United Sates of America Nuclear Regulatory Commission Before the Atomic Safety and Licensing Board

In the Matter of	: Docket No. #50-289 & 50-320
Exelon Generation Company, LLC	: Accession No. ML19182A182*
Three Mile Island Nuclear Station,	:
Units 1 and 2, Dauphin County	:

Eric J. Epstein, Chairman of Three Mile Island, Alert Inc.'s Petition to Intervene and Hearing Request

Eric J. Epstein ("Epstein" and "Mr. Epstein"), Chairman of Three Mile Island Alert, Inc. ("Petitioners", "TMIA" or "TMI-Alert") request a hearing and leave to intervene in the above License Amendment Request, ("LAR").

I. Introduction

As described in the Federal Register, Biweekly Notice; Applications and Amendments to Facility Operating Licenses and Combined Licenses Involving No Significant Hazards Considerations.

A Notice by the Nuclear Regulatory Commission was published on September 12, 2019 considering whether to approve an amendment that would revise the Site Emergency Plan ("SEP"), and Emergency Action Level ("EAL") scheme for the permanent defueled condition.

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* Date of amendment request: July 1, 2019. A publicly-available version is in ADAMS under Accession No. ML19182A182.

According to the NRC, Exelon's License Amendment Request, ("LAR"), "Margin of safety is associated with confidence in the ability of the fission product barriers (i.e., fuel cladding, reactor coolant system pressure boundary, and containment structure) to limit the level of radiation dose to the public. The proposed changes associated with the SEP and EAL scheme - as contained in the LAR - do not impact operation of the plant or its response to transients or accidents. The changes doe not affect the Technical Specifications. The proposed changes do not involve a change in the method of plant operation, and no accident analyses will be affected by the proposed changes."

Mr. Epstein disputes Exelon's cursory survey, and the NRC's findings of "no significant hazard." Epstein argues that the licensee's retreat from safety endangers the communities living around Three Mile Island ("TMI"). A melted core and 1,500 tons of high-level radioactive waste, present a clear and present danger, particularly to children attending day care centers and nursery schools.

The LAR unilaterally serves to defund emergency responders while a the same raiding Three Mile Island Unit-1 ("TMI-1") Nuclear Trust Funds. ("NTF"). Furthermore, Exelon is not the licensee of Three Mile Island Unit-2 ("TMI-2"), and both Exelon and the NRC which fails to account for the damaged reactor's unique status. (Exhibit, #1).

NRC staff stated, "The Post Defueled Emergency Plan ("PDEP") will continue to provide the necessary response staff with the appropriate guidance to protect the health and safety of the public." This notion has been undermined at a macro level by NRC Commissioner Baran's opinion in Holtec's request to revise the Emergency Plan at Pilgrim. (VR-SECY-19-0078.)

On the ground at TMI, to pretend that TMI-2 - is being monitored by a staff of "0" feeds into the LAR narrative that there are no significant hazard" to bumping staffing down to "skeletal" levels.

Exelon is proposing to retreat to the fence line, and abandoning and defunding the communities they will need to partner with to implement the EAL and SP.

In short, Exelon would like to return Three Mile Island to the pre-979 era where emergency planning was little more than an afterthought stored in a drawer.

The proposed changes do involve a significant reduction in a margin of safety, and place the counties of Cumberland, Dauphin, Lancaster, and York in an underfunded and vulnerable positions. Exelon's LAR arrives at the same time that Pennsylvania counties are required to pay millions of dollars to update voting machines. (Exhibit, #2).

Moreover, there is no plan in place outside the fence line, despite the fact that is this the only community that evacuated for a nuclear accident on March 30, 1979. And, there are no relocation centers planned outside of the ten mile radius. In fact the LAR is replete with assumptions, incorrect projections and miscalculations. (1)

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1 Please refer to Exhibit, #3 for a detailed critique of Exelon's Proposed License Amendment Request. The proposed LAR is a significant reduction in a margin of safety, and the retreat to the fence line is counter to the nuclear culture of safety in depth.

The NRC staff has reviewed the licensee's analysis, and based on their review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration. The NRC analysis is fatally flawed, limited in scope, and produced technically deficient conclusions. The proposed amendment request involves significant hazards and unique challenges the NRC failed to analyze, capture, or investigate.

That risk is also a financial challenge to the Commonwealth— there is no guarantee that Pennsylvania taxpayers, will not become the payers of last resort, and responders of the first resort after Exelon reduces their emergency planning and response responsibilities.

TMI's unique status (2) as an isolated island with limited access is further exasperated by frequent ice jams), proximity to an international airport, and special populations including but not limited to the Amish, day care and nursery schools, memory care and non-ambulatory living communities (Exhibit, #4).

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2 Due to the unique nature of TMI-2, GPU Nuclear has included a Section II, "Background," in the PSDAR report to provide information on the design, history, and current status of the Three Mile Island Nuclear Station Unit 2. Sections III through V address the 10 CFR 50.82 requirements to describe and provide a schedule and cost estimate for the planned decommissioning activities. Section VI provides the reasons for concluding that the activities planned for the decommissioning of TMI-2 are bounded by previously issued environmental impact statements. Section VII provides a list of references used in the PSDAR..." (Subject: Three Mile Island Nuclear Station, Unit 2 Docket No. 50-320, Possession Only License No. DPR-73 Post-Shutdown Decommissioning Activities Report Submittal, June 28, 2013.)

The NRC staff conducted a generic review of the licensee's generic analysis. Based on this cookie cutter review , the three standards of 10 CFR 50.92(c) have not been satisfied.

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?
Response: Yes.

The proposed changes to the Site Emergency Plan, and EAL scheme do impact the function of plant Structures, Systems, or Components ("SSCs"). (Please refer to Exhibit, #5 for a violation at an Exelon plant relating to SSCs.)The proposed changes do affect accident initiators or precursors, and do alter design assumptions. The proposed changes do prevent the ability of the on-shift staff and Emergency Response Organization ("ERO") to perform their intended functions to mitigate the consequences of any accident or event that will be credible in the permanently defueled condition.

The probability of occurrence of previously evaluated accidents is increased, since most previously analyzed accidents are more likely to occur and the probability of the credible accidents are affected by the proposed amendment.

Therefore, the proposed change does involve a significant increase in the probability and/or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: Yes.

The proposed changes reduce the size and scope of the EAL and SEP scheme commensurate with the hazards associated with a permanently shutdown and defueled facility. The proposed changes did involve installation of new equipment or modification of existing equipment, so that no new equipment failure modes are introduced, i.e., Fuel Handling Building Crane. (3) In addition, the proposed changes do not result in a change to the way that the equipment or facility is operated so that no new or different kinds of accident initiators are created.

Therefore, the proposed changes create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: Yes.

The margin of safety associated with the ability of the fission product barriers (i.e., fuel cladding, reactor coolant system pressure boundary, and containment structure) to limit the level of radiation dose to the public has not been proven. The proposed changes associated with the SEP and EAL scheme impact operation of the plant or its response to transients or accidents. The change does affect the Technical Specifications, and ignores the unique condition of TMI-2. The proposed changes involve a change in the method of plant operation, and accident analyses will be affected by the

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3 Exelon failed to produce supporting data for their proposal Regarding TMI-LAR to Delete DTS 3/4.1.14, "Handling of Irradiated Fuel in the Fuel Handling Building Crane. At the Prehearing Submittal Meeting convened on October 28, 2019, Exelon refused to provide supporting data until the LAR was approved by the NRC.

proposed changes. Safety analysis acceptance criteria are affected by the proposed changes. The Post Defueled Emergency Plan will not continue to provide the necessary response staff with the appropriate guidance to protect the health and safety of the public, and unilaterally usurps the license of First Energy.

Proposed staffing levels are skeletal with under qualified personnel assuming the role of certified technicians, and guidance is over reliant on general and vague language. (Exhibit, #3)

Therefore, the proposed change does involve a significant reduction in a margin of safety, and the retreat to the fence line is counter to the nuclear culture of safety in depth.

The NRC analysis was fatally flawed, limited in scope, and produced technically deficient conclusions.

The margin of safety is associated with confidence in the ability of the fission product barriers (i.e., fuel cladding, reactor coolant system pressure boundary, and containment structure) to limit the level of radiation dose to the public. The proposed changes are associated with the SEP and EAL scheme and impact operation of the plant or its response to transients or accidents. The change does affect the Technical Specifications, and increases the health and safety risk to the community. The proposed changes do involve a change in the method of plant operation, and accident analyses will be affected by the proposed changes. Safety analysis acceptance criteria are affected by the proposed changes.

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4 High burnup fuel cladding has not been certified to withstand dry cask storage for elongated time periods. (Exhibit, #6)

The Post Defueled Emergency Plan ("PDEP") will not provide the necessary response staff with the appropriate guidance to protect the health and safety of the public. Therefore, the proposed change involves a significant reduction in a margin of safety.

Based on Mr. Epstein's review, it appears that the three standards of 10 CFR 50.92(c) are not satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration. Mr. Epstein disputes the NRC findings. The amendment would revise the Site Emergency Plan and Emergency Action Level scheme for the permanently defueled condition.

Section 189 (a) of the Atomic Energy Act is clear: "In any proceeding under this chapter, for the granting, suspending, revoking, or amending of any license or construction permit, or application to transfer control ..., the Commission shall grant a hearing upon the request of any person whose interest may be affected by the proceeding, and shall admit any such person as a party to such proceeding."

The request to "amend" and "suspend" Three Mile Island Unit-1's ("TMI-1") and Three Mile Island Unit-2's ("TMI-2") current licenses, creates significant: 1) Significantly increases the probability or consequences of an accident previously evaluated 2) Creates the possibility of a new and/or different kind of accident. 3) Reduces the margin of safety.

Moreover, the proposed LAR violates the Atomic Energy Act, and is invalidated by unilaterally "amending" and "suspending" First Energy's Possession Only License of Unit-2 in exchange for "service agreements." Exelon followed the NRC rules and regulations relating to direct or indirect licensee transfers similar to the process that was required when AmerGen transferred its licensee to Exelon at TMI-1.

Title 10 of the Code of Federal Regulations (10 CFR), Section 50.80, Transfer of licenses,"states that the U.S. Nuclear Regulatory Commission must consent to the direct transfer of the license. Under 10 CFR 50.80, no license, or any right thereunder, shall be transferred, directly or indirectly, through transfer of control of the license, unless the NRC gives its consent in writing.

In the final leg of a legal license transfer, the NRC has the authority, pursuant to Sections 161b, 161i, 1610, and 184 of the Atomic Energy Act of 1954, as amended (the Act), 42 U.S.C. 2201(b), 2201(i), 2201(o), and 2234; and 10 CFR 50.80, to order the approval of application regarding the proposed direct license transfer

The transfer of ownership from AmerGen to Exelon does no impact the license or ownership of TMI-2. (6) To the contrary, Three Mile Island Unit-2's Possession Only License was transferred from General Public Utilities to FirstEnergy.

On September 5, 2002 , Exelon announced that it was putting its share (50%) of AmerGen up for sale. British Energy which was bankrupt, owned the other 50% of AmerGen, and includes the following nuclear power plants: Clinton, Oyster Creek, and Three Mile Island. (6)

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5 Reactor license transfer provisions are found in Title 10 to the Code of Federal Regulations, and Section 184 of the Atomic Energy Act. NRC written consent is required for a license transfer. Relevant regulations include:

- 10 CFR Part 2, Subpart M - Public Notification, Availability of Documents and Records, Hearing Requests and Procedures for Hearings on License Transfer Application.
- 10 CFR 50.33 - Contents of applications; general information.
- 10 CFR 50.38 - Ineligibility of certain applicants.
- 10 CFR 50.40 - Common standard.
- 10 CFR 50.75 - Reporting and record keeping for decommissioning planning.
- 10 CFR 50.80 - Transfer of licenses.
- 10 CFR Part 51 - Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions.
- 10 CFR Part 140 - Financial Protection Requirements and Indemnity Agreements.

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6 The First Energy Solutions bankruptcy proceeding is not to be confused with AmerGen and the bankruptcy of British Energy. On September 5, 2002, Exelon announced that it was putting its share (50%) of AmerGen up for sale. British Energy which was bankrupt, owns the other 50% of AmerGen.
http://www.energychoicematters.com/stories/20191015z.html

On September 11, 2003, Florida Power & Light ("FPL Group") announced a sales agreement to buy British Energy's 50% of TMI-1. However, on December 23, 2003 , British Energy completed the sale of its 50% AmerGen interest to Exelon Generation after receiving shareholder approval of the deal.

Exelon was British Energy's partner in the AmerGen joint venture that bought three U.S. nuclear plants. British Energy paid a break fee of $8.29- million to FPL Group, following termination of the original sales agreement between British Energy and FPL after Exelon exercised its right of first refusal and matched FPL's offer to become the sole owner of the AmerGen plant.

GPU Nuclear maintained TMI-2 in the PDMS state while successfully operating TMI-1 until AmerGen (a joint venture between Philadelphia Energy Company and British Energy) purchased the operating TMI-1 from GPU Nuclear in 1998. The sale of TMI-1 included the Unit 1 buildings, structures, and the majority of the site property.

However, GPU Nuclear maintained ownership of TMI-2. A "monitoring agreement" between AmerGen and GPU Nuclear provides for AmerGen performing certain functions at TMI-2. These functions include maintenance and testing, radiological and environmental controls, security and safety functions and licensing activities required by the PDMS Technical Specifications and PDMS Final Safety Analysis Report. (7)

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7 "Three Mile Island Nuclear Station, Unit 2 Docket No. 50-320, Possession Only License No. DPR-73 Post-Shutdown Decommissioning Activities Report Submittal." GPU Nuclear, June 28, 2013, pp. 7, 8 and 10.)

On August 9, 2000, FirstEnergy Corporation GPU announced a merger expected to be finalized by August, 2001. FirstEnergy agreed to acquire GPU for approximately $4.5 billion.

Ownership of TMI-2 and liability for 1,990 health suits against GPU was transferred to FirstEnergy in November, 2001, when TMI-2 was formally transferred from GPU Nuclear to FirstEnergy. GPU Nuclear retains the license for TMI-2. The plant is owned by the FirstEnergy Nuclear Operating Company.

GPU Nuclear, Inc. acting for itself and for the Metropolitan Edison Company, Jersey Central Power and Light Company, and the Pennsylvania Electric Company, developed a post-shutdown decommissioning activities report for the Three Mile Island Nuclear Station, Unit 2 in accordance with the requirements of 10 CFR 50.82, "Termination of license," paragraph (a)(4)(i).

There was no license transfer to AmerGen, Exelon or any Com Ed or PECO affiliate or subsidiary as a result of the sale of TMI-2 to FirstEnergy. The only documents that bind Exelon and First Energy are "Service Agreements." (8)

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8 The sale of TMI-1 included the Unit 1 buildings, structures, and the majority of the site property; however GPU Nuclear maintained ownership of TMI-2. A monitoring agreement between AmerGen and GPU Nuclear provides for AmerGen performing certain functions at TMI-2 while TMI-2 is in PDMS on the behalf of GPU Nuclear. These functions include maintenance and testing, radiological and environmental controls, security and safety functions and licensing activities required by the PDMS Technical Specifications and PDMS Final Safety Analysis Report. ("Subject: Three Mile Island Nuclear Station, Unit 2 Docket No. 50-320, Possession Only License No. DPR-73 Post-Shutdown Decommissioning Activities Report Submittal, pp. 5-6)

FirstEnergy did not cosponsor the LAR , nor did the Company surrender its license. In fact, First Energy's name is misapplied five times,in the License Amendment Request, and Exelon neglected to mention the Memorandum of Understanding ("MOU") or include the Service Agreements.

First Energy is now negotiating to sell TMI-2. FirstEnergy has announced that they had entered into a contract transferring the licenses and assets associated with Unit 2 to TMI-2 Solutions LLC, a subsidiary of Energy Solutions Inc.

This Abbott and Costello arrangement does not constitute proportional ownership. The current agreements in place between Exelon and FirstEnergy can be abandoned, abrogated or severed under the terms of the MOU and Service Agreement. In other words, FirstEnergy does not have an ownership interest in TMI-1, and Exelon does not own or hold the Possession Only License ("POL") for TMI-2.

This "arrangement" is not analogous to the proportional ownership arrangement that exists at the Hope Creek and Salem Nuclear Generating Stations and the Peach Bottom Atomic Power Station ("Peach Bottom") between Exelon Nuclear nd Public Service Electric & Gas referred to as PSE&G Nuclear, LLC.

FirstEnergy is not a proportional owner of TMI-1, and Exelon is not a proportional owner of TMI-2. Exelon and First Energy are competitors . In 1996 the Pennsylvania legislature passed the Electricity Customer Choice and Competition Act. The law restructured the electricity utility industry, separating the generation of electricity from its distribution and transmission.

FirstEnergy does not have access to TMI-1's DTFs, and Exelon is does not have access to TMI-2's Decommissioning Trust Funds. In fact, FirstEnergy's DTF may be surrendered to EnergySolutions if the TMI-2 license transfer is approved. (9)

At a minimum, FirstEnergy mist submit a separate LAR detailing why the EAL and SEF proposal at presents "no significant hazards" for the crippled Unit-2 plant. TMI-2's unique status - creates different challenge for the proposed EAP Scheme and modified SEP proposal that include but are not limited to bankruptcy proceedings , cork seam leaks, hazardous working environments, disposition of contaminated Accident Generated Water, recriticality scenarios the potential for spent fuel to be returned to TMI-2 from Idaho in 2035.

Complicating matters is the fact that TMI-2 may be sold to EnergySolutions. EnergySolutions may have to submit a Post-Shutdown Decommissioning Activities Report ("PSDAR") to the NRC that details its plans. Under the existing PSDAR for TMI 2, the plan was to dismantle the two units at the same time :

> Consistent with a signed memorandum of understanding between FirstEnergy Corp. (parent of GPU Nuclear) and Exelon regarding the timing of decommissioning activities at TMI-2, it is assumed that decommissioning at TMI-2 will not begin until the expiration of the TMI-1 operating license in 2034 and will be coordinated with post-shutdown activities for TMI-1." (GPU Nuclear, PSDAR, p. 1`).

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9 GPU Nuclear, Inc. acting for itself and for the Metropolitan Edison Company, Jersey Central Power and Light Company, and the Pennsylvania Electric Company, developed a post-shutdown decommissioning activities report for the Three Mile Island Nuclear Station, Unit 2 in accordance with the requirements of 10 CFR 50.82, "Termination of license," paragraph (a)(4)(i).

This proceeding should be held in abeyance until FirstEnergy (or perhaps Energy Solutions) submit an updated Emergency Action Level and the Site Emergency Plan scheme for the permanently defueled condition at Three Mile Island Unit-2.

Approval of the LAR should also be contingent on the NRC executing an MOU relating to the "service Agreement" between TMI-1 and TMI-2.

These plants are not conjoined nuclear twins. They are separate entities owned by two separate companies. (10) There were no contracts or documents signed or executed that co-joined TMI-1 and TMI-2. To the contrary, these entities are competitors . Exelon is under investigation by the Federal Bureau of Investigation (FBI), the Security and Exchange Commission ("SEC") and United States Attorney's Office in Chicago, and FirstEnergy's environmental exposures appear to be in fact a result of bankruptcy of proceedings.

Mr. Epstein quested a copy of the MOU and Service Agreements from Exelon and the NRC. Epstein contacted Mr. Justin Poole, Office of Nuclear Reactor Regulation, on November 6, 2019 at 3:48 p.m. Mr. Epstein requested the cost of the spent fuel crane and who was paying for the crane as well a copies of the MOU and service agreements. Mr. Poole told Mr. Epstein that he was not in possession of the data or the documents.

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10 The TMI 230 kV switchyard and a small land parcel near the TMl- 2 cooling towers along the eastern shoreline of Three Mile Island are also owned by FirstEnergy. The TMl-2 structures are intermingled with those of TMl-1; however, the decommissioning of TMl- 2 and TMl-1 are independent actions and GPU PSDAR only described actions applicable to TMl- 1.

Mr. Epstein attempted three times to contact Michael Gallagher Exelon Nuclear, Vice President, for License Renewal and Decommissioning, from November 6, 2019 to November 19, 2019 . Mr. Gallagher did not return calls. Mr. Epstein was apprised by senior management on November 11, 2019, that Exelon was not required to release the information.

A monitoring agreement between AmerGen and GPU Nuclear provides for Exelon to perform certain functions at TMI-2 while the plant is in PDMS on the behalf of GPU Nuclear. These functions include maintenance and testing, radiological and environmental controls, security and safety functions and licensing activities required by the PDMS Technical Specifications and PDMS Final Safety Analysis Report.

Mr. Epstein is not in possession of the MOU or services agreements. The proposed LAR should be held in abeyance until Exelon produces the documents to Mr. Epstein . Furthermore, neither site has an approved mode of decommissioning, which makes this amendment request premature. Finally, First Energy's bankruptcy disposition - along with the proposed sale of TMI-2 must be approved and resolved - before the NRC can approves this license amendment request.

II. Motion to Intervene.

There can be no doubt that affected parties like Eric J. Epstein and Three Mile Island Alert, Inc., have hearing rights under the Atomic Energy Act. Neither can there be any doubt that license amendment requests such as these are adjudications that also trigger hearing rights under 5 U.S.C. § 551(7) of the Administrative Procedure Act. Both of these laws require giving those whose interests would otherwise be ignored a meaningful opportunity to adjudicate the health, safety, and environmental matters that Epstein raises here.

In this proceeding the NRC must decide whether the Licensee Amendment Request meets the NRC three criteria identified above. The NRC must provide legal justification for how Exelon can unilaterally subsume the license of another separate reactor operated by a different corporation into a single omnibus LAR.

As shown below, Mr. Epstein is entitled to intervene because he (1) has standing and (2) pleads at least one valid contention. (Carolina Power and Light Co. and North Carolina Eastern Municipal Power Agency (Shearon Harris Nuclear Power Plant, Units 1 and 2), LBP-82-119A, 16 NRC 2069, 2070 (1982).

As discussed below, Eric. J. Epstein will be affected by this proceeding. This being so, Section 189(a)(1)(A) of the Atomic Energy Act ("AEA") requires the Commission to grant Mr. Epstein a hearing.

In addition, based on previous cases involving Mr. Epstein and Three Mile Island, Alert, Inc. "transfer of control" triggers the right of Mr. Epstein's as an individual and TMI-Alert, as an organization, to intervene in the immediate proceeding. (AmerGen Energy Co., LLC, Three Mile Island Nuclear Station, Unit 1), CLI-05-25, 62 NRC 572, 573-74).

A. Eric J. Epstein, As An Affected Local Resident, School Board Member, and Chairman of TM-Alert, Inc. Has Standing

TMI-Alert meets the requirements of 10 C.F.R.§2.309(d). Three Mile Island Alert ("TMIA" or "TMI-Alert") is a nonprofit citizens' organization located at 315 Peffer Street, Harrisburg, Pennsylvania, 17102. Many of TMIA's members make their residences and places of occupation and recreation less than 10 miles from Three Mile Island. (Please refer to Declarations in Appendix A.)

TMI-Alert has representational standing to intervene in this license proceeding for several reasons.

The NRC has consistently found that Eric Epstein and TMI-Alert had standing in earlier NRC proceedings dating Restart of TMI- in 1980 through License Transfer of Unit-1 from AmerGen to Exelon in 2009.

In September, 1992, GPU and the NRC agreed to a negotiated settlement on the Post-Defueling Monitored Storage ("PDMS") of TMI-2 with TMI-Alert Chairman Eric Epstein. The Agreement stipulates GPU Nuclear will provide equipment and resources to independently monitor radioactive levels at TMI-2; $700,000 for remote robotics research to assist in the cleanup and minimize worker exposure; and, guarantees that TMI-2 will never operate or serve as a radioactive waste repository for any radioactive waste generated off the Island.

On January 14, 1999 , AmerGen, entered into a Negotiated Settlement Agreement with TMIA's Chairman, Eric Epstein. The Agreement stipulates that AmerGen will maintain equipment to allow citizens to independently monitor radiation releases at TMI; ensure the TMI work force exceeds minimal NRC requirements ; and, also absorb additional decommissioning costs; guarantees no radioactive waste generated offsite can be stored at TMI; and, AmerGen also agreed not to conduct business with any company boycotted by the U.S. for military or economic reasons.

On May 20, 2008, Exelon Generation and EFMR Monitoring Group ("EFMR"), today announced that they have entered into a five-year agreement that provides benefits to the communities surrounding Three Mile Island.

Eric Epstein, chairman of EFMR said, "We have chosen cooperation over confrontation, and the big winner is the community," said. "This agreement will have a net impact to the region in excess of $1 million." As part of the agreement, Epstein agreed to drop all legal challenges to TMI Unit 1's application for license renewal before the U.S. Nuclear Regulatory Commission."

William Noll, Three Mile Island Site Vice president, said, "We are pleased to have resolved important issues and to provide benefits to the local community. At the same time we will continue to have an open channel of communication with EFMR."

The Commission has ruled that, under certain circumstances, even if a current proceeding is separate from an earlier proceeding, it will refuse to apply its rules of procedure in an overly formalistic manner by requiring that petitioners, who participated in the earlier proceeding, must again identify their interests to participate in the current proceeding.
See also Consumers Power Co. (Midland Plant, Units 1 and 2), 7 AEC 7, 12 (1974).

Eric Epstein is a school board director for the Central Dauphin School District which is within within ten miles of Three Mile Island. Also, members that TMI-Alert represents in this proceeding live within the 10-mile geographical zone that might be affected by a release of fission products into the environment during or after decommissioning. Three Mile island Alert is entitled to the presumption of injury-in-fact for persons residing within that zone (see Houston Lighting & Power Co. (South Texas Project, Units 1 & 2), LBP-79-10, 9 NRC 439, 443 (1979); Detroit Edison Co. (Enrico Fermi Atomic Power Plant, Unit 2), LBP-79-1, 9 NRC 73, 78 (1979); and Entergy Nuclear Generation Co. & Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station), LBP06-23, 64 NRC 257, 270 (2006). That presumption is well-founded here.

The interests of Eric Epstein and Three Mile Island Alert and its members extend to all aspects of TMI's radiological decommissioning, spent nuclear fuel management (11), and site restoration. The proposed license amendment raises significant health, safety, environmental, and financial concerns for them.

TMI-Alert and its members are at risk if there is a shortfall in the Decommissioning Fund that prevents the site from being fully decontaminated and restored. The radiological risk to their health and safety and to the environment if the site is not fully decontaminated includes the threat of radiological contamination of land that will be released for public use, and of the Counties of Cumberland, Dauphin and York, the Susquehanna River, and estuaries into which there will be radiological runoff, and potentially of their drinking water. Public health, safety and economic impact will result from actual/measured contamination

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11 The NRC reported an inherent safety challenge to to spent fuel management: "Fuel handling building, 281-foot elevation, on August 6, 2019. (Three Mile Island Integrated Inspection Report, #05000289/2019003 November 6, 2019.) . This means the Fuel Handling Building is 25 feet below flooding protection barriers

On October 30, 2019 the NRC issued Information Notice 2019-09 "Spent Fuel Movement Issues" highlighting issues and noncompliance that have occurred at six U.S. reactor sites (Clinton, Fort Calhoun, San Onofre, Kewaunee, Palisades and Pilgrim) involving inadequate analysis and calculations for dry cask heavy load drops and single failure proof handling systems at both decommissioning and operating reactors.

That is also financial risk to the Commonwealth– there is no guarantee that Pennsylvania taxpayers, including Mr. Epstein and TMIA's members, will not become the payers of last resort, and responders of the first resort after Exelon reduced their emergency planning commitments to the fence line. and has already received NRC approval to raid the decommissioning fund.

Mr. Epstein as a private citizen and Chairman of TMI-Alert has an indisputable interest in ensuring that both owners of the Three Mile Island site provide financial assurance that the site will be fully prepared to protect and implement an evacuation plan in the event of another nuclear accident according to applicable federal, state, and local requirements.

There is no such assurance, for the myriad reasons discussed below. If the NRC were to approve the LAR without first resolving the Petitioners' public safety, environmental and financial concerns, that approval would result in an unacceptable risk to the environment, and would jeopardize the health, safety, welfare, and economic interests of Mr. Epstein and members of TMI-Alert who live, recreate, conduct business and own property within the areas likely to be impacted by the nuclear power station.

The information in the LAR and supporting documents itself shows that there is not sufficient money in the Decommissioning Trust Fund., and that Exelon has not submitted a guarantee or surety bond to provide assurances they can finance a skeletal evacuation plan. The problem is exacerbated by the fact that Exelon will likely remain a repository for spent nuclear fuel for an indeterminable period of time, probably many decades into the future, and perhaps indefinitely, after decommissioning itself is complete.

Mr. Epstein and TMI-Alert also should be granted standing because its participation may reasonably be expected to assist in developing a sound record (See, 10 C.F.R. § 2.309 (e), as Three Mile island has demonstrated by its participation in numerous NRC proceedings dating back to the 1970's

The standing requirements for Nuclear Regulatory Commission adjudicatory proceedings derive from the Atomic Energy Act which requires the NRC to provide a hearing "upon the request of any person whose interest may be affected by the proceeding."(42 U.S.C. 2239(a)(1)(A).

Pursuant to 10 C.F.R. § 2.309(f), Mr. Epstein and TMI Alert have standing and should be granted leave to intervene because TMIA and its members' "interest[s] may be affected by the proceeding." Those interests will not be adequately represented in this action if Three Mile Island Alert is denied intervention.

B. Eric Epstein' and TMIA's Contentions Meet the Requirements of 10 CFR. § 2.309 and are Admissible.

As shown in this filing per 10 C.F.R. § 2.309(a)., and Mr. Epstein and TMI-Alert's request for a hearing is timely (10 CFR 2.309(b)(1); it is submitted within twenty days of notice in the Federal Register.

Mr. Epstein and TMI-Alert's Petition meets all of the requirements of 10 C.F.R. § 2.309(f). It "se[t]s forth with the particularly the contentions (Contention 1 and Contention 2) sought to be raised (10 C.F.R. § 2.309(f)(1)

and for each contention provides and demonstrates what is required by 10 C.F.R. § 2.309(f)(1)(i-vi). A person whose interest may be affected by a proceeding and who desires to participate as a party."

As required by Section 2.309(f)(i), the basis and facts of each contention provide specific statements of the issues of land and fact raised or controverted.

As required by Section 2.309(f)(ii), each contention provides a brief explanation of the bases for the contention.

10 CFR §2.309(f)(iii) requires that the Petitioner "demonstrate that the issue raised in the contention is within the scope of the proceeding." There can be no doubt that whether a licensee transfer is financially qualified (Contention 1), and whether the NRC can approve a license transfer without the environmental assessment and Environmental Impact Statement requested by Eric Epstein and TMI-Alert and required by NEPA (Contention 2) are within the scope of this proceeding. The Atomic Energy Act and NRC regulations require the Commission to make an independent assessment regarding the proposed transfers in terms of regulatory requirements and the protection of public health and safety and the environment.

Mr. Epstein's Contention 1, that the applicant's License Amendment Request does not provide the required financial assurance or necessary character and integrity that Exelon and FirstEnergy have access to, sufficient funds or requisite corporate character to maintain TMI in a safe defueling condition based upon: 1) FirstEnergy bankruptcy proceeding;

2) The Proposed sale of TMI-2 to Energy Solutions, 3) Investigation into wrongdoing by the Federal Government and the Security and Exchanges Commission; and, 4) The dubious misrepresentation that Exelon can serve as a corporate agent for First Energy. In this license transfer proceeding, the NRC must evaluate the finances , and also Exelon's character and integrity, and decide whether the LAR as proposed, shows they meet NRC financial qualifications regulations. Pacific Gas & Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 & 2), CLI-02-16, 55 NRC 317, 340 (2002),and posses the requite character an integrity to maintain TMI in safe defueling status until 2073.

Contention 2, that the LAR cannot be approved without an updated environmental report based on a thorough environmental assessment performed at the beginning of the decommissioning process as required by the National Environmental Policy Act and 10 CFR. §§ 51.20, 51.70 and 51.10, is plainly within scope also. The Atomic Energy Act and NRC regulations require the Commission to make an independent assessment regarding the proposed transfers in terms of regulatory requirements and the protection of public health and safety and the environment.

Section 2.309(f)(iv) requires a petitioner to "demonstrate that the issue raised in the contention is material to the findings that the NRC must make" to approve the LAR. To approve the License Amendment Request, the NRC must decide whether the environmental impacts of decommissioning are bounded by previuos Environmental Impact Statements.

This issue is material, and is raised in both Contentions 1 and 2. TMI-Alert contends that the old EIS, GEIS, NUREGs and supporting documents relied o by Exelon a nd the NRC fail to cover corporate and financial uncertainty surrounding Exelon and First Energy's relationship, FirstEnergy's proposed a sale to Environmental Solutions, and several site sensitive environmental challenges. The findings that the NRC must make are clearly material to whether the LAR can be approved.

In short, TMI-Alert contentions are material to the outcome of this proceeding. If, as Mr. Epstein contends, the actual facts show that the information in the License Amendment Request is incomplete and misleading, and that the real facts do not ensure that health and safety protections will be available when needed, the NRC cannot properly make the findings that it must make if it is to allow the proposed license transfer amendment. 10 CFR § In this proceeding the NRC must decide whether "the plan as proposed ... will meet [its] financial qualifications regulations," and in doing so the NRC cannot avoid evaluating the "transferee's financial qualifications, ", i.e., Energy Solutions Pacific Gas & Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 & 2), CLI-02-16, 55 NRC 317, 340 (2002).

Similarly, the NRC cannot properly make the necessary findings if, as TMIA contends, the environmental impacts associated with the proposed decommissioning activities are not bounded by previous Environmental Impact Statements.

As required by Section 2.309(f)(v), Mr. Epstein's petition provides concise statements of the facts which support TMIA's position and references to the specific sources and documents upon which it intends to rely in supports of its positions on the issues.

Section 2.309(f)(vi) requires that a petitioner provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. As required, the information set forth in TMIA'a petition and contentions includes references to specific portions of Exelon's License Amendment Request that TMIA disputes and the supporting reasons for each dispute. The petition and contentions also identify numerous instances in which TMI-Alert believes that the Exelon application does not contain information on relevant matters required by law, and the supporting reasons for TMIA's belief.

Mr. Epstein and TMI-Alert's petition meets the requirements of Section 2.309(f), and its contentions are admissible. Mr. Epstein has standing as an area resident with a vested interest in Three Mile Island dating back to 1982. Epstein is entitled to intervene because he: (1) has personal al standing; (2) standing as Chairman of Three Mile Island Alert, Inc.,,. dating back to 1984; and, 3) standing g as a Central Dauphin School District Board Director dating back to 2013.

With respect to each contention, TMIA specifically incorporates by reference, as if fully set forth such contention, all relevant bases, information, facts, sources, documents and other evidence stated with respect to any other contention

II. Contention 1.

Exelon's LAR does not provide financial assurances. It does not demonstrate that either Exelon or FirstEnergy are fiscally responsible, or that either have access to adequate funds for decommissioning, Neither does the LAR address the confused management organization, or where resources will be derived to deal with environmental impacts that would place the public health, safety, and the environment at risk.

1. As discussed in detail below the LAR and PSDAR that Exelon filed with the NRC are misleading and incomplete and are based on incorrect, but important assumptions. They do not present the evidence that would be required for the NRC properly to conclude that there is the level of financial assurance required to meet the regulatory requirements for Exelon, FirstEnergy or Energy Solutions who provided the basis for the contention. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), LBP-82-98, 16 NRC 1459, 1466 (1982).

Consistent with 10 C.F.R. § 2.309(f)(1)(ii), the bases provided are not all of the bases or all the details of the bases which support the contention, but merely "a brief explanation of the basis for the contention."

2. It is well established that TMIA "may rely on alleged inaccuracies and omissions" to challenge a license amendment request.

The Applicant's LAR does not show that either Exelon, or FirstEnergy financially responsible, or that either has or has access to adequate funds for decommissioning.

Neither does the LAR provide any reasonable assurance that Exelon, FirstEnergy, or Energy Solutions have, or will have, the financial resources required to deal with environmental impacts that would place the public health, safety, and the environment at risk.

2. The Atomic Energy Act requires the NRC to ensure protection of public health, safety, and the environment (AEA, Sec. 2(d): The processing and utilization of source, byproduct, and special nuclear material must be regulated in the national interest and in order to provide for the common defense and security and to protect the health and safety of the public.

3. The NRC agrees that a shortfall in decommissioning funding would place public health, safety, and the environment at risk. Financial assurance is critical, and a licensee must ensure that sufficient funds are available throughout the decommissioning process:

The NRC has a statutory duty to protect the public health and safety and the environment. The requirements for financial assurance were issued because inadequate or untimely consideration of decommissioning, specifically in the areas of planning and financial assurance, which could result in significant adverse health, safety and environmental impacts. The requirements are based on extensive studies of the technology, safety, and costs of decommissioning (53 FR 24018). The NRC determined that there are significant radiation hazards associated with non- decommissioned nuclear reactors. The NRC also determined that the public health and safety can best be protected if its regulations require licensees to use methods which provide reasonable assurance that, at the time of termination of operations, adequate funds are available so that

decommissioning can be carried out in a safe and timely manner and that lack of funds does not result in delays that may cause potential health and safety problems (53 FR 24018, 24033).

The purpose of financial assurance is to provide a second line of defense, if the financial operations of the licensee are insufficient, by themselves, to ensure that sufficient funds are available to carry out decommissioning (63 FR 50465, 50473). *In re Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.*, Docket No. 50-271-LA-3, LBP-15-24, at 13 (Aug. 31, 2015), *vacated*, CLI-16-08. 6 NRC, *Questions and Answers on Decommissioning Financial Assurance*, at 1 (ADAMS Accession No. ML111950031).

5. In this proceeding, Exelon and FirstEnergy have not shown that they possess, or will be able to procure, the funds necessary to safely decommission the TMI site. The lack of sufficient funds places Mr. Epstein and and TMI members, and neighboring citizens at risk that these proposed new licensees will deplete the Decommissioning Trust Fund before they have met their decommissioning obligations. Any shortfall in the Decommissioning Trust Fund would put TMIA and its members, and indeed the entire Commonwealth of Pennsylvania, at risk that the site will not be fully radiologically decontaminated.

6. *Entergy*, LBP-15-24, at 22 ("As Vermont states, 'Assuring adequate funds for a reactor owner to meet its decommissioning obligations is part of the bedrock on which NRC has built its judgment of reasonable assurance of adequate protection for the public health and safety and protection of the environment'").

7. The PSDAR and LAR do not contain the information to demonstrate reasonable assurance that sufficient funds are available to properly complete the decommissioning process. Neither do they show the an adequate contingency factor any identification of and justification for using the DCE's key assumptions, required by 10 C.F.R §72.30(b).

8. Exelon and FirstEnergy's Decommissioning Cost Estimate provide essentially no margin for error, and are currently underfunded.

9. Exelon and FirstEnergy's PSDAR and DCE to not include the adequate contingency factor required by 10 CFR §72.30(b)(2)(ii).

10. The proposed LAR is explicitly intertwined with Exelon and First Energy's Post Shutdown Decommissioning Activities Report , including cost estimates for decommissioning, spent fuel management, and site restoration.

11. NRC approval of the License Amendment Request would effectively approve the PSDAR and its financial and environmental analyses and assurance. The PSDARs is material to this proceeding "because it concerns the real-world consequences of approving the [license amendment request]."

Facts Supporting Contention 1.

Fundamental facts underlying Contention 1 are that Exelon and FirstEnergy are not financially qualified, and that neither can provide the required financial assurance. Exelon is experiencing investigations by the Department of Justice and the Security and Exchange Commission. The Company has threatened to shuddered four nuclear plants in Illinois without additional subsides.

FirstEnergy's attempt to devolve environmental cleanup responsibilities was rejected by a federal bankruptcy judge in April, 2019. The Company claims it will be forced to shut Beaver Valley unless the Commonwealth of Pennsylvania bails out the nuclear power plant. FirstEnergy is emerging from bankruptcy and does possess the assets to deal with any contingency challenges at TMI-2.

The LAR Does Not Ensure Sufficient Funds for Decommissioning

(Please refer to Appendix B)

A. Exelon's Cost Estimates incorrectly assume that TMI-1's projected Contingency Allowance is sufficient.

B. Exelon's assertion that there is sufficient money in the DTF incorrectly assumes that decommissioning costs will not rise faster than inflation.

C. Exelon's estimated spent fuel management costs are based on the unlikely and unexplained assumption that DOE will remove all spent fuel by 2073.

D. Exelon s cost estimates are based on the incorrect assumption that the TMI site is essentially "clean."

E. Exelon's cost estimates incorrectly assume radiological occupational and public dose based on outdated documents.
(Please refer to the LAR, pp. 13-16.)

Exelon makes incorrect assumptions and ignores significant facts each of which will result in additional costs, above and beyond the funds available for decommissioning.

As discussed in detail in Appendix B, the License Amendment Request (and the PSDAR and DCE) do not ensure that adequate funds for decommissioning will be available for at least the following reasons.

A. Exelon's Assertion that there is Sufficient Money in the DTF Incorrectly Assumes that Decommissioning Costs Will Not Rise Faster Than Inflation.

TMI-Alert does not say that a decommissioning cost estimate must be exact. But for the NRC regulations and procedures to make any sense at all, a decommissioning cost estimate must be based on reasonable and justifiable assumptions. Exelon and FirstEnergy's assumption that decommissioning costs would not rise faster than inflation was not reasonable or justified. See 10 CFR 72.30(b)(3) that requires "Identification of and justification for using the key assumptions contained in the DCE."

For this reason alone, absent enforceable agreements by Exelon, First Energy, and Energy Solutions, Exelon and FirstEnergy must to provide significant additional financial assurance, such as a large Parent Company Guarantee ("PCG") and agreement to put all recovery from the DOE into the DTF, the License Amendment Request cannot properly be granted.

B. Exelon's estimated spent fuel management costs are based on the unlikely and unexplained assumption that DOE will remove all spent fuel by 2073.

The spent fuel management costs projected in Exelon's PSDAR, and DCE depend on three unexplained and unlikely assumptions: that DOE will remove all spent fuel from TMI-1 site by 2073, Exelon will never have to repair or replace any failed casks or pads, and that Exelon will not have to repackage spent nuclear fuel into new containers approved by DOE for transportation.

All of these assumptions are unjustified DOE strategy is simply "a framework for moving toward a sustainable program to deploy an integrated system capable of transporting, storing, and disposing of used nuclear fuel." (DOE Strategy, p. 1).

Exelon will be required to continue paying ISFSI maintenance and security as long as spent fuel is on site, perhaps indefinitely. Also, the canisters may corrode and leak and are vulnerable to acts of malice, adding considerable costs for mitigation. (See discussion regarding the "Incident Chronology at TMI from NRC: 1979 - 2019" at: 201http://www.tmia.com/node/1832

C. Spent Fuel Management is expensive.

Dry casks might fail, and Exelon will be required every 100 years to replace both the casks and ISFSI storage pad if spent fuel remains on site. The first casks will be 100 years old less than 100 years from now.

Exelon's PSDAR makes unwarranted assumptions about the likely costs, and for this additional reason fails to provide assurance that Exelon or FirstEnergy are financially responsible and will have the funds required for decommissioning and management planning.

Increased costs for overhead and project management. Cleaning up previously unknown radiological or non radiological contamination will delay the work schedule escalating costs. There inevitably will be other delays as there always are in large projects.

D. Historic poor management, releases and contamination have been ignored by Mellon, FirstEnergy and the NRC.

Please refer to the "Incident Chronology at TMI from NRC: 1979 - 2019" at: http://www.tmia.com/node/1832

E. Spent Fuel Pool Accidents Ignored by Exelon.

Fuel Handling Accidents: Accidents can and do happen, even with single-proof cranes. For example, at Vermont Yankee (May, 2008) the brakes on the crane didn't function properly. It almost dropped a load of high-level radioactive waste during the first removal of spent fuel assemblies from the spent fuel pool into a cask for dry cask storage outside

of the plant. According to reports at the time, the brakes on the crane did not respond properly because its electrical relays were "out of adjustment." The cask came within one-and-a-half inches off of the floor, when the operator wanted it to stop four inches above the floor. Another mishap or near-miss failure with a single-proof crane occurred at Palisades in March 18, 2006, attributable to worker error.

Human error, either in operations or manufacturing, is not considered.

Canister Drop in the pool: If a cask is dropped in the pool and the pool floor is breached, there are many safety-related components located on the floors below the spent fuel pool which could be disabled. This scenario could simultaneously initiate an accident and disable accident mitigation equipment. If a hole is punched in the pool floor or walls and water is lost simply to the top of the assemblies, a pool fire will likely follow.
A canister drop can lead to a crack in the canister- especially a concern with HBU fuel.

Causes of Spent Fuel Pool Cooling Water Loss. There are many potential causes of "a significant drawdown of the spent fuel pool." Water could be lost from a spent-fuel pool through leakage, boiling, siphoning, pumping, displacement by objects falling into the pool, or overturning of the pool. These modes of water loss could arise from events, alone or in combination, that include: (i) acts of malice by persons within or outside the plant boundary; (ii) an aircraft impact; (iii) an earthquake; (iv) dropping of a fuel cask; and, (v) accidental fires or explosions.

Partial drain-down: The GEIS did not recognize different consequences of both a full drain-down and a partial drain-down. This is an important omission because total drainage of the pool is not the most severe case of water loss. In a partial drain-down the presence of residual water would block air convection, e.g., by blocking air flow beneath the racks.

Previously, in https://www.nirs.org/press/03-20-2006/ Environmental Impacts of Storing Spent Fuel and High-Level Waste from Commercial Nuclear Reactors: A Critique of NRC's Nuclear Waste Confidence Decision and Environmental Impact Determination, Gordon Thompson, February 6, 2009; Comments on the US Nuclear Regulatory Commission's Draft Consequence Study of a Beyond Design Basis Earthquake Affecting Spent Fuel Pool for a US Mark 1 Boiling Water Reactor, Gordon Thompson, August 1, 2013. NRC staff assumed that a fire would be inevitable if the water fell to the top of the racks.

Pool Fire Ignition Time: NRC Staff and industry today incorrectly claim that that it would take a minimum of 10 hours for the fuel in a boiling water reactor (aged ten months) or in a PWR (aged 16 months) to heat to zirconium ignition temperature; that the 10- hour period "allows for the licensee to take onsite mitigation measures or, if necessary, for offsite authorities to take appropriate response actions using an all-hazards approach emergency management plan."

NRC staff assumes that the minimum delay time for SNF ignition can be calculated by further assuming that an SNF assembly is perfectly insulated thermally. The NRC analysis provides no basis for assuming these assumptions are correct.

High Burnup Fuel ("HBU").

TMI-1 has HBU on site ; yet the NRC is just starting a test to see whether the casks can handle it, with results not in until 2027.

Research shows that under high-burnup conditions, fuel rod cladding may not be relied upon as a key barrier to prevent the escape of radioactivity, especially during prolonged storage in the "dry casks."

High-burnup waste reduces the fuel cladding thickness and a hydrogen-based rust forms on the zirconium metal used for the cladding, which can cause the cladding to become brittle and fail- a costly event.

- In addition, under high-burnup conditions, increased pressure between the uranium fuel pellets in a fuel assembly and the inner wall of the cladding that encloses them causes the cladding to thin and elongate.

- And the same research has shown that high burnup fuel temperatures make the used fuel more vulnerable to damage from handling and transport; cladding can fail when used fuel assemblies are removed from cooling pools, when they are vacuum dried, and when they are placed in storage canisters.

- High burnup spent nuclear fuel is proving to be an impediment to the safe storage and disposal of spent nuclear fuel. For more than a decade, evidence of the negative impacts on fuel cladding and pellets from high burnup has increased, while resolution of these problems remains elusive.

- NRC Meeting Presentation Slides Dry Storage & Transportation of High Burnup, 9/6/18 meeting, slides 14 & 15: NRC said that storage and transportation of HBU is safe, providing no technical bases, for 60 years – no guarantee for longer storage when fuel may still be onsite.

Studies of the consequences of a spent fuel pool fire show huge, potential consequences, ignored by Exelon and the NRC .

- 2016 Princeton Study: A major Spent Fuel Pool fire could contaminate as much as 100,000 square kilometers of land (38,610 square miles) and force the evacuation of millions.

- 2013 NRC Study: A severe Spent Fuel Pool accident would render an area larger than Massachusetts uninhabitable for decades and displace more than four million people.

- 2006 Massachusetts Attorney General Study: A spent fuel fire would cost $488 Billion dollars, cause 24,000 cancers, and make hundreds of miles uninhabitable land.

These facts cannot be ignored. The documents that Exelon relies upon are outdated, and statistically questionable.

Even today, the NRC is ignoring both the vulnerability and severe consequences of spent fuel pools and cask storage. Site Specific analysis of spent fuel incidents are required before approval of the Licensee Amendment Request. Funds for mitigation after a spent fuel accident must be included in cost estimates.

Exelon's License Amendment Request Provides No Assurance that TMI-1 and TMI-2 Have the Funds Necessary to Decommission the ISFSI.

Exelon incorrectly assumes that decommissioning costs will not increase more than inflation. Exelon also expects the Spent Fuel Storage costs will be steady, casks will be certified for transportation, and that a location for the spent fuel will be fund by 2073.

Environmental Impacts of Storing Spent Fuel and High-Level Waste from Commercial Nuclear Reactors: A Critique of NRC's Nuclear Waste Confidence Decision and Environmental Impact Determination, Gordon Thompson, February 6, 2009; Comments on the US Nuclear Regulatory Commission's Draft Consequence Study of a Beyond Design Basis Earthquake Affecting Spent Fuel Pool for a US Mark 1 Boiling Water Reactor, Gordon Thompson, August 1, 2013, pg., 30.)

Presently, First Energy and Exelon's decommissioning trust funds do not provide a basis upon which they could properly provide the required financial assurance.

The License Amendment Request should be denied.

III. Contention 2.

The License Amendment Request Does Not Include the Environmental Report Required by 10 CFR 51.53(d), and has Not Undergone the Environmental Review Required by the National Environmental Policy Act.

1. Mr. Epstein specifically incorporates by reference, as is fully set forth here, all facts supporting Contention 2 and all Bases for and Facts Supporting Contention

2. The National Environmental Policy Act (NEPA) requires that a NEPA analysis be performed. The NRC responsibilities under NEPA are triggered by the fact that a federal agency "has actual power to control the project." *Ross v. Fed. Highway Admin.*, 162 F.3d 1046, 1051 (10thCir. 1998). The NRC clearly has "actual power to control" the requested license transfer.

> "[P]ermitting Exelon and FirstEnergy] to decommission the facility" requires NEPA review. *Citizens Awareness Network, Inc. v. Nuclear Regulatory Comm'n,* 59 F.3d 284, 293 (1st Cir. 1995). "[R]egardless of the label the [Nuclear Regulatory] Commission places on its decision," the NRC "cannot t skirt NEPA or other statutory commands by essentially exempting a licensee from regulatory compliance, and then simply labelling its decision 'mere oversight' rather than a major federal action. To do so is manifestly arbitrary and capricious." *Id.*

3. NRC requires Environmental Impact Statements for major federal actions. Approval of Exelon's LAR proposal as a whole would constitute a major federal action.

NEPA requires federal agencies to prepare an Environmental Impact Statement for every "major federal action significantly affecting the quality of the human environment." 42 U.S.C 4332(2)(c); accord 10 C.F.R. 51.20 (a)(1). As discussed above with respect to Contention 1, and as shown in the Facts Supporting Contention 2 below, Holtec's actions will affect the quality of the environment.

40 C.F.R. § 1508.18 defines *major* federal actions as "actions with effects that *may* be major and which *are potentially subject to Federal control and responsibility*," including "[a]pproval of specific projects" or other instances where regulatory approval is necessary to a licensee's actions." The License Amendment Request has effects that "may be major," is potentially subject to [NRC] control. The LAR also requires "regulatory approval."

The D.C. Circuit Court of Appeals has held that a federal action is involved, "whenever an agency makes a decision which permits action by other parties which will affect the quality of the environment." *Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1088 (D.C. Cir. 1973). Consistently, the 9th Circuit has held that because the NRC has "mandatory obligation to review" Exelon and FirstEnergy's plans, the NRC's "failure to disapprove" of those plans would constitutes "major federal action" triggering NEPA review. *Ramsey v. Kantor*, 96 F.3d 434, 445 (9th Cir. 1996).

4. A NEPA review is required if there is a potential environmental impact. The mere "possibility of a problem" requires the NRC "to evaluate seriously the risk" that this problem will occur, and what environmental consequences would ensue in those circumstances. *Id.*, U.S.C. § 4332(2)(C); *see also, e.g.*, *Blue Mountains*, 161 F.3d at 1211.

Even if the proposed License Amendment Request might not have any environmental impacts, the *possibility* of significant environmental impacts precludes a FONSI and triggers the need for an Environmental Impact Statement.

NEPA explicitly requires an Environmental Impact Statement if an action has "effects that *may be* major and which are *potentially* subject to Federal control and responsibility." C.F.R. § 1508.18. A "potential" significant effect suffices. *San Luis Obispo Mothers for Peace,* 449 F.3d at 1030. "[W]hen the determination that a significant impact will or will not result from the proposed action is a close call, an [environmental impact statement] should be prepared." *National Audubon Soc. v. Hoffman,* 132 F.3d 7, 13 (2d. Cir. 1997) (reversing a decision by the U.S. Forest Service not to prepare an environmental impact statement because the Forest Service failed to consider the possible effects of the challenged action). Agencies should "err in favor of preparation of an environmental impact statement." *Id.* at 18.

An Environmental Impact Statement is required if the agency's review shows a "substantial possibility" that the project or action "may have a significant impact on the environment." *Id.* at 18. It is only when the NRC's action "*will not* have a significant effect on the human environment" that an Environmental Impact Statement is not required. *Id.* at 13.

5. NEPA requires a comprehensive environmental review. The NRC is required to take a "hard look" at the potential environmental consequences of Exelon's proposed action. *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983). The required NEPA analysis must be comprehensive and address all "potential environmental effects," unless those effects are so unlikely as to be "remote and highly speculative." *San Luis Obispo Mothers for Peace v. NRC,* 449 F.3d 1016, 1030 (9th Cir. 2006).

"Ignoring possible environmental consequences will not suffice." *Found. on Econ. Trends v. Heckler*, 756 F.2d 143, 154 (D.C. Cir. 1985). The potential effects of TMI's decommissioning (including operation of the ISFSI during the many years before it might be decommissioned) are neither remote or highly speculative; and they cannot be ignored.

6. NRC regulations require an Environmental Impact Statement. Under 10 C.F.R. §§ 51.53(d), every applicant for a "license amendment approving a license termination plan or decommissioning plan ... shall submit with its application a separate document, entitled 'Supplement to Applicant's Environmental Report— Post Operating License Stage,' which will update 'Applicant's Environmental Report—Operating License Stage,' as appropriate, to reflect any new information or significant environmental change associated with the applicant's proposed decommissioning activities or with the applicant's proposed activities with respect to the planned storage of spent fuel."

7. An environmental analysis is an important part of the NRC's review. An Environmental Assessment helps an agency determine whether the proposed action is significant enough to require preparation of an Environmental Impact Statement. *Marsh v. Or. Natural Resources Council*, 490 U.S. 360, 371 (1989). license pursuant to part 72 of this chapter" would then be "for the storage of spent fuel in an independent spent fuel storage installation at a site not occupied by a nuclear power reactor."

The NRC has recognized the value of a comprehensive NEPA analysis: "While NEPA does not require agencies to select particular options, it is intended to foster both informed decision-making and informed public participation, and thus to ensure that the agency does not act upon incomplete information, only to regret its decision after it is too late to correct." (*In re Duke Energy Corporation (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units and 2*), CLI-02-17, 56 N.R.C. 1, 10 (2002).

An Environmental Impact Statement "insures the integrity of the agency process by forcing it to face those stubborn, difficult to answer objections without ignoring them or sweeping them under the rug" and serves as an "environmental full disclosure law so that the public can weigh a project's benefits against its environmental costs." *National Audubon Soc.*, 132 F.3d at 12 (citing *Sierra Club v. United States Army Corps of Eng'rs*, 772 F.2d 1043, 1049 (2d. Cir. 1985). The procedures of NEPA serve a "vital purpose" that "can be achieved only if the prescribed procedures are faithfully followed." (*Lathan v. Brinegar*, 506 F.2d 677, 693 (9th Cir.1974).

8. The NRC cannot issue a Finding of No Significant Impact ("FONSI") without first evaluating all the evidence. The NRC can issue a FONSI only if it reasonably determines, based on an evaluation of all the evidence, that its action "will not have a significant effect on the human environment." (40 C.F.R. § 1508.13) A FONSI must include "a convincing statement of reasons to explain why a project's impacts are insignificant. *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998). *See also Citizens Against Toxic Sprays, Inc. v. Bergland*, 428 F.

Supp. 908, 927 (D. Or. 1977) ("No subject to be covered by an [environmental impact statement] can be more important than the potential effects of a federal [action] upon the health of human beings [and the environment]."); *Maryland-Nat'l Capital Park & Planning Comm'n v. U.S. Postal Service*, 487 F.2d 1029, 1039-40 (D.C. Cir. 1973) (agency must consider "genuine issues as to health" before deciding whether to prepare an Environmental Impact Statement).

If the agency determines that a full Environmental Impact Statement is not necessary, the agency must then prepare a FONSI "sufficiently explaining why the proposed action will not have a significant environmental impact." 40 C.F.R. § 1501.4; *id.* § 1508.14; *New York v. NRC I*, 681 F.3d 471, 477 (D.C. Cir. 2012).

Facts Supporting Contention 2:

Three Mile Island Alert, Inc. specifically incorporates, as if fully set forth here, the Bases of Contention 1, the Facts Supporting Contention 1, and the Bases of Contention 2.

Contention 2.

As shown above, NEPA and NRC Regulations require an Environmental Impact Statement. The actual facts here make clear that prior environmental statements do not include, and that neither Exelon nor the NRC knows, the actual conditions at Three Mile Island.

Other facts supporting at least one of Contention 1 and Contention 2 include the following:

Three Mile Island is located on the Susquehanna River in the heart of the lower Susquehanna River watershed, which empties into the Chesapeake Bay. The plant is located near three national tourist locations: The Gettysburg National Military Park, Hershey Chocolate, and Lancaster County. Its location puts a premium on an early site assessment and NEPA analysis .

1. Three Mile Island is located on an island in the middle of the Susquehanna River.

2) Due to the topography of the site, contaminants will leak into the Susquehanna River.

"The Susquehanna River Basin is one of the most flood-prone watersheds in the nation – experiencing damages in excess of $150 million on average every year. More than 80 percent of the basin's 1,400 plus municipalities have areas that are flood prone. While a number of flood damage reduction projects are in place to protect the basin's citizens, studies have determined the best way to further reduce flood damages in the Susquehanna basin is through nonstructural measures such as flood forecast and warning systems." (Susquehanna River Basin Commission.)

Severe storms and flooding can result in loss of offsite power and potential damage to nuclear generating stations.

Exelon does not discuss a flood warning system in their LAR and PSDAR filings. https://www.nrc.gov/docs/ML1918/ML19182A182.pdf

The risks associated with flooding of nuclear plants listed below are based on research from "Flood Hazard for Nuclear Power Plants on Coastal and River Sites Safety Guide," "Nuclear Reactor Hazards: Ongoing Dangers of Operating Nuclear Technology in the 21st Century", and "The Nuclear Monitor: Special Edition on flooding and Nuclear Power Plants."

• Flooding can facilitate the dispersion of radioactive material to the environment including TMI-2's accident generated water and residual cork seam leakage.

• The presence of water in many areas may be a common cause of failure for safety related systems, such as the emergency power supply systems or the electric switchyard, with the associated possibility of losing the external connection to the electrical power grid, the decay heat removal system, and other vital systems.

• Considerable damage can be caused to safety related structures, systems and components by the infiltration of water into internal areas of the plant. Water pressure on walls and foundations may challenge their structural capacity. Moreover, the City of Harrisburg is under capacity and undergoing a storm water retrofit. Currently, up to 47% of the City untreated water flows downstream to TMI.

• The dynamic effect of the water can be damaging to the structure and the foundations of the plant which were constructed prior to 1974 as well as the many systems and components located outside owner protected areas.

• A flood may transport ice floes in very cold weather or debris similar to that from Hurricane Agnes (1972) and Hurricane Eloise (1977) that may physically damage structures, obstruct water intakes or damage the water drainage system.

• Flooding may affect the communication and transport networks around the plant site including, but not limited to Conrail, the Harrisburg International Airport Route 443, and the Pennsylvania Turnpike. The effects may jeopardize the implementation of safety related measures and emergency planning by making escape routes impassable and isolating the plant site in a possible emergency, with consequent difficulties in communication and supply.

5. TMI's previous Environmental Impact Statements do not adequately consider the possibility of site-specific impacts resulting from the plant's close proximity to residential neighborhoods (and potential airborne asbestos and lead contamination, as well as potential impacts from a radiological incident or radiological dispersion during demolition work and disruption of soils).

6. The Susquehanna River is the source of water for the City of Lancaster, thousands of acres of farmland, and it supports many natural resources.

7. A site assessment at Three Mile Island would provide new and important information that is not included in previously issued Environmental Impact Statements, and that would show that previously issued Environmental Impact Statements are "grandfathered", incomplete, and outdated.

8. NEPA explicitly requires an Environmental Impact Statement if an action such as a license transfer has "effects that *may be* major and which are *potentially* subject to Federal control and responsibility."

TMI's History of Spills, Leaks,and,Mismanagement Requires Site Assessment and NEPA

Please refer to Exhibit, #7 as well as the "Incident Chronology at TMI from NRC: 1979 - 2019," at: http://www.tmia.com/node/1832

Flooding.

Please refer to earlier discussion In Contention 1.

Tritium and Other Radionuclides in Groundwater.

Please refer to earlier discussion in Contentions 1 and 2.

Spent Fuel Unlikely to Leave Site by 2073.

Please refer to earlier discussion in Contentions 1 and 2.

Radiological Accidents.

Please refer to earlier discussion in Contention 1 and 2.

Spent Fuel Pool Accidents Ignored Exelon.

Please refer to earlier discussion in Contentions 1 and 2.

ISFI Accidents Accidents are ignored in GEIS, PSDAR, and SEIS.

Please refer to earlier discussion in Contentions 1 and 2.

Vulnerability Pools and ISFSI to Acts of Malice.

Please refer to earlier discussion in Contentions 1 and 2.

Consequences of a spent fuel pool fire or cask rupture.

Please refer to earlier discussion in Contentions 1 and 2.

Exelon's LAR and previous Environmental Impact Statements ignore potential costs from fires in structures, systems and components containing radioactive and hazardous material.

Please refer to earlier discussion in Contentions 1 and 2.

High Burnup Fuel.

Please refer to earlier discussion in Contentions 1 and 2.

Without a new site assessment & NEPA analysis, we cannot determine what contamination needs remediation and what measures must be taken to mitigate future contamination.

Please refer to earlier discussion in Contentions 1 and 2.

A lack of sufficient funds to carry out decommissioning could result in significant adverse health, safety and environmental impacts, and would increase the need for an updated site assessment and Environmental Impact Statement.

Please refer to earlier discussion in Contentions 1 and 2.

An updated site analysis or Environmental Impact Statement would show and confirm that decommissioning costs will rise faster than inflation.

Please refer to earlier discussion in Contention 1 and 2.

An updated site analysis or Environmental Impact Statement would show and confirm that Exelon and First Energy do not have sufficient financial assets.

Please refer to earlier discussion in Contention 1 and 2.

An updated site analysis or Environmental Impact Statement would show and confirm that Exelon and First Energy have not considered potential significant costs.

V. Conclusion.

For the reasons stated, Eric Epstein and Three Mile Island Alert, Inc. should be granted standing, its Contentions should be admitted, and Exelon License Amend Request Application should be denied.

Respectfully submitted,

Eric Epstein, Chairman
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Dated: November 12, 2019

Certification of Service List

Appendix, A: Declarations .

Appendix: B: Three Mile Island Alert, Inc.'s Opposition to Exelon's Request for Exemptions Relating to Three Mile Island Unit-1's Decommissioning Trust Funds.

Exhibit 1: Cleanup Problems at TMI-2

Exhibit 2: County Voting Machine Costs.

Exhibit 3: Critique of License Amendment Request.

Exhibit 4: Emergency Planning Deficiencies.

Exhibit 5: Structures, Systems, or Components .

Exhibit 6 High Burnup Fuel.

Exhibit 7: Leaks, release & exposures at TMI.