

Draxton, Mark

From: Draxton, Mark
Sent: Friday, October 30, 2015 1:41 PM
To: Dentel, Glenn; Gray, Mel
Cc: Setzer, Thomas; Pinson, Brandon; Wentzel, Michael; IPRenewal NPEmails
Subject: Reply to Dave Lochbaum August 2015 Questions
Attachments: 2015-10-30 Dave Lochbaum Call.pdf

Glenn and Mel,

I called Dave today to follow up with him on his questions. Dave was appreciative of the follow-up. He communicated that between Tom's response and mine, we had answered his questions.

I have attached a record of the phone conversation as well as his email documenting his questions to Tom.

If you should have any questions, please don't hesitate to email or call me.

Thanks.

Mark

Mark Draxton
Region I Division of Reactor Projects - Branch 2



Draxton, Mark

Subject: Outgoing Call to Dave Lochbaum to Follow Up on Questions He raised August 2015
Entry Type: Phone call
Company: Union of Concerned Scientists

Start: Fri 10/30/2015 1:10 PM
End: Fri 10/30/2015 1:20 PM
Duration: 10 minutes

I called Dave [REDACTED] to provide answers to questions No. 1 and No. 3 that he had asked Tom Setzer in August 2015. Tom had previously provided the answer to question No. 2 back in August. The delay for replying to Dave to the other two questions was due to completion of the Entergy technical evaluation in response to condition report CR-IP3-2015-04506.

Dave was appreciative of the follow up. He communicated that between Tom's response and mine, we had answered his questions.

Below is a summary of the discussion:

Question: The first full paragraph on page 7 of the report [Indian Point 2015 SIT] states that "...water began to flood the deluge valve room to a height of 4 to 6 inches, and flowed underneath the door to the switchgear room...". But Table E.4-1 in the 2007 license renewal application submitted to the NRC by Entergy stated for SAMA 219 that "In addition, a water proof door to the deluge valve station room has also been installed ... at IP3." Has a water proof door been installed at IP3? If so, was its design intended to prevent or limit the flow of water underneath it?

Response:

- Good question, thank you for the inquiry.
- Short answer – the door is a “waterproof” door, not a watertight door and is intended to limit spray and delay flow to the switchgear room.
- In response to your question, the NRC engaged Indian Point resident inspectors, regional inspection technical staff, and headquarters’ staff responsible for environmental license renewal reviews.
- NRC resident inspectors questioned Entergy staff who subsequently entered the issue into their corrective action program.
- Entergy staff provided a technical evaluation that the NRC has reviewed.
- The NRC does not have any safety concerns with the configuration.
- The objective of Severe Accident Mitigation Alternatives (SAMA) 219 contained in Attachment E to the Indian Point Units 2 and 3 License Renewal Application (LRA) Environmental Report, which was previously implemented, was to install seismic support for the fire protection deluge system, not to install a water proof door. This additional statement wasn't germane to the SAMA 219.
- The description of the door could have been clearer to its purpose. Given that the door is constructed of solid material (i.e., metal with no openings or grating), it was described as waterproof (as opposed to watertight). In fact, the Entergy PRA does not credit a door at all.
- The door is maintained closed to prevent the potential for spray damage to the 480V switchgear from a break in the fire protection piping in the deluge room.
- The Indian Point Unit 3 PRA model does NOT take credit for a waterproof or watertight door (i.e., a door that would prevent any water intrusion into the Switchgear Room).

- While maintaining the door normally closed technically results in a decrease in core damage frequency, although negligible. (The risk associated with spray damage was originally considered to be negligible due to the intervening wall and physical separation between the deluge room and 480V switchgear)
- For larger pipe ruptures which could result in buildup of water inside the deluge room with the door closed, it was assumed that the door would be forced open by the height of the water. Therefore, while maintaining the door closed could delay the time at which the 480V Switchgear Room could be flooded, the additional time was considered small for large pipe ruptures and not credited in the PRA model.
- Although the description for the door could be considered confusing, it in itself is not in NRC staff's view germane to our conclusion regarding SAMA 219.
- One thing that you should know about environmental reviews, and hence, SAMA reviews, is that the NRC does not make reasonable assurance findings with environmental reviews.
- The SAMA analysis is an environmental mitigation analysis under the National Environmental Policy Act (NEPA), and is not part of the license renewal safety review. Whether additional accident mitigation measures may be warranted to assure public health and safety is addressed through the NRC's ongoing regulatory oversight of existing plants.
- In regard to SAMAs, unless it looks genuinely plausible that inclusion of an additional factor or use of other assumptions and models may change the cost-benefit conclusions for the SAMA candidates evaluated, no requirements to further refine the SAMA analysis.

Question: The second full paragraph on page 8 states that the "inspectors reviewed the preventative maintenance program for the floor drains" in the 480 volt switchgear room. The paragraph goes on to describe a test (using the term very loosely) where workers every two years dumped 10 gallons of water into a floor drain and checked whether it went away within one minute. But Table E.4-1 in the 2007 license renewal application stated for SAMA 215 that "IP3 preventative maintenance program has been revised to have the control building 15 ft. elevation flood drains flushed during each outage. This procedural change greatly increases the likelihood that the drains at this elevation will be available to mitigate flooding in the control building and switchgear room. Therefore, this SAMA has already been implemented at IP3." Are the floor drains in the 480 volt switchgear room at IP3 flushed during each outage? Or does Entergy merely have a procedure for doing so? If the former, why didn't the flushing prevent the drains from becoming 75% clogged? If the latter, hasn't Entergy misled the NRC with its apparent assurance in Table E.4-1?

Response:

- I believe Tom previously discussed this with you but just want to make sure and provide an additional update.
- The drains in the 480 VAC room are flushed at two-year intervals, with the last flush performed on January 15, 2015.
- The associated inspection and test was subsequently determined to be insufficient to detect a partial blockage.
- The flush involved Entergy pouring 10 gallons of water on to the drain and verifying it drained away in less than a minute.
- This approach was not capable of verifying the floor drains were clear of restrictions because the 10 gallons could easily be absorbed in the volume of piping below the floor (and therefore out of sight) without actually draining past the restrictions found during the boroscopic inspection.
- No design-basis requirement for the drains to function.
- Entergy corrective actions included cleaning the drains, verifying they could drain approximately 100 gpm for combined header drain flow, and revising the periodic maintenance activity to require a 25 gpm flush for five minutes for each drain.
- Additional inspection results are documented in the Indian Point 3rd quarter integrated inspection report (IR 2015003) to be issued this month.

Draxton, Mark

From: Dave Lochbaum [REDACTED]
Sent: Friday, August 07, 2015 9:50 AM
To: Setzer, Thomas
Subject: [External_Sender] RE: Indian Point SIT

Hello Tom:

Thanks for following up.

[REDACTED] is my office number. But [REDACTED] is more reliable and usually provides a clearer signal.

The questions I emailed Diane are:

- 1) The first full paragraph on page 7 of the report states that "...water began to flood the deluge valve room to a height of 4 to 6 inches, and flowed underneath the door to the switchgear room...". But Table E.4-1 in the 2007 license renewal application submitted to the NRC by Entergy stated for SAMA 219 that "In addition, a water proof door to the deluge valve station room has also been installed ... at IP3." Has a water proof door been installed at IP3? If so, was it's design intended to prevent or limit the flow of water underneath it?
- 2) Table 4.3.1.2 from the June 1994 Individual Plant Examination submitted by NYPA to NRC reported that the rupture of the 10-inch diameter fire protection line to the deluge valves inside the switchgear room could release up to 7,500 gallons per minute into the room. As mentioned above, there's a door between this area and the rest of the switchgear room. There's no water depth monitor or alarm inside the deluge station area. I've not found info on whether the door opens inward from the switchgear room or outward from the deluge station area into the switchgear room. A worker opening the door - unaware of the depth of water on its other side - from the switchgear room or water pressure causing the door to give way could unleash a torrent of water into the switchgear room, producing even a mini-tsunami wave at the leading edge. Did the NRC consider such a rapid flooding scenario in determining its 1 in 10 million year estimate on page 12?
- 3) The second full paragraph on page 8 states that the "inspectors reviewed the preventative maintenance program for the floor drains" in the 480 volt switchgear room. The paragraph goes on to describe a test (using the term very loosely) where workers every two years dumped 10 gallons of water into a floor drain and checked whether it went away within one minute. But Table E.4-1 in the 2007 license renewal application stated for SAMA 215 that "IP3 preventative maintenance program has been revised to have the control building 15 ft elevation flood drains flushed during each outage. This procedural change greatly increases the likelihood that the drains at this elevation will be available to mitigate flooding in the control building and switchgear room. Therefore, this SAMA has already been implemented at IP3." Are the floor drains in the 480 volt switchgear room at IP3 flushed during each outage? Or does Entergy merely have a procedure for doing so? If the former, why didn't the flushing prevent the drains from becoming 75% clogged? If the latter, hasn't Entergy misled the NRC with its apparent assurance in Table E.4-1?

My schedule today and next week is open from 9am to 5pm.

Thanks again,
Dave Lochbaum
UCS

From: Setzer, Thomas [REDACTED]
Sent: Thursday, August 06, 2015 4:31 PM
To: Dave Lochbaum
Subject: Indian Point SIT

Hello Dave –

I was the Team Leader for the Indian Point Special Inspection which investigated water intrusion into the switchgear room at Unit 3. Diane Screnci contacted me and told me you had questions about the report. Is there a number I can call you at? I was given [REDACTED] but I'm not sure if that is a good number for you.

I am in Chattanooga at our training facility for the next couple weeks and could call you after class. Please email me a phone number that is best to reach you at.

Thanks,
Tom Setzer