LIMERICK NUCLEAR PLANT

QUESTIONS ABOUT NRC's ASSESSMENT OF LIMERICK'S 2015 PERFORMANCE

ACE IS REQUESTING WRITTEN RESPONSES TO THE QUESTIONS BELOW PRIOR TO NRC'S 5-23-16 MEETING IN LIMERICK

PLEASE SEND RESPONSES TO:

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Introduction

- In 2015, NRC documented several Limerick accidents that had significant potential to lead to core damage as "green" and "of very low safety significance."
- The public risk that is part of Limerick operations and accidents leads to questions about NRC's public announcement that in 2015:
  1) "Overall, LGS operated in a manner that preserved public health and safety"
  2) Limerick "is moving along on vent installation and other post-Fukushima work we required." (Mercury, 3-8-16)

A FEW OF LIMERICK'S SAFETY VIOLATIONS IN 2015

FIRE: 4-5-15

Fire broke out close to the motor-controlled pump that operates one of Limerick's water systems to prevent core damage.

- NRC said the fire would not have occurred if Exelon had done adequate preventive maintenance
- NRC said the accident had the potential to lead to core damage.
- However, NRC only cited Exelon with a "green Non-Cited Violation (NCV) of very low safety significance" in the safety inspection report
- In public statements released on April 6, 2015, NRC and Exelon gave different accounts of the fire:
  - NRC: the fire was in one of the security buildings
  - Exelon: the fire was in an electrical panel in the reactor building
  - NRC: the Unit 2 reactor was at 82% power, shutting down (for refueling)
  - Exelon: both units were at full power
  - NRC: the High Pressure Coolant Injection (HPCI) system that delivers water to the core was damaged and needed repair
  - Exelon: Limerick's on-site fire brigade put out the fire within eight minutes
- **QUESTIONS:**
  1. How does NRC justify that an accident with the potential to lead to core damage is "green and of very low safety significance"?
  2. Did NRC examine its own actions to see if they contributed to this fire?
  On 12-29-14, NRC changed a Unit 2 regulation because Unit 2 couldn't comply with it. When it became apparent that, despite the change, Unit 2 still couldn't comply, NRC proposed a send revision. NRC announced its proposal, not in the Federal Register as customary, but in the Mercury Classifieds, 2-16-15, because this was an emergency and if NRC didn't act quickly, it would have to shut Unit 2 down.
  3. Does NRC see any correlation between its lax regulatory enforcement and Exelon's pervasive lack of maintenance?

OCCUPATIONAL RADIATION EXPOSURE: 6-28-15

A tank of radioactive water overflowed exposing personnel and the Unit 2 reactor building to a high level of radiation, requiring decontamination of building and personnel

- During Radioactive Waste Clean Up, an alarm signaled that the level of radioactive water in a tank was high
- The alarm was ignored and the tank overflowed
- The overflow backed up the floor drain system and radiation levels rose.
- The Unit 2 reactor building required decontamination
- Personnel required decontamination, but one of them tracked radiation around multiple levels of the facility where other people were not required to have radiation-protective clothing.
- NRC cited Exelon with a "Green, Non Cited Violation (NCV) because this was a violation of very low safety significance" which seems excessively lenient, given the magnitude of the risk
- **QUESTIONS:**
  1. How long did it take before the two personnel were decontaminated, if one, whose "shoe contamination was 65mrad/hr," had time to walk around multiple floors of the facility?
  2. As a result of decontaminating Unit 2, was any radiation released into the Schuylkill River or into the air?
  3. Why did Exelon not initially remedy the potential for overflow, as it did after the accident, instead of instructing personnel to ignore the alarm?

OCCUPATIONAL RADIATION EXPOSURE: 7-7-15 and 7-8-15

Radiation rose as water covering fuel assemblies accidentally drained out of a dry storage cask

- On July 7th workers began decontamination and preparation of one of the casks loaded with spent fuel to prepare it for on-site storage.
- Workers followed instructions to pump 25 gallons of water out of the cask and then stop the pump.
- Because there was no instruction to close the drain valve after stopping the pump, radioactive water continued to drain out of the cask
- For 90 minutes, no one noticed the water accumulating on the floor.
- At about 12:00 a.m. on July 8th, a technician noticed Unit 2's radiation level rising
- The technician alerted the floor supervisor, who discovered the radioactive water on the floor.
- 231 more gallons of radioactive water had drained out of the cask, exposing the upper parts of the spent fuel assemblies to the air
- NRC issued a Non-Cited Violation (NCV), stating that Exelon had not followed NRC's code of Federal Regulations: Exelon did not provide complete procedural instructions
- **QUESTIONS:**
  1. What alerted the RP technician to the rise in the level of radiation?
  2. Why didn't any one notice the 231 gallons of water accumulating on the floor for 90 minutes?
  3. During the unclogging of the drain and decontamination of the building and personnel, was any radiation released into the Schuylkill River or into the air?

UNIT 1 AND UNIT 2 COOLING TOWER LIGHTS: OUT DURING 2015

Exelon, an electric company, should have had no difficulty immediately restoring all the flashing lights on both Limerick's cooling towers in 2015, yet Exelon failed to do so.

- Limerick's cooling towers are 507 feet high, and FAA considers anything over 200 feet high a height safety hazard without continuously flashing, high-intensity lights, day and night.
- The only reason Limerick's cooling tower height was waived as a safety hazard during Limerick construction was the promise that they would have the continuous flashing lights
- At no time during 2015, were all the cooling tower lights operating at the same time.
- Limerick is required to have its lights on because it is only about a mile from a public access airport, yet there have been times when there were no lights on at all for as long as 6 months at a time.
- Lights were out on both towers for at least 24 days around the 2015 Thanksgiving holiday, a time of increased air traffic flow in and out of the airport.
- On 12-10-15, Exelon announced the "flashing beacon" on top of Unit 2 had been restored to service and that repairs had been completed on 12-2-15 (Mercury)
  - Exelon stated that the problem on Unit 1 was on the top of the tower and repairs were scheduled for Spring refueling
- **QUESTIONS**

1. With the completion of spring refueling, why has Exelon only been able to restore three meager lights on a portion of Unit 1?
2. Why have the lights been out on Unit 2, after Exelon's announcement on 12-10-15 that the lights had been restored?
3. How can it be that Exelon, an electric company, can't even fix its own lights?

LIMERICK HAD FAILED TO MAKE ANY POST-FUKUSHIMA UPGRADES AS OF 2015.

It is beyond negligent for NRC to report, as it did, that Limerick "is moving along on vent installation and other post-Fukushima work we required." (Mercury, 3-8-16)

- By 2015, Exelon had made a mockery of NRC's 2012 Post-Fukushima's safety recommendations by not physically fulfilling any of them.
- Despite NRC's 2012 request for compliance without delay, Exelon's 2015 report for Limerick showed that "plans" weren't even complete by 2015, and some issues will only be in the planning stage by 2019.
- Examples of dangerous delays and eliminations of NRC's 2012 post-Fukushima recommendations as of 2015:
  - Vent installation delay - no workable plan for installation as of 2015
  - Elimination of filters from the vent delayed installations despite NRC staff stating, "Vents without filters become radioactive hoses into the sky. Vents are vital, regardless of the cost to the industry."
  - No installed spent fuel pool instrumentation as of 2015, despite the risk of pool meltdowns
  - No Limerick-specific seismic update as of 2015.
  - Unreasonable delay in seismic "study" until 2019, despite earthquake fault fractures under Limerick's reactors, fuel pools, control room, turbine building, and rad-waste building.
- By 2015, the public had, for three decades, been repeatedly exposed to Limerick's routine and accidental radiation releases and cooling tower pollution. Exelon failed to:
  - Filter discharges into the Schuylkill River, a vital drinking water source for millions of people
  - Notify the public promptly of increased radiation exposure due to accidents, such as the 15,000 gallons radioactive water into the Schuylkill River on 3-19-12 that was not announced to the public for 23 days
  - Stop using high-burn fuel (up to 30% more radioactive gas releases)
  - Filter Limerick's massive, toxic cooling tower pollution into the air
  - Clean up water and soil from Limerick's radioactive spills
- **QUESTIONS**

  1. Why, after NRC's 2012 post-Fukushima recommendations, has NRC not required a Limerick-specific seismic study to more protectively prepare Limerick for post-Fukushima safety-related upgrades that could protect the public from Limerick's increased seismic risks?
  2. Why did NRC allow Exelon to eliminate filters, when without filters, the public is at increased risk for radiation exposure?
  3. Why did NRC allow the use of high-burn fuel in 2015 at Limerick when increased radiation risks will increase harms to Limerick's dense population in the Greater Philadelphia region and increases Limerick's risks associated with Limerick's on-site-storage of log-lasting, high-level, radioactive waste?

WE LOOK FORWARD TO YOUR TIMELY ANSWERS TO THESE QUESTIONS

Thank you,
Betty and Charlie Shanks
ACE members