From: R1WORKFLOW Resource
Subject: FW: Information Provided at Limerick AAM
Attachments: SR1-3118K5016052414140.pdf

From: Schroeder, Daniel
Sent: Wednesday, May 25, 2016 6:39 AM
To: 'aceactivists@comcast.net' <aceactivists@comcast.net>
Subject: Information Provided at Limerick AAM

Betty and Charles,

Thank you for attending the NRC Open House and Annual Assessment Meeting for Limerick on May 23, 2016. It was good to meet you and listen to your concerns regarding the Limerick Generating Station in person. I have attached the materials that you provided the NRC during the meeting. I am looking forward to meeting the Cuthbert's at next year's Annual Assessment Meeting. I hope that you have had a chance to read the response that I provided regarding your May 3rd letter.

The Limerick resident inspectors, Scott Rutenkroger and Matt Fannon, as well as the Limerick Project Manager Rick Ennis and Senior Health Physicist Ron Nimitz also enjoyed listening to your concerns and answering your questions.

Regards,

Daniel Schroeder
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LIMERICK NUCLEAR PLANT

LIST OF SHOCKING EVIDENCE DOCUMENTING A PATTERN OF NEGLIGENCE BY NRC AND EXELON AT LIMERICK NUCLEAR PLANT

ACCIDENTS, AMENDMENTS, PUBLIC PETITIONS, AND NRC ACTIONS SHOWING LIMERICK'S PUBLIC HEALTH AND SAFETY RISKS

June 2010

- **NRC issued its "Waste Confidence Decision and Temporary Storage Rule"**
  - NRC never waited for or required proven failsafe spent fuel storage before licensing Limerick or to relicense the age-degraded nuclear plant

9-3-10

- **GE Hitachi notified NRC that Limerick's Mark II Boiling Water Reactors (BWRs) might not shutdown under certain circumstances**

12-23-10

- **NRC and Exelon's lobbying arm, the Nuclear Energy Institute (NEI), issued an industry-friendly plan for reviewing License Renewal Applications**

1-1-11 to 12-31-11

- **NRC cited Exelon for "Impeding the Regulatory Process"**
  - Annual Assessment Letter for Limerick Generating Station, 3-5-12

2-25-11

- **Unit 2 recirculation pumps tripped off-line**

4-2-11

- **A tripped switch caused the Unit 2 Primary Isolation Valve to close during refueling**

5-11-11

- **Fukushima's disaster and meltdowns began, raising global human radiation dosage levels from 360 millirems/yr to 620 millirems/yr, according to the NRC**

5-23-11

- **NRC cited Limerick with a "white" violation (noncompliance of a legally binding requirement) for the breakdown of one of its water delivery systems**

5-29-11

- **Unit 2 reactor tripped off-line due to turbine control trouble**

5-30-11

- **Unit 2 was manually tripped off-line during start up activities.**

6-3-11

- **Unit 1 tripped off line from 100% power**

6-22-11

- **Exelon submitted Limerick's License Renewal Application to NRC, without being required to update Limerick's Severe Accident Mitigation Alternatives (SAMA)**

8-15-11

- **Exelon had made changes to Limerick's emergency actions without NRC approval which reduced safety**

8-23-11

- **An earthquake originating in Virginia, struck Limerick Nuclear Power Plant and operators felt vibrations in Limerick's control room,**
  - Seismic monitors, inoperable for over a year, could not confirm the earthquake

9-14-11

- **"Enformable Nuclear News" reported that designers, operators, and regulators of nuclear power plants only plan for statistically probable events - thus not preparing for events that, though not probable, could raise risks if an accident does not play out as modeled**

September 2011 to August 2012

- **NRC cited Exelon with violations associated with impeding the regulatory process at Limerick** (NRC Integrated Inspection Report, Cover letter 2-5-13)

9-19-11

- **The AP mirrored a report done in March by MSNBC that ranked Limerick as the plant with the 3rd highest risk of being damaged by an earthquake (MSNBC used NRC data)**

9-21-11

- **An 11,000 page records-request showed that NRC experts worried privately that nuclear plants needed stronger safeguards in response to their higher post-Fukushima earthquake risk assessments,**
  - This finding by the Associated Press (AP) is important at Limerick due to its higher risks that were not accounted for in a GI-199 assessment for Limerick based only on generic modeling, not Limerick-specific information

9-22-11

- **NRC held a public hearing about Limerick's Environmental Impact Statement (EIS) in response to Exelon's submission of Limerick's License Renewal Application.**
  - The stated premise was to provide public input, but public input was completely dismissed when NRC issued its Final EIS, August, 2014

9-26-11

- **GE Hitachi repeated its 9-3-10 warning that Limerick's Inherently defective GE Mark II Boiling Water Reactors (BWRs) may fail to to safely shutdown under certain circumstances,**

10- 3-11 to 10-14-11

- **NRC conducted its "Generic Aging Lessons Learned (GALL) Audit" designed by Exelon's lobbying arm, the Nuclear Energy Institute (NEI) to fast-track license renewal.**

11-4-11 (The date listed on" NRC Findings for CY 2011 at Limerick generating Station")

- **Failure to verify power availability necessary for station blackout recovery**

11-7-11 to 11-10-11

- **NRC conducted a required site audit in response to Exelon's 6-22-11 License Renewal Application**

11-22-11

- **The Natural Resources Defense Council (NRDC) filed a petition requesting that Limerick nuclear plant risks be re-evaluated, due to Limerick's outdated 1989 Severe Accident Mitigation Alternatives (SAMA)**

12-19-11

- **NRC approved Exelon's amendment request to substitute more frequent monitoring and other indications of reactor coolant system leakage for an inoperable monitoring system that was used along with:**
  - **1) The Containment Atmosphere Gaseous Monitoring System**
  - **2) The Primary Containment Pressure and Temperature Monitoring System**
  - On 9-6-13, NRC issued a violation for inoperability of Limerick's radioactive gas clean-up system, that was traced back to 10-26-10, which raised the public's offsite radioactive gaseous effluent exposure for that period

12-23-11

- **In secret, NRC pared down evacuation plans and emergency drills near nuclear plants**

12-31-11 (The date listed on" NRC Findings for CY 2011 at Limerick generating Station")

- **A relay in service 6 years beyond its vendor-recommended replacement date failed**

1-30-12

- **NRC granted Exelon's Limerick License Amendment to modify the Unit 1 safety limit minimum**

2-15-12

- **The Nuclear Information and Resource Service (NIRS), supported by 37 co-petitioners, submitted a petition request to NRC to expand emergency planning zones**
  - On 4-9-14, NRC denied the expansion

2-7-12

- **An Instrument and Controls (I & C) technician accidentally entered a room with high radiation, posted as requiring a neutron radiation monitor, without one**

2-28-12

- **NRC revised its regulations for license renewal applications that helped fast-track the process without protections that the public felt were necessary**
  - The changes were initiated by Exelon's lobbying arm, the Nuclear Energy Institute(NEI)

February 2012

- **In response to NRDC's petition, NRC held a hearing**

3-12-12

- **NRC ordered the installation of reactor vents "without delay" when it knew that vents without filters cause extreme public radiation dosage due to vent-expelled radiation**
  - NRC later granted Exelon's request to delay vent installation until 2018 (Unit 1)and 2019 (Unit 2)

3-13-12

- **NRC issued its order to modify licenses with regard to requirements for Mitigation Strategies for Beyond-Design-Basis external events**

3-14-12

- **NRC granted Exelon an amendment that changed the method of calculating core reactivity from "predicted versus monitored control rod density"**
  - NRC stated it had *reasonable assurance* that public health and public safety would not be endangered

3-19-12

- **15,000 gallons of radioactive water spilled into the Schuylkill River, but neither Exelon nor NRC alerted water companies or the public to take protective action and the public never knew it occurred until the local newspaper 23 days later, on 4-13- 12**

4- 4-12

- **The spill had not yet been made public, when eleven days later, a high level of Iodine 131 was found in the Philadelphia Water Department's water.**
  - Iodine 131 is a signature fission byproduct of Limerick nuclear plant
  - Exelon denied it was from Limerick

4- 4-12

- **The Atomic Safety and Licensing Board (ASLB) allowed the NRDC's SAMA challenge to move forward**

4-13-12

- **Limerick's 15,000 gallon radioactive water spill into the Schuylkill River was announced in the Mercury**
  - People had been denied the option to switch to bottled water, especially for infants, the sick, or the elderly for over three weeks, and elevated levels of iodine had been discovered in Philadelphia's water supply eleven days after the spill

5-2-12

- **A false alarm indicated a trip of the reactor enclosure ventilation system, the cause of which could not be determined**

5-25-12

- **Then-chairman of the NRC publicly revealed that NRC uses a computer model called 'pencil whipping' so any nuclear plant, no matter how degraded, looks "good to go" for continued operations.**

June, 2012

- **The U.S. Court of appeals for the D.C. Circuit vacated (erased) the NRC's 2010 Waste Confidence Decision and Temporary Storage Rule, ordering NRC to issue no license renewals pending resolution of waste storage issues**

6-25-12

- **For six months , Exelon failed to recognize the condition that led to a valve failure**
  - During a test, a water flow valve failed to open following a loss of water signal and failed again when the test was repeated
  - The condition had existed, but not been recognized since 11-30-11

6-30-12

- **Eight years past their vendor-recommended lifetime, degraded relays caused an unplanned shutdown that could have led to core damage.**

7-11-12

- **Operator failure to follow an alarm within 15 minutes delayed power reduction for an hour and 49 minutes, resulting in an unplanned shutdown**
  - Circumferential fatigue cracks were observed around the weld toe
  - Limerick's Unit 1 reactor has a crack in a weld joining an inlet riser to two jet pumps and the transition piece

7-18-12

- **Three years of inadequate preventive maintenance resulted in a transformer explosion in the plant's control structure, adjacent to the control room, necessitating a manual scram due to loss of power to main generator cooling water pumps, the 4th scram since 2010**

7-27-12

- **Unplanned shutdown & outage due to leaking safety/relief valve & hydrogen leak**

10-9-12

- **Exelon was cited for its 9-month failure to respond to a Unit 1 reactor alarm for 'depressurization and IA dryer filter'**

10-20-12

- **NRC granted Exelon's request to eliminate the test to demonstrate age-degraded equipment operability from Limerick's License renewal Application**
  - NRC allowed Exelon to eliminate Commitment No. 46, which was the requirement for the test

10-23-12

- **NRC joined Exelon in Exelon's appeal to stop NRDC's Petition to require Exelon to include an updated SAMA as a part of Limerick's License Renewal Application,**
  - The 5-member Commission agreed, contending that NRDC had launched an "impermissible collateral attack on our regulations"

12-18-12

- **Failure to adequately evaluate the voltage to safety equipment, which could have resulted in loss of coolant or fire. Failure in real time could result in core damage.**

12-31-12

- **A 3-month NRC Inspection of Units 1 and 2 that began on 10-1-12 listed the following summary of Limerick deficiencies:**
  - Failure to administer an NRC Annual Operating Test Simulator Scenario Re-examination that met procedural requirements
  - Failure to revise EDG Tank Cleaning Work Instructions
  - Failure to follow Radiation Protection Procedures for personal protection
  - Inoperable Primary Containment Isolation Valves
  - Redundant Reactivity Control System setpoint drift
  - Inoperable Isolation Instrumentation
  - Three Main Steam Isolation Valves failed the Surveillance Test
  - Exelon made changes to the Emergency Plan without NRC approval

2000 to the end of 2012

- **Limerick reported 114 violations from 2000 to the end of 2012**
  - Charlotte Observer, I0-16-13, Business National News, 10-15-13
  - NRC's inconsistent enforcement shows extraordinary differences among U.S. regions.
  - Our concern is that, based on the NRC and Exelon e-mailed report we received from NRC when we questioned NRC about the quake that hit Limerick on 8-23-11, it appears that the significance of violations may be substantially underplayed in Exelon's records

- Based on NRC Safety Inspection Reports, it appears that NRC's process of rating violations is significantly impaired by NRC's pre-determined objective to keep Limerick operational by lessoning the appearance of violations that could significantly impact plant stability

1-15-13

- **Exelon did not verify that adequate voltages would be available to safety-related equipment during a design basis loss-of-coolant accident**
  - Exelon's License Renewal Application for Limerick contained many similar deficiencies as well as flawed assumptions

1- 30-13

- **NRC granted Exelon's request to withhold from public disclosure: "Standard Practice Procedure Plans and Updated Foreign Ownership Control or Influence Package"** (Executed by Global Nuclear Fuel-Americas, LLC (GNF-A)

2-5-13

- **NRC closed the issue of Limerick's degraded Motor Operated Valve (MOV) System that broke down on 5-23-11 while experimentation to keep it operational continued**

2-6-13

- **The Atomic Safety and Licensing Board (ASLB) referred NRDC's petition requesting an updated SAMA for Limerick to the 5-member NRC Commission for final determination**

2-27-13

- **NRC's Commitments Audit revealed a pattern of inexplicable negligence in the area of Exelon's Preventive Maintenance, especially in regard to the inoperability of Limerick's seismic monitoring system**

3-19-13

- **NRC issued Amendments No. 209 (Unit 1) and 170 (Unit 2) re: Relocation of Technical Specifications for Motor-Operated Valve Thermal Overload Protections**
  - This change charts new territory for unknown risks

3-21-13

- **Beyond Nuclear's Reactor Oversight Project Director and 22 public advocacy groups joined together to request that NRC revoke the operating licenses for all nuclear plants operating with the defective GE Mark I and Mark II Boiling Water Reactors (BWRs) in the U.S.**
  - Limerick has two defective Mark II BWRs
  - NRC refuses to test the reactors using the surveillance capsules that the 2013 NRC chief said were in Limerick's reactors.

3-31-13

- **Two RP technicians were accidentally locked temporarily in a Unit 2 area known to have high radiation risk**
  - The workers were freed without mishap, but it is worth noting that this level of risk exists

3-31-13

- **Aside from poor maintenance there was no explanation for the unexpectedly low condition of Unit 1 battery chargers**

4-3-13

- **NRC granted Exelon's request to change the Core Operating Limits Report for Limerick Generating Station Unit 1,** Reload component removal 14, Cycle 15, Revision 10

4-3-13

- **NRC issued a "Withdrawal Notice" for "Reporting Procedure for Mathematical Models Selected to Predict Heated Effluent Dispersion in Natural Water Bodies."** (Regulatory Guide (RG) 4.4)

4-7-13

- **An engineering recommendation that had been made on 10-26-10, but overlooked, was made again, to test the Unit 2 Primary Containment Instrument Gas (PCIG) check valve, because there was a problem.**
  - This recommendation continued to be overlooked until 9-6-13 when it was discovered that off-site radiation doses were raised due to the failure of the valve

4-8-13

- **A Former NRC Chairman said, in light of what he learned from Fukushima, the public has no protections and no U.S. nuclear plants are safe**
  - Predictably, the president and chief executive of Exelon's lobbying arm, the Nuclear Energy Institute (NEI) asserted that "U.S. nuclear Energy facilities are operating safely. That was the case prior to the Chairman's tenure, the case during his tenure, and it is still the case today."

4-16-13

- **A reactor automatically shutdown due to improper procedures and lack of ordinary foresight**

4-19-13

- **It was reported in an interview, that the average nuclear plant has 6 guys on Ebay trying to buy old parts.**
  - The reason is that if they put a new part in, and it isn't like the original, they have to go to the NRC and ask permission. Old parts are in their warehouse so when a part breaks down, they can replace it "in kind" instead of getting something newer or better.
  - Could it be possible that the 16 years of refurbished equipment malfunctions mentioned for date 8-21-13 resulted from this practice?

5-7-13

- **NRC approved nuclear industry-friendly alternatives and weakened Post-Fukushima Near Term Task Force Recommendations instead of enforcing them,**
  - It is of little benefit to the public to have pro-nuclear industry groups driving the NRC policies which expedited Limerick license renewal
  - NRC is refusing to regulate Limerick on behalf of protecting people and the environment, in favor of an industry that has shown that it is not interested in public health and safety

5-12-13

- **6-month failure of Emergency Diesel Generator (EDG)**

5-21-13

- **Ventilation System Trip due to the degraded performance of the Primary Containment Isolation System's reactor enclosure equipment compartment exhaust flow transmitter**

5-24-13

- **Safe-shutdown switches for Units 1 & 2 sustained fire damage due to poor preventive maintenance**
  - The fire brigade and fire equipment delivery to the spray pond pump house was delayed

6-10-13

- **NRC granted Exelon's amendment change for Core Operating Limits Report For Limerick Generating Station Unit 2,** Reload 12

6-12-13

- **NRC released a deceptive newspaper public statement: "NRC Wants Upgraded Vent System" as if vents without filters offer the public protection.**
  - This was a degraded version of NRC's 1980 post-TMI recommendation to install filtered vents at Limerick, which NRC never enforced
  - This repeat of NRC's 3-12-12 recommendation, reveals that NRC is more concerned with appearing to protect people than in actually protecting them

6-20-13

- **NRC cited "Improper procedures, performance deficiency, and poor decision making" as causes for turbine and control valve stoppage causing Unit 2's unplanned automatic reactor shutdown**

6-30-13

- **Depressurization in Unit 1 due to a service air compressor trip caused by reintroducing a previously failed circuit board**

7-3-13

- **Failure of the transformer automatic voltage changer**

7-7-13

- **9 months of human error led to repeat inadvertent depressurization of Unit 1 reactor**

7-8-13

- **NRC's Petition Review Board (PRB) recommended dismissal of a public request by Beyond Nuclear and 22 other public advocacy groups to close all nuclear plants operating with defective GE Mark I & II BWRs**
  - The dismissal was made without answering questions and addressing charges
  - Petitioners did not give up, as shown on 9-30-13

7-17-13

- **Limerick Units 1 & 2 exhibited four or more of the 11 risk factors that qualified it for early closure in a report by Mark Cooper, senior fellow for economic analysis, Institute for Energy and the Environment in his report, "Renaissance in reverse: Competition Pushes Aging U.S. Nuclear Reactors to the Brink of Economic Abandonment" He noted:**
  - The death of Limerick's large planned power uprate project
  - Risk factors based on ratings by Moody's, UBS, and Credit Suisse
  - Although this is not a prediction, keeping aging nuclear plants on-line if they need repairs or retrofits does not make economic sense and Limerick is undergoing major repairs and experiments, especially on its core water delivery system that no longer operates as a motor-driven system.

8-1-13

- **NRC announced its password-protected portal**
  - For, it says, licensee contractors' submittals that support post-Fukushima Near Term Task Force recommendations

8-4-13

- **The Attorneys General of New York joined in an effort to stop NRC from erasing all record of a judicial ruling that the public has a right to intervene before major amendments are granted to a nuclear plant's operating license**

8-7-13

- **Incorrect amount of chemical added to Emergency Diesel Generator jacket water**

8-14-13

- **A defective Redundant Reactivity Control System (RRCS) Analog Trip Module (ATM) board rendered the Unit 1 RRCS inoperable**

8-15-13

- **The defective ATM board was replaced with a refurbished board and returned to service, however within 24 hours, the channel reading was drifting again**

8-16-13

- **The ATM malfunction did not actuate the Unit 1 Residual Heat Removal (RHR) heat exchanger bypass valve control, requiring further troubleshooting**

8-21-13

- **16 years of refurbished equipment malfunctions took seven days, from 8-14-13 to 8-21-13, to recognize**

8-23-13

- **NRC notified Exelon that there was deficiency in the Motor Operated Valve (MOV) system in nuclear plants like Limerick which was identified in 1985**
  - Known as "hammering" the defect had already damaged Limerick's MOV system, which is undergoing a series of new experiments

9-6-13

- **The unnoticed inoperability of Limerick's radioactive gas clean-up system for almost 3-years, was finally noticed**
  - Beginning on 10-26-10, inoperability raised the public's offsite radioactive gaseous effluent exposure
  - Two years before the Atomic Energy Commission (AEC) issued Limerick's construction permit, which was 12 years before NRC issued the license for Unit 1, the AEC stated that Limerick's "estimated doses from gaseous effluents are much higher than those considered acceptable by the staff. With the estimated outage of the gas

clean-up system, the air immersion dose to an individual at the site boundary will be about 480 millirems/year" (AEC's 1972 Limerick Environmental Impact Statement, EIS).
    - Note: radiation does not stop at Limerick's boundary.
    - Limerick's radioactive gas release report from 2011 had an uncertainty rate of 15.7% - 36.6%.
    - The AEC's estimate of 480 millirems /yr for Limerick radiation, with outage of its gas clean-up system, may or may not be accurate.
    - According to NRC's estimate, Chernobyl raised global background doses of human radiation exposure from 100 to 360 millirems/yr., Fukushima's meltdowns which started on 3-11-11, raised the dosage to 620 millirems/ year, and at Limerick, on top of that, we have high off-site gassing
  - Exelon deceptively states that all sources of radiation are the same, however, nuclear plants produce radionuclides unknown in nature, which may have unknown additive, cumulative, and synergistic effects

9-30-13

- **Reintroducing a refurbished circuit board caused a service air compressor trip depressurizing Unit 1**

9-30-13

- **Beyond Nuclear and 22 other public advocacy groups filed a petition before the NRC's Petition Review Board (PRB) as part of Beyond Nuclear's "Freeze Our Fukushimas" campaign.**
  - The petition charged that NRC's post-Fukushima actions ignore the dangerous vulnerabilities of U.S. nuclear plants currently operating with GE's inherently defective Mark I and II Boiling Water Reactors (BWRs)
  - Beyond Nuclear suggested that while Japan contemplated how to freeze a wall 90 feet into the earth to contain Fukushima's radioactivity, NRC's focus should be on permanently freezing the operation of all GE Mark I and II BWRs nuclear plant operations.
  - On 2-26-14, Beyond Nuclear initiated a massive public advocacy group effort to request requiring the installation of severe-accident-capable containment vent systems in conjunction with external, engineered, radiation filter installation at nuclear plants (including Limerick)

10-1-13

- **NRC defined the primary responsibility for nuclear plant safety and security as resting with the licensee, in Limerick's case Exelon, and NRC minimized its own role by stating that NRC simply has oversight**
- This announcement compounds lax public protections:
  - NRC defines its Reactor Oversight Program (ROP) as 'documenting' risks with enforcement essentially an 'interpretation' of regulations.
  - The clarification was made in an NRC address to interested nuclear industry stakeholders anticipating NRC's cessation of functions if there was a government shutdown
  - The NRC / Exelon relationship is a huge problem, because 90% of NRC's nearly $1 billion budget is paid by the nuclear industry it supposedly regulates and there seems to be no mechanism for enforcement
  - As was shown at Fukushima, industry self-reporting is unreliable due to self-interest

10-16-13

- **A congressional study pointed to inconsistencies in NRC's enforcement of violations at power plants throughout the U.S.**

10-17-13

- **It was reported that reactor water monitoring systems do not work correctly and it is very difficult to operate a nuclear power plant with any degree of certainty.**
  - When one of the reactors has an emergency shutdown, operators simply do not know if the reactor has enough water to keep it cool (Fairewinds Energy Education podcast discussion between a nuclear researcher and an experienced nuclear engineer)

10-28-13

- **The Office of the Inspector General (OIG) announced that NRC was inadequately enforcing regulatory requirements of active component aging and NRC's management was not focused or coordinated**
  - Active components are valves, motors, fans, electrical relays, etc., whereas passive components include pipes, supports, and tanks

10-31-13

- **NRC held a short "affirmation hearing" that all five members of the federal NRC commission attended, and where they all affirmed their agreement to refuse NRDC's petition for an updated Limerick SAMA**
  - In 1996, NRC amended its regulations to require SAMA analysis for all new nuclear plants, specifically exempting Limerick from needing another for re-licensing
  - NRC argues that Limerick's SAMA that was done in 1989 doesn't have to be updated
  - However, Limerick's SAMA was court-ordered, not voluntarily produced
    - In 1981, before Limerick construction was complete, Limerick Ecology Action (LEA, predecessor of ACE) sued NRC for, among other things, not considering alternatives for Limerick
    - NRC did not halt construction when LEA filed the suit in court
    - NRC continued construction and dragged out the court case until NRC had licensed Unit 1(1984) and Unit 2 (1989)
    - NRC was ordered to produce a SAMA as part of the court's judgment against NRC to increase public protection
  - NRC completed Limerick's court-ordered SAMA in 1989
  - Produced under court order as an after thought to licensing Limerick, NRC's Limerick SAMA may not have been produced as thoughtfully and protectively as it might have been, and so might need updating, given the new understandings we have gained about the risks associated with Limerick operations since Fukushima.

November 2013

- **Although, immediately after Fukushima's nuclear disaster, NRC explained that filtered vents offer the public better protection than vents alone as a post-Fukushima upgrade, in November 2013, NRC caved in to industry pressure and eliminated filters, due to industry costs**
  - Then, NRC directed utilities to follow the guidance of Exelon's lobbying arm, the Nuclear Energy Institute (NEI) and install vents only, classifying that as "compliance"
  - NEI is the very powerful lobbying Arm of the nuclear Industry (not a government-appointed regulatory agency)
  - On 3-12-12, NRC had ordered the installation of reactor vents "without delay"
  - On 6-12-13, NRC released a deceptive newspaper public statement: "NRC Wants Upgraded Vent System" as if vents without filters was a good thing and as if upgrades were being installed in a timely fashion.
  - On 2-26-14, Beyond Nuclear initiated a massive public advocacy group effort to request radiation filters on vent installations at nuclear plants (including Limerick)

11-13-13

- **6-month emergency diesel generator leak due to critical component failure of a pipe fitting that leaked for from Nov. 2012-May, 2013, was discovered**

2-26-14

- **Beyond Nuclear initiated a massive public advocacy group effort to request that the Office of Inspector General (OIG) investigate the NRC Commissioner's 3-19-13 majority vote that resulted in the 6-6-13 Order that ignored the NRC's own technical staff's recommendation to require the installation of severe-accident-capable containment vent systems with radiation filters at nuclear plants (including Limerick)**
  - Although filtered vents are being mandated in other countries, the U.S. has allowed Exelon to stall until 2018 and 2019 for its vent-only installations
  - Limerick eliminated filter installation to save itself money, even though filters protect humans and NRC originally recommended them as cost-justified expenditures (source: NRC's Backfitting cost-justified Substantial Safety, draft)

3-4-14

- **Unit 1 Rapid Plant Shutdown into hot shutdown due to an Electro-Hydraulic Control (EHC) System failure**
  - This caused the inability of all Low Pressure Turbine Intercept Valves to close

3-11-14

- **Mercury report: "'Scram' advances Limerick nuke plant refueling"**

4-9-14

- **NRC denied expansion of nuclear power plant Emergency Planning Zones (EPZs) requested by the NIRS petition**

4-26-14

- **Mercury report: "NRC rejects bid to expand evac zones around nuclear plants"**

5-2-14

Digital First Media post: "NRC Ruling on Evacuation Planning Fails the 'Shadow Test'

5-5-14

- **NRC released its deceptive 2013 assessment of Limerick in the Mercury with the headline, "NRC: 'green' rating for plant in 2013"**
  - NRC deceptively chose the color green, which indicates a violation, knowing that people are conditioned to think green means safe.
  - People are unaware that compliance is not a matter of physical adherence to a standard, but instead, means the data base record shows that no physical violation exists because the record of the regulation, in its original form, has been replaced by the regulation without the requirement, while the violation still exists physically on-site
  - Green violations blanket many Limerick safety defects, such as accidents that can lead to core damage and Limerick's defective GE Mark II Boiling Water Reactors, which all contribute to Limerick's continual state of high risk

5-9-14

- **NRC issued its deceptive post-Fukushima seismic evaluation of Limerick based on generic modeling which hid Limerick's real earthquake risks**

5-13-14

- **Mercury report: "De-commissioning fund yields little consequences for Exelon"**
  - For years, Exelon substituted its own formula for setting aside funds for decommissioning, which saved Exelon money
  - Part of the resulting shortfall of millions of dollars has been assigned to ratepayers

7-14-14

- **NRC issued a revision of its "Design Spectra for Seismic Design of Nuclear Power Plants"**
  - NRC stated that it was issuing this revision without a public comment period because there were only minor staff changes and the NRC staff considers this approach acceptable for defining response spectra for the design of nuclear power plants
  - Limerick, however is unique, with a set of unique seismic markers that may not be in the guide
  - This guide is not a rule and does not require equipment upgrades, because the nuclear industry fought against upgrades due to costs, even though NRC said they offered cost-justified public protection

7-30-14

- **Mercury report: "NRC Mum About Security Problem at Limerick Nuclear Plant"**

8-22-14

- **Emergency Diesel Generator 'D14' cylinder liner cracking and leakage was observed during startup after 2-year outage**

8-26-14

- **NRC announced its "Waste Confidence Rule" which fast-track Limerick license renewal and simply directed Limerick to store all its waste on-site despite growing evidence that none of NRC's assumptions about the nuclear industry's ability to handle nuclear waste work:**
  - Nation-wide evidence suggests that NRC's mandate for Limerick to store high level radioactive waste on-site is no solution for Limerick:

- In 2014, the nation's only underground nuclear waste repository was forced to close. A storage container burst, contaminating the facility and 22 workers. State and DOE officials were forced to pay $74 million in settlements for dozens of permit violations
- On 10-14-15, an underground fire that began in 2010, smoldered and spread to within 1,000 ft. from uncontained nuclear waste. Repeated appeals to Federal, Missouri and Environmental Protection Agency, were ignored as of that date
- On 10-26-15, a soundless 40-second video was turned over to state officials showing bursts of white smoke and dirt flying from several explosions on 10-18-15 from the nation's first federally-licensed low-level radioactive waste dump in the Nevada desert. Opened in 1962, its license was suspended in the 1970s for mishandling shipments of material that were buried but exploded and burned, as shown in the footage. The nuclear dump has not been safely brought under control since its shutdown in 1992

8-28-14

- **The Mercury reported that in September, Exelon would contest the NRC's issuance of a "greater than green" violation regarding Limerick security.**

8-28-14

- **NRC issued Limerick's deceptive "Final Environmental Impact Statement" (EIS), one of the last steps in license renewal that resulted from NRC's allowing public input, but excluding public input from influencing NRC's issuance of Limerick's EIS**
  - Ignoring publicly presented evidence, NRC stated that Limerick's Environmental impacts were small
  - The scope NRC's EIS was extraordinarily narrow and NRC defined the environmental parameters to exclude many factors commonly considered important l by the millions of people living within Limerick's evacuation zone

October 1, 2014 to December 31, 2014

- **NRC stated in its Inspection Report, that it "verified Limerick's 'Evacuation Time Estimate' (ETE) updates"**
  - NRC made a reference to the ETE in a sentence but has not, so far, acknowledged reading and analyzing it
  - It is worrisome that NRC defined "verification" in Limerick's Commitment Audit (2-27-13) as a search of Limerick's database using key words. Verification should include reading the ETE to verify that it is workable, which it is not

10-7-14

- **100 gallons of chlorine leaked into the Schuylkill River from a faulty valve**
  - A second chemical was added, to try to neutralize the chlorine

10-8-14

- **Mercury article: "Limerick nuke plant leaks 100 gallons of bleach in to the Schuylkill River"**

10-20-14

- **NRC relicensed Limerick without the backing of many experts and the public, whose concerns regarding safety and environmental protections were dismissed**
  - Granfathered defects include Limerick's inherently defective BWRs, a motor-operated core water delivery system that is no longer motor-operated and is the subject of experiments, no Limerick-specific reevaluation of Limerick's earthquake risks, no updated SAMA, no test of age-degraded equipment, and a host of exemptions for systemic deficiencies
  - Flawed theories about high-level radioactive waste (spent fuel) have been proven wrong all along, yet NRC was able to license Limerick through the technicality of issuing its Waste Confidence Rule, without proof that it is failsafe.

10-20-14

- **Mercury article: "Limerick nuke plant's license renewed for 20 years"**

10-23-14

- **"The bottom line is, compliance with current licensing basis requirements has never been shown to be valid at any nuclear plant in the country, not at any plant at any time,"**
  - Source: statement by a nuclear engineer with the Union of Concerned Scientists in "Aging Risk vs. Inherently Safe" article regarding extending the life of nuclear power plants

12-23-14

- **Exelon's engineering team inspected its own experimental work to keep Limerick running and NRC issued its "evaluation" of the team's inspection report in "Changes, Tests, Experiments, and Permanent Plant Modifications"**

1-16-15

- **Mercury report: "Environmentalists Challenge Re-licensing of Limerick Nuke Plant"**
  - The article highlighted NRDC action on behalf of public safety on 12-15-14, opposing NRC's license renewal of Limerick without an updated SAMA

2-2-15

- **Mercury report: "Bomb Squad Called to Limerick Nuclear Plant, No Bomb Found"**
  - Fortunately no bomb was found, but the fact remains that Limerick is a terrorist target

2-16-15

- **Surprisingly, instead of publishing Exelon's request to Amend Amendment 174 in the Federal Register, as required, NRC posted it in the Mercury's 'Classifieds' section, stating that it did so because this was an emergency and there was no time to post it in Federal Register.**
  - NRC stated that if it did not grant Exelon's requested amendment, NRC would have to shut Unit 2 down for being in violation of regulations.
  - The emergency was that Exelon could not meet an equipment installation date of 2-27-15, which it knew it needed to do when it asked for the Amendment that set the date that Exelon wanted amended again.

2-23-15

- **Submittal to NRC: ACE Objection to Exelon's Requested Amendment of Amendment No. 174, Leak Detection System Setpoint and Allowable Value Changes"**
  - NRC granted the amendment, allowing Unit 2 to operate in physical violation of regulations until spring refueling

2-24-15

- **Mercury report on Limerick accident: "Valve Leak shuts down Limerick nuclear plant"**

3-1-15

- **Mercury report on Schuylkill's insufficient water supply: "Exelon nuke plant seeks more Schuylkill River water during heat waves"**
  - Limerick's insatiable water use is a growing threat to the public health and safety in this time of global warming

4-6-15

- **Exelon declared an "alert" at Limerick due to a "small" fire which was, according to Exelon, in the reactor building and, according to NRC, in one of the security buildings**

4-7-15

- **NRC released the report of the 3-13-15 meeting between NRC staff and Exelon's lobbying arm, the Nuclear Energy Institute (NEI) to discuss current License Renewal Topics**

4-13-15

- **Unit 2's preplanned shutdown did not work, requiring an immediate manual full shutdown, or a shutdown of a shutdown.**
  - It worked, but shows the constant gamble with safety at Limerick

5-11-15

- **NRC issued Limerick Amendment Nos. 216 (Unit 1)and 178 (Unit 2), approving "Technical Specification Task Force (TSTF) Traveler TSTF-523, for "Managing Gas Accumulation In Emergency Core Cooling, Decay Heat Removal, And Containment Spray Systems"**

6-28-15

- **Unit 2's radiation levels rose due to the accidental overflow of radioactive liquid from a tank resulting in exposure and decontamination of personnel and accessible areas of Unit**

July 7 & 8, 2015

- **Accidental drainage of 231 gallons of cask water "exposing fuel assembly tops" because there were no directions to close the discharge valve after work was completed**
  - Radiation rose until it was noticed by the RP technician, who alerted the floor manager, who noticed the water accumulating on the refueling floor

7-30-15

- **"Town and Country" newspaper published the headline, "Montco Health Department to Distribute Free Potassium Iodide Tablets on Aug. 6"**

8-18-15

- **State officials identified trains called "oil bomb trains" as hazards that warranted updated emergency preparation (Mercury)**
  - The public objected to tracks running through Limerick's site, 1/8 mile from the reactors

9-10-15

- **The Mercury reported, "Feds (NRC) halt study of cancer risks at 7 nuclear plants"**
  - Federal regulators (NRC) pulled the plug on a five-year study of the risk of cancer in communities around six U.S. nuclear plants and a nuclear fuel site.
  - Cancer statistics document very high levels of cancer around Limerick

10-9-15

- **Two circulating water pumps tripped requiring power reduction**

10-19-15

- **Unit 2 reactor shutdown during startup was caused by a reactor water level transient that caused malfunction of the turbine valves**

11-10-15

- **NRC approved Exelon's relief request exempting Limerick's pumps from Inservice Testing (IST)**
  - This exemption excuses Limerick's pumps from the new testing requirement of the American Society of Mechanical Engineers (ASME)
  - NRC based its approval of the exemption on its conclusion that the alternative (no testing) will provide "an acceptable level of quality and safety" (the public's definition of acceptable quality and safety may differ from NRC's)

11-18-15

- **ACE filed an objection to NRC's proposed deregulation of radiation exposure, contending that deregulation might remove accountability and liability for routine and accidental radiation releases from Limerick Nuclear Plant.**
  - At issue was NRC's proposal to claim that radiation exposure is beneficial to humans
  - However, some radionuclides produced by Limerick's fission process are man-made and not found in nature, like Iodine 131 and Strontium-90, and the effects of Limerick's radiation are not known, nor is the cumulative, additive, and synergistic effect on health fully understood

11-25-15

- **NRC issued a Limerick violation for inadequate procedures resulting in exceeding structural and seismic concrete block wall adequacy for storage of Emergency Diesel Generator switchgear, circuit breakers, and ground trucks**
  - This was more than minor because it interfered with equipment availability for preventing core damage in an emergency

12-19-15

- **A fleeting equipment malfunction caused an unplanned shutdown during startup.**

3-30-16

- **Post-Fukushima, Limerick has not instituted NRC's recommendations yet, and unlike Fukushima, Limerick is not situated beside an ocean, but has an anemic river augmented by the water pumped in from the Wadesville Mine Pit.**
  - Meanwhile, five years after its meltdowns, Fukushima officials haven't stopped Fukushima from leaking.
  - So officials have approved the activation of a one-mile long wall of refrigerated pipes dug 100 feet underground around Fukushima in the hopes that the soil around the plant can be frozen, confining radiation to Fukushima's melted reactors
  - If an accident happened at Limerick, the consequences to the Greater Philadelphia Region, Pennsylvania and the nation would be catastrophic, in terms of death, and/or impaired health, loss of environmental resources and economic devastation,
  - It hardly seems worth using Limerick as an energy source that has been proven to be such an enormous and unnecessary risk in terms of the safer, cheaper, cleaner alternatives available currently that could form the basis for a more sustainable energy policy

Pottstown Mercury
Monday, February 16, 2015
pg. C1 : "Classifieds"

PUBLIC NOTICE
NRC STAFF PROPOSES TO AMEND OPERATING LICENSE AT THE LIMERICK GENERATING STATION, UNIT 2

he U.S. Nuclear Regula-ory Commission (NRC or the ommission) has received an pplication dated February 2, 2015 (Agencywide Docu-nents Access and Manage-ent System (ADAMS) Acces-ion No. ML15043A649), from xelon Generation Company, LC (Exelon, the licensee), or an amendment to the op-rating license for the Limer-k Generating Station (LGS), nit 2, located in Montgomery ounty, Pennsylvania.

he proposed amendment ould extend the implemen-ation period for Limerick enerating Station Unit 2, mendment No. 174, which as issued by the NRC staff n December 29, 2014 (ADAMS ccession No. ML14324A808). mendment No. 174 was ef-ective as of the date of issu-nce (i.e., on December 29, 014) and was required to be mplemented within 60 days .e., by February 27, 2015). ue to unforeseen difficulties ssociated with calibration f a temperature indicating witch, Exelon requested that e implementation period be xtended. Specifically, Exelon equested that implementa-on not be required until pri- to startup from the spring 015 refueling outage.

mendment No. 174 revised chnical specification (TS) etpoints and allowable val-es for certain area tempera-re instrumentation associ-ted with the leak detection ystem (LDS). The purpose of e LDS is to detect and pro-de the signals necessary to olate leakage from the reac-r coolant pressure bound-y before pre-determined nits are exceeded. The af-cted TS Instrumentation onitor ambient temperature the reactor water cleanup ystem area, the high pres-re coolant injection equip-ent room and pipe routing ea, and the reactor core olation cooling equipment om and pipe routing area. e changes made by Amend-ent No. 174 established new mperature setpoint values ich that normal variations the maximum operating mperatures for the affected ant areas would not result spurious system isolations. e licensee requested that e proposed amendment be ocessed on an exigent ba-s, in accordance with the ovisions in Title 10 of the ode of Federal Regulations 0 CFR) Section 50.91(a)(6). nder 10 CFR 50.91(a)(6)(i))), where the Commission nds that exigent circum-ances exist, in that a licens-e and the Commission must ct quickly and that time does ot permit the Commission to ublish a Federal Register no-ce allowing 30 days for prior ublic comment, and it also etermines that the amend-ent involves no significant azards considerations, the ommission will use local me-ia to provide reasonable no-tice to the public in the area surrounding a licensee's facil-ity of the licensee's amend-ment and of its proposed determination that no signifi-cant hazards consideration is involved, consulting with the licensee on the proposed media release and on the geo-graphical area of its coverage.

The licensee is basing exigent circumstances on the follow-ing considerations. During implementation of the vari-ous setpoint changes associ-ated with Amendment No. 174 for LGS, Unit 2, an unforeseen equipment problem was re-cently identified. The prob-lem involved an inoperable key pad needed to make the setpoint changes to one tem-perature indicating switch. To repair the key pad, equipment would need to be deenergized and removed from service. This would result in declar-ing equipment inoperable, in accordance with the plant TSs. Based on probabilisitic risk assessment and opera-tional risk considerations, the plant would be considered in a higher risk configuration un-der these circumstances. The extension of the implementa-tion period would allow Exelon to complete the necessary calibration to the tempera-ture indicating switch during less risk-significant operat-ing conditions (i.e., during a refueling outage). Without the proposed amendment, the licensee would be in viola-tion of the LGS, Unit 2, oper-ating licensee if the changes approved in Amendment No. 174 were not implemented by February 27, 2015. It is noted that the inability to revise the setpoints, due to the inoper-able key pad, does not affect the ability of the temperature indicating switch to perform its intended functions with the currently calibrated set-points.

As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consider-ation, using the standards in 10 CFR 50.92. The NRC staff's review is presented below.

Operation of LGS, Unit 2, in ac-cordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed amendment extends the im-plementation period specified in LGS Amendment No.174 from 60 days to prior to start-up from the spring 2015 Unit 2 refueling outage. As such, the proposed amendment is purely administrative in na-ture. No physical changes to the plant will occur as a result of the proposed amendment. In addition, the proposed amendment will not change the operation of any plant structure, system, or compo-nent (SSC).

Therefore, the proposed amendment does not have any effect on the ability of any SSC from per-forming its intended design function and does not have any impact on the ability of any SSC from preventing or mitigating any previously evaluated accident.

Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed amendment would not create the possibil-ity of a new or different kind of accident from any previ-ously analyzed. The proposed amendment is purely admin-istrative in nature. The pro-posed amendment does not involve any physical changes to the plant and does not in-volve any changes in the oper-ation of the plant. Therefore, the proposed amendment would not introduce any new accident initiators, nor would it have any effect on the ca-pability of any plant SSC from performing its intended safe-ty function.

Therefore, the proposed amendment does not cre-ate the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed amendment would not involve a signifi-cant reduction in a margin of safety. Margin of safety is re-lated to the confidence in the ability of the fission product barriers (i.e., fuel cladding, reactor coolant pressure boundary, and containment) to limit the level of radiation dose to the public. The pro-posed amendment is purely administrative in nature. The proposed amendment does not involve any physical changes to the plant and does not involve any changes in the operation of the plant. There-fore, the proposed amend-ment does not have any effect on the capability of the fission product barriers to limit the level of radiation dose to the public.

Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

Following an initial review of this application, the request-ed amendment has been eval-uated against the standards in 10 CFR 50.92 and the NRC staff has made a proposed (preliminary) determination that the requested amend-ment involves no significant hazards consideration. The changes do not significantly increase the probability or consequences of any accident previously considered, nor create the possibility of an accident of a different kind, nor significantly decrease any margin of safety.

If the proposed determination that the requested license amendment involves no sig-nificant hazards consider-ation becomes final, the staff will issue the amendment without first offering an op-portunity for a public hearing. An opportunity for a hearing will be published in the Fed-eral Register at a later date and any hearing request will not delay the effective date of the amendment.

If the staff decides in its fi-nal determination that the amendment does involve a significant hazards consid-eration, a notice of opportu-nity for a prior hearing will be published in the Federal Register and, if a hearing is granted, it will be held before the amendment is issued.

Comments on the proposed determination of no signifi-cant hazards consideration may be (1) telephoned to Mr. Douglas Broaddus, Chief, Plant Licensing Branch I-2, by collect call to 301-415-8124, or by facsimile to 301-415-2102, (2) e-mailed to Doug.Broad-dus@nrc.gov, or (3) submit-ted in writing to the Chief, Rules, Announcements and Directives Branch, Division of Administrative Services, Of-fice of Administration, Mail Stop: OWFN-12-H08, U.S. Nu-clear Regulatory Commission, Washington, DC 20555-0001. All comments received by 5:00 p.m. on February 24, 2015, will be considered in reaching a final determination. A copy of the application may be ex-amined electronically through the NRC's Agencywide Docu-ments Access and Manage-ment System (ADAMS) in the NRC Library at http://www.nrc.gov/reading-rm/adams.html and at the Commission's Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Persons who do not have ac-cess to ADAMS or who en-counter problems in access-ing the documents located in ADAMS should contact the NRC PDR reference staff by telephone at 1-800-397-4209 or 301-415-4737, or by e-mail to pdr.resource@nrc.gov.

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