

King, Mark

From: King, Mark *MARK*
Sent: Tuesday, August 30, 2011 9:16 AM
To: Telson, Ross
Cc: Thorp, John; Sigmon, Rebecca; Garmon, David
Subject: RE: IOEB Clearinghouse Screening Summary for Monday, August 29, 2011

RE: Wonder how something with a risk level warranting an AIT doesn't get past a NEWS "0." ...and does it need to be looked at closer in light of the AIT?

Dave Garmon and Rebecca Sigmon both reviewed the INES rating ... it is more based on actual consequence or a significant loss of defense in depth situation with an initiator event and realize that INES uses some special terminology... that you have to understand (i.e. earthquakes are "hazards" not the "initiators" for their rating purposes)... so as Rebecca put it regarding our INES rating level of 0 for this event... and your question does it need to be looked at closer in light of the NRC directing an AIT?

Answer: No. We considered the possibility that the quake was beyond design basis when we issued the rating. INES is a deterministic rating and is not risk-informed {rating system- Mark}.

Ross - Bottom line as reviewed by Dave Garmon who sits across from your office should you have more questions (I suggest you talk with Dave who is the current POC and/or Rebecca Sigmon who did it before):
Dave wrote the following...

The initiator is an identified event that leads to a deviation from the normal operating state and challenges one or more safety functions. For the purposes of the **INES initiators** are separate and distinct from **hazards** (e.g. fires, **earthquakes**, floods etc.).

From page 77 of the manual...

*The occurrence of internal and external hazards such as fires, floods, tsunamis, explosions, hurricanes, tornados or **earthquakes**, may be rated using table 9 [events with real initiators]. The **hazard** itself **should not** be considered as the **initiator** (as the hazard may cause either initiators or degradation of safety systems or both), but the **safety systems that remain operable should be assessed against an initiator that occurred and/or against potential initiators.***

In other words, we would have to see if the safety function of any components were degraded due to a beyond design basis earthquake. We would then use that information to develop a separate rating that considers the newly identified loss of safety function. As it stands now, **North Anna really did not have a any loss of safety function because they had a redundancy in the form of a station blackout diesel. {for the one EDG that had to be shutdown... that may or may not have been earthquake related- Mark}**

Rebecca, the question is what would the effect on the rating be if, hypothetically, a plant experienced a beyond design basis earthquake with a loss of offsite power. -- {note: it's still the same based on the INES manual guidance for rating an event per Rebecca - Mark}

Regards,
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Ross if you want to understand this better ... Take a look at table 1 of the International Nuclear and Radiological Event Scale (INES) User's Manual 2008 Edition, a copy of which is available at <http://nrr10.nrc.gov/ope-info-gateway/ines-2008-e.pdf>

Also look at: page 68 Section 5. ASSESSMENT OF IMPACT ON DEFENCE IN DEPTH SPECIFICALLY FOR EVENTS AT POWER REACTORS WHILE AT POWER

And page 77 Section: 5.1.3. Assessment of the basic rating for events with a real initiator

The initiator event at North Anna is the LOOP, not the hazard which is the earthquake... and they maintained their defense in depth - (because they had the other train EDG, the SBO DG and opposite unit cross-ties for emergency power).

Hope this helps you understand the rating of this event being a zero by INES rating system.

TABLE 9. EVENTS WITH A REAL INITIATOR Safety function operability

	Initiator frequency		
	(1)Expected	(2)Possible	(3)Unlikely
A Full	0	1	2
B Minimum required by operational limits and conditions	1 or 2	2 or 3	2 or 3
C Adequate	2 or 3	2 or 3	2 or 3
D Inadequate	3+	3+	3+