), a leading nuclear critic in Congress, who asked the agency whether ground motion at North Anna exceeded the plant's design basis during the quake.

Markey also asked NRC to tell him "whether the requirements for the North Anna nuclear plant had incorporated modern geologic information in the safety margins for the facility."

Markey has repeatedly hammered the NRC for failing to move more quickly to implement the recommendations of its task force reviewing the Fukushima accident, which called for NRC to require U.S. nuclear plant operators to update their seismic safety assessments.

Markey in a letter Monday also said the hurricane that roared up the East Coast this weekend prompted at least one shutdown and a number of minor safety incidents at numerous nuclear plants in its path, raising fresh questions about emergency preparedness at U.S. reactors.

Source of above Energy Daily Article: <http://www.internal.nrc.gov/IRM/LIBRARY/ejournal/pdf/ed/ed110830.pdf>

FYI, any questions please contact Bob Bernardo, our IOEB Region-II/ North Anna point of contact.

Thanks,

Mark

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From: Issa, Alfred *INFO*
Sent: Thursday, September 01, 2011 6:21 AM
To: Cook, Christopher; Frye, Timothy
Cc: Thomas, Eric; King, Mark; Beall, Robert; Copeland, Douglas; Craffey, Ryan; Harmon, David; Patel, Jay
Subject: RE: geo-science OpE

Chris,

Thank you very much for your support. I will discuss with Tim the need to initiate an IFR regarding the seismic event at North Anna and the strategy for future communication between our groups. Based on our discussions, it may be useful to add a geotechnical/seismology COMM and TRG groups and if we do, we will request an NRO Lead from your group. We do currently have a "Natural Phenomena" COMM group that you may want to have your staff sign up for. However, I could not locate a corresponding TRG group. This means that your staff will only be able to see COMMs associated with Natural Phenomena which lag the events by about two weeks. It also means that they will see all natural phenomena COMMs and not just the ones associated with seismology ... I will touch base with you again after the counterpart meeting in RII next week to discuss your preferences.

ConE team/Mark King,

In the meantime, can you please make sure that you disseminate any seismic related events/updates such as the ones associated with the North Anna AIT, to Mr. Cook?

Thank you

Alfred Issa, P.E.
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Reactor Operations Engineer
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(301) 415-5342

From: Cook, Christopher *INFO*
Sent: Wednesday, August 31, 2011 4:50 PM
To: Frye, Timothy; Issa, Alfred
Subject: RE: geo-science OpE

This is OK with me.
Chris

From: Frye, Timothy
Sent: Wednesday, August 31, 2011 1:53 PM
To: Issa, Alfred; Cook, Christopher
Subject: RE: geo-science OpE

Sounds good to me

From: Issa, Alfred *NRO*
Sent: Wednesday, August 31, 2011 11:58 AM
To: Cook, Christopher; Frye, Timothy
Subject: RE: geo-science OpE

Chris/Tim,

Can you please review my responses below to John Thompson's GAO requests and provide comments before I send it out to him? He would like an answer back today if possible.

"John,

The responses to your questions are as follows:

Question 1: How is new reactor geo-science OpE screened?

Answer 1: The same as any other OpE, e.g., the North Anna seismic event was screened yesterday during the clearinghouse meeting.

Question 2: How does NRO stay abreast of geo-tech information that might address Mr. Brown's concern regarding the handling of new data from our professional geo-science staff that attend professional conferences, read the magazines/web sites of the professional societies, have peers who share information with them, and generally have access to a lot of information that we would not/might not get from ENs/LERs?

Answer 2: Based on discussions with Mr. Cook, Branch Chief, the NRO Geosciences and Geotechnical Engineering Branches receive new information and data related to their fields regularly. When they do, they disseminate the information to the rest of their staff during their weekly meeting and if the information is significant, they hold technical caucuses that include research, structural branches and other potentially impacted branches to discuss their ramifications and the need to pursue follow-up actions.

At this point in time, there is no mechanism to transmit the information to ConE but we have plans to issue a new IMC to replace IMC 0970 and we will consider adding new requirements as needed. The requirements, if added, will specify high thresholds for notification such as safety significant information that could have generic implications.

Please note that Chris also plans to work on a response to the general GAO question (not including ConE involvement).

Please let me know if you have any questions. "

Thank you

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From: Thompson, John *JNT*
Sent: Monday, August 29, 2011 9:21 AM
To: Frye, Timothy
Cc: Thorp, John; Thomas, Eric; King, Mark; Issa, Alfred; Sigmon, Rebecca
Subject: geo-science OpE

Tim,

As part of the Government Accountability Office (GAO) audit of NRC oversight of nuclear reactors' resilience to natural disasters and external events, Fred Brown is asking how we would convey to the GAO that we stay abreast of OpE in the geo-science area (see below). My off-the-cuff sense of Fred's question is that geo-science OpE is screened and brought to the OpE clearinghouse, when warranted. My understanding is that NRO has the greatest concentration of Agency experts in this area (I don't think NRR even has a geo-science branch anymore). Since NRR and NRO are moving to better integrate OpE in our screening activities, I was wondering if someone on your staff could send me a couple of sentences covering how new reactor geo-science OpE is screened and how NRO stays abreast of geo-tech information that might address what Fred is concerned about below.

John Thompson

John (Thorp),

I'm sure that you are all over this (how we identify new information on external events).

For my curiosity, how do you plan to convey that we can get new data from our professional geo-science staff that attend professional conferences, read the magazines/web sites of the professional societies, have peers who share information with them, and generally have access to a lot of information that we would not/might not get from ENs/LERs/the licensees via our residents/and your staff's review of nuclear and mass media sources?

Thanks,
Fred