THREE MILE ISLAND ALERT

Subject: Three Mile Island Nuclear Station, Unit 1
Shutdown Decommissioning Activities Report
Renewed Facility Operating License No. DPR 50
NRC Docket No. 50-289
10 CFR 50.82(a)(4)

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

July 22, 2019

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Introduction

Exelon Generation Company, LLC ("Exelon" or "the Company") is requesting an exemption from 10 CFR 50.82(a)(8)(i)(A) for Three Mile Island Nuclear Station, Unit 1, ("TMI-1") to allow use of a portion of the funds from the TMl-1 decommissioning trust fund ("DTF") for the management of spent fuel based on the TMl-1 decommissioning cost estimate ("DCE".) [See Enclosure 1 for a discussion on the unreliability of decontamination and decommissioning estimates at Three Mile Island.] Exelon also requests, pursuant to 10 CFR 50.12, an exemption from 10 CFR 50. 75(h) (1) (iv) to allow TMl-1 DTF disbursements for spent fuel management to be made without prior notice, similar to withdrawals in accordance with 10 CFR 50.82(a)(8).

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TMI-Alert ("TMIA") (Enclosure 2) opposes raiding ratepayer funds to subsidize a core function of nuclear power plant operations. Every nuclear plant in Pennsylvania– with the exception of Three Mile Island - has used corporate funds to construct spent fuel dry casks including Beaver Valley Power Station ("Beaver Valley"), Limerick Generating Station ("Limerick"), Peach Bottom Atomic Power Station ("Peach Bottom"), and Susquehanna Steam Electric Station ("Susquehanna").

Exelon has intentionally delayed dry cask construction to provoke a radioactive waste crisis. Exelon, at peril to the community, is exploiting the situation to raid hostage ratepayers' contributions.

Exelon is requesting to subvert it's own precedent at Limerick and Peach Bottom where the company paid to construct dry cask storage facilities. (Refer to Enclosure 3.) **The decommissioning trust funds are segregated and separated to prevent co-mingling. The NRC does not have ratemaking authority to compel Exelon to raise supplemental funds for the DTF when the plant is no longer operating.**

This request fails to address, consider, or discuss the impact of Exelon's request on federal and state laws, negotiated settlements, public policies, and regulatory restraints:

1) The license will likely be transferred to a Limited Liability Corporation per Exelon's model at Oyster Creek (Refer to discussion on pp. 22-23); (Enclosure 4);

2) The NRC does not regulate rates in the Commonwealth of Pennsylvania. The Decommissioning Trust Funds ("DTF") are not the property of the NRC. (Enclosure 5);

3) The proposal lacks accountability and transparency and violates Pa Title 66 ¶ "Transition or stranded costs." § 2803. (1) & (3) (ii); §2804. Standards for restructuring of electric industry. (F) §2808. Competitive transition charge. (b) Period for collecting Competitive Transition Costs. (b) Determination of competitive transition charge(c)(1), and Chapter ¶69.1 & 69. 206 Inventory Management (Enclosure 6); and,

(4) The request represents a double-dipping of rate payer monies from the DTF. Exelon has received at least $300 million from the Department of Treasury ("DOT") as a result of Nuclear Waste Trust Fund Settlement. Exelon will continue to be reimbursed by the Department of Energy ("DOE") during TMI's decommissioning. (1) (Enclosure 7)

10 CFR 50.82{a)(8)(i)(A) states that DTFs "may be used by licensees if ... [t]he withdrawals are for expenses for legitimate decommissioning activities consistent with the definition of decommissioning in§ 50.2." The definition of decommissioning in 10 CFR 50.2 pertains to safely removing a facility from service and reducing residual radioactivity for eventual property release (i.e., radiological decommissioning).

The NRC does not construe the 10 CFR 50.2 definition of "decommissioning" to include activities associated with spent fuel management. This is black letter federal law that Exelon acknowledges, and has made provisions for in their 2017 Annual Report, p. 110, and 2018 Annual Report, p. 85. (Enclosure 8.)

10 CFR 50.75(h)(1)(iv) similarly requires that trust agreements **restrict disbursements** (other than for ordinary administrative and other incidental expenses of the fund) to those allowed under Section 50.82(a)(8), and requires a **30-day advance notification** to the NRC prior to making disbursements for expenses not covered under Section 5.82(a)(8).

1 The Settlement Agreement between the U.S. Department of Energy and Exelon Generation Company, LLC (including AmerGen Energy Company), was signed and executed August 5, 2004, as amended by the Addendum to the Settlement Agreement signed May 4, 2009. Three Mile Island'1's license was transferred from AmerGen to Exelon in 2004. AmerGen ceased to exist a corporate entity in 2009.

These protections are in place to prevent questionable and risky transfers, and to compel Exelon to abide by the Atomic Energy Act. The need for such oversight was reinforced by the GAO's Investigation: NRC's Oversight of Nuclear Power Decommissioning Funds Could Be Further Strengthened This report included a review of Three Mile Island. (Enclosure 9.)

Exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) are required for spent fuel management activities.

Exelon's cost estimate provided in PSDAR, Reference 1 discusses estimated costs associated with radiological decommissioning and spent fuel management based on "**minimum savings" amounts.**

However, Exelon's data undermines its assertion in the PSDAR. **The data Exelon provided to the NRC is inconsistent and omits information contained in SEC filings and Exelon's 2017 and 2018 Annul Reports.** Refer to discussions under "Nuclear Waste Storage and Disposal," "Nuclear Insurance," "Decommissioning," "Asset Retirement Obligations," "NRC Minimum Funding Requirements," and "Asset Retirement Obligations." (Enclosure 8.)

Specifically, refer to Discussions in Exelon's 2017 Annual Report, pp. 109-110, p. 204, pp. 240-244, and pp. 271-275, and Exelon's 2018 Annual Report, p. 85, pp. 191-195, and p. 224. (Enclosure 8.)

Please pay special attention to the criteria used by Generation to determine the ARO, and to forecast the target growth in NDT funds in 2017 and 2018.

Moreover, Exelon has severed its decommissioning consulting relationship with TLG for external and independent audits. There is no financial firewall in place to provide independent data relating to Exelon's Post-Shutdown Decommissioning Activities Report ("PSDAR") filings.

"Exelon maintains two separate trusts for this purpose, a tax qualified fund ("Qualified Trust") and a non-tax qualified fund ("Non-Qualified Trust"). The trustee for both funds is Northern Trust Bank. As of December 31, 2018, the DTF has a total balance of **$669,617,000**. The inadequacy of these funds to cover the **minimal amount projected** for non-radiological decommissioning and Greenfield costs is shown in Table 2.2., and these funds are exposed to changing tax protocols.

"When asked by a member of the public why the approximately $670 million in the fund as of December does not seem to cover the cost estimates of more than $1 billion for decommissioning, about $158 million for fuel management and about $86 million for site restoration, officials said funds would continue to accrue over many years." ("York Dispatch," July, 18, 2019.)

By its own admission in the Post-Shutdown Decommissioning Activities Report ("PSDAR"), Exelon's projections are based on low-end estimates, i.e., "minimal savings", which are in turn contingent on guestimates of future economic behaviors.

The bedrock "scientific" assumptions can be found in the PSDAR, pages 12-23. If licensees chose to use the proposed alternative approach, some SSC's of "low safety significance" might only require normal industrial or commercial-grade regulatory controls. (NRC, February 22, 2000.) However, **it is assumed that radioactive contamination on Structures Systems and Component ("SSC") surfaces will not have decayed to levels that will permit unrestricted release under DECON.** (PSDAR, April 5, 2019, Exelon Generation, LLC., pp. 10-11).

Neither Exelon or the NRC have defined "unrestricted use." TMI has been the location of a functioning industrial complex since 1974. **Projecting funding levels based on ill defined standards is a prescription for underfunding.**

After the NRC terminates the license, site restoration (another term without a clear definition) will cost approximately $86 million and is not adequately funded. The metrics for the final site status is unknown, and no NRC oversight is required. Exelon acknowledges throughout the PSDAR that site restoration will be performed at Exelon's discretion.

> "Exelon currently assumes that remaining structures will be removed to a nominal depth of three feet below the surrounding grade level. Affected area(s) would then be backfilled with suitable fill materials, graded, and appropriate erosion controls established [proximate to the Susquehanna River.] Non-contaminated concrete remaining after the demolition activities may be used for backfilling subsurface voids or may be transported to an offsite area for appropriate disposal as construction debris." (PSDAR, p. 14. Refer to discussion on pp. 12-13.)

Exelon has no funds to carry out post-termination obligations. In addition, the Company's Asset Retirement Obligations ("ARO") have increased steadily since 2016. (Exelon Annual Report, 2017 and Exelon Annual Report, 2018.)

Prior to raiding the DTF, there is gap between savings' balance - $669,617,000 – and the "minimal amount" - $1,001,552,000 – or the amount to partially clean-up TMI-1.

"The 10 CFR 50.75(c) minimum formula amount for TMl-1 as of December 31, 2018 is **$493,028,000**. As indicated in Table 2.2, the **estimated cost** of radiological decommissioning at TMl-1 is **$1,001,552,000. There is no enforcement mechanism available to the NRC to compel Exelon to make up the $331,935,000 shortfall when the plant is no longer operating.**

In accordance with Regulatory Guide 1.185 (PSDAR, Reference 1), the site-specific DCE minimum formula amount," **is inadequate to fund the "medium" or "maximum" amount for decommissioning. The DTF fails to factor inflation, cyclical recessionary pressures, and real-life economic variables.** (Refer to discussion on pp. 12-13.)

Furthermore, these projections conflict with Exelon's costs as submitted in their Security and Exchange filings (Enclosure 9), and do not include the cost of Greenfield and non-radiological decommissioning, e.g., site-restoration, caustic, chemical, and effluent monitoring, earthquakes, emergency planning outside of the fence line, flooding, ice jams, on-site fire protection, hardened security for dry casks and spent fuel pools, State-of-the-Art Reactor Consequence Analyses ("SOARCA") scenarios, or implementation of a no-fly zone.

The Nuclear Regulatory Commission admits: "NRC decommissioning trust funds [**contributions derived from Pennsylvania Public Utility Commission tariffs**] are used for decommissioning as defined and regulated by the NRC. The NRC formulas address only those decommissioning costs needed to remove a facility or site safely from service and reduce radioactivity to safe levels to allow for termination of the license."

> **"...the costs of removal of non-radiological systems and structures are not included in the NRC decommissioning cost formulas. In addition, the costs of managing and storing spent fuel on site until transfer to the Department of Energy for permanent disposal are not included in NRC decommissioning cost formulas. The NRC does not ensure that there are sufficient funds to bring a site to Greenfield status.**" (Communication Strategy for the Enhancement of Public Awareness Regarding Power Reactors Transitioning to Decommissioning, February, 2015.)

10 CFR 50.82(a)(6)(iii) states that, "**Licensees shall not perform any decommissioning activities," as defined in 10 CFR 50.2; that, "Result in there no longer being reasonable assurance that adequate funds will be available for decommissioning." Exelon's exemption request would jeopardize the availability of adequate funds for the completion of decommissioning.**

Three Mile Island Nuclear Station - Unit 1
Request for Exemption from 10 CFR 50.82(a)(8)(i)(A)
and 10 CFR 50.75(h)(1)(iv)
Specific Exemption Request Should Be Denied.

Pursuant to 10 CFR 50.12, "Specific exemptions," Exelon Generation Company, LLC (Exelon) requests an exemption from 10 CFR 50.82(a)(8)(i)(A) for Three Mile Island Nuclear Station, Unit 1 (TMI-1) **to allow use of a portion of the funds from the TMI-1 decommissioning trust funds (DTF) for the management of spent fuel activities**. Exelon also requests, pursuant to 10 CFR 50.12, **an exemption from 10 CFR 50.75(h)(1)(iv) to allow DTF disbursements for spent fuel management activities to be made without prior notice**, similar to withdrawals in accordance with 10 CFR 50.82(a)(8).

Section (a)(B)(i)(A) of 10 CFR 50.82, "Termination of license," states the following:

> Decommissioning trust funds may be used by licensees if-- (A) The withdrawals are for expenses for legitimate decommissioning activities consistent with the definition of decommissioning in § 50.2.

Section (h)(1)(iv) of 10 CFR 50.75, "Reporting and recordkeeping for decommissioning planning," states, in part:

> Except for withdrawals being made under§ 50.82(a)(8) or for payments of ordinary administrative costs (including taxes) and other incidental expenses of the fund (including legal, accounting, actuarial, and trustee expenses) in connection with the operation of the fund, no disbursement or payment may be made from the trust, escrow account, Government fund, or other account used to segregate and manage the funds until written notice of the intention to make a disbursement or payment has been given to the Director, Office of Nuclear Reactor Regulation, Director, Office of New Reactors, or Director, Office of Nuclear Material Safety and Safeguards, as applicable, **at least 30 working days before the date of the intended disbursement or payment.**

Section (h)(1)(iv) of 10 CFR 50.75 also states, in part:

Disbursements or payments from the trust, escrow account, Government fund, or other account used to segregate and manage the funds, other than for payment of ordinary administrative costs (including taxes) and other incidental expenses of the fund (including legal, accounting, actuarial, and trustee expenses) in connection with the operation of the fund, are restricted to decommissioning expenses or transfer to another financial assurance method acceptable under paragraph (e) of this section until final decommissioning has been completed. After decommissioning has begun and withdrawals from the decommissioning fund are made under § 50.82(a)(8), no further notification need be made to the NRC.

The 10 CFR 50.2, "Definitions," contains the following definition of "decommission:"

> ... to remove a facility or site safely from service and reduce residual radioactivity to a level that permits - (1) Release of the property for unrestricted use and termination of the license; or (2) Release of the property under restricted conditions and termination of the license.

The NRC construes the definition of "decommissioning" in 10 CFR 50.2 as not including activities associated with spent fuel management.

TMI-Alert concurs with the NRC's conclusion that 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) prohibit use of DTFs for activities related to spent fuel management prior to completion of radiological decommissioning.

TMIA recommends that the NRC implement lessons learned from Post Defueling Monitored Storage ("PDMS") at Three Mile Island Unit-2 ("TMI-2"), and move TMI-1 into DECON immediately.

SAFSTOR, Exelon's preferred delayed cleanup option, was adopted at Three Mile Island Unit (TMI-2), and referred to as Post-Defueling Monitored Storage ("PDMS".) The owner of TMI-2, GPU Nuclear ("GPU") stated that this strategy would allow radioactive decay to occur; thereby reducing the quantity of contamination and radioactivity that must be disposed of during the decontamination and dismantlement process as well as reducing the associated occupational exposure. (Enclosure 10)

TMI-Advisory Panel member Joel Roth observed:

> "The Company had a difficult time finding the money to initially clean the plant up [the Thornburgh Plan bailed GPU out for $987 million to defuel TMI-2] and is now going to face the those same steep costs again when it shuts the facility. We want some guarantees that down the road they will have a billion dollars to finish its cleanup. Their word is simply not enough."

On November 27, 1988, Frank Standerfer, GPU Vice President, stated to the TMI-Advisory Panel that "they [Licensee] will not have a problem finding funds to shut both reactors in the next century."

GPU agreed to transition from PDMS/SAFSTOR to DECON in 2008. The fuel from TMI-2 was transferred from the site to the Department of Energy's Independent Spent Fuel Storage Installation where it is being stored **"temporarily."** (2)

However, 31 years after the pledge to place move TMI-2 into DECON, the crippled reactor remains in SAFSTOR. TMI-2 is also a case study on the unreliability of decommissioning cost projections at Three Mile Island.

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2 As outlined in Section 1.21, DOE-ID has prepared a LRA in accordance with applicable requirements in of the Code of Federal Regulations and the guidance contained in the Nuclear Regulatory Commission (NRC) Technical Report (NUREG-1927) [1.4.4] [1.4.5.] This application supports license renewal for an additional 20-year period beyond the end of the current license term of the Special Nuclear Materials (SNM) License Number SNM-2508, (Docket No., 72-20) [1.4.1]

In their 1997 Annual Report, GPU reported that the cost to decommission TMI-2 doubled in four years. The original $200 million projection has been increased to $399 million for radioactive decommissioning. An additional $34 million will be needed for non-radiological decommissioning. The new funding "target" is $433 million; or a 110% increase in just 48 months.

On December 31, 2007, the TMI-2 site summary on the NRC website on the decommissioning cost estimate and funds stated: "The current radiological decommissioning cost estimate is $805 million.

By September 30, 2010, according to the NRC, "The current radiological decommissioning cost estimate is $831.5 million. The current amount in the decommissioning trust fund is $484.5 million, as of December 31, 2008."

The current price to decommission TMI-2 - according to the NRC - is $1.26 billion as of March 26, 2018. The trust fund balance is $834,857.14 or $365,143,000 below the "minimal level" needed to cleanup TMI-2.

As of this filing, TMI-2 has not been decontaminated or decommissioned. Delaying the cleanup of TMI-1 will relegate TMI-2 to continue to serve as a high-level radioactive waste site until 2075.

TMI-Alert strongly opposes exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) requested by Exelon to withdraw and use funds from the DTF for spent fuel management activities. The DTF contains inadequate funds to complete radiological decommissioning as well as spent fuel management activities and site restoration to Greenfield. These proposed exemptions – if granted -would present an undue risk to the public health and safety and prevent decommissioning from being completed as planned.

The NRC decommissioning trust funds are used for decommissioning as defined and regulated by the NRC. The NRC formulas address only those decommissioning costs needed to remove a facility or site safely from service and reduce radioactivity to safe levels to allow for termination of the license.

The NRC maintains "**...the costs of removal of non-radiological systems and structures are not included in the NRC decommissioning cost formulas. In addition, the costs of managing and storing spent fuel on-site until transfer to the Department of Energy for permanent disposal are not included in NRC decommissioning cost formulas. The NRC does not ensure that there are sufficient funds to bring a site to Greenfield status.**" (Communication Strategy for the Enhancement of Public Awareness Regarding Power Reactors Transitioning to Decommissioning, February, 2015.)

Among the factors **excluded** from Exelon's calculations and the NRC's guidelines:

- Absence of regional labor costs, compensatory costs and measures for the loss of institutional knowledge, and, replacement costs for highly skilled labor tasks with plant-specific knowledge. (Refer to PSDAR.)

According to the NRC, Exelon has plan in place: " Exelon will be required to have a competent technical staff to ensure the plant is maintained in a safe and secure condition until the license it terminated." (NRC Webinar, July 16, 2019. Responses to Eric Epstein, July 19, 2019.)

- Aging, corrosion and embrittlement have yet to be analyzed, costed-out or discussed in detail. (Refer to PSDAR.)

- Federal monetary policy regarding interest rates, and changing tax protocols relating to decommissioning funds.

Refer to Webinar. No responses filed in the July 19, 2019 communication. . The NRC stated: "We'll have to get back to you on the financial questions as our experts in that area are out today."

• Escalated values attached for security costs for transportation, and dry cask construction near an international airport. (Refer to PSDAR.)

• Flawed assumptions and absence of values for inflation, stagflation, recession cycles or state and federal regulatory protocols relating to Chesapeake Bay remediation, site runoff, and storm water fees per the Clean Water Act and Municipal Stormwater ("MS4") mandates. (Refer to PSDAR.)

Refer to Webinar. No responses filed in the July 19, 2019 communication. The NRC stated: "We'll have to get back to you on the financial questions as our experts in that area are out today."

• Generic, boiler plate economic formulas not adjusted for local, regional or state factors. (Refer to RSDAR.)

• Impact of tariffs on aluminum, iron, and steel costs. (Refer to PSDAR.)

• Legality and availability of interim and permanent spent fuel storage. (Refer to Webinar.)

• No plan in place to store or utilize institutional memory storage

The NRC stated, "Exelon will be required to have a competent technical staff to ensure the plant is maintained in a safe and secure condition until the license it terminated." (Responses to Eric Epstein filed on July 19, 2019.)

• Plans for the availability of hazardous waste, mixed waste, and toxic waste disposal per Three Mile Island's regulatory obligations with the Pennsylvania Department of Environmental Protection. (Refer to PSDAR. Site fees, locations, and storage capacities have not been identified.)

• Projections of the impact of fleet or national nuclear retirements occurring simultaneously. (Refer to PSDAR.)

• Planning for unrestricted release from regulatory control, after buildings have been demolished and no further redevelopment is planned does not exist. (Refer to PSDAR and Webinar.)

The NRC's response to Mr. Epstein on July, 19, 2019 acknowledges **Exelon's reliance on a "no-plan plan."** The NRC said: "Exelon has submitted the Post-Shutdown Decommissioning Activities Report (PSDAR). It is a high-level decommissioning plan that provides its decommissioning strategy for the Three Mile Island 1 nuclear power plant and a schedule. **NRC regulations do not require Exelon to provide a detailed decommissioning plan -- known as a License Termination Plan -- until two years before it requests license termination.** In the interim period, Exelon will conduct decommissioning activities under the 50.59 safety evaluation process. NUREG 1700, "Reactor Decommissioning Standard Review Plans for License Termination Plans (LTP)", is a good reference to see the types of information Exelon will need to submit in the LTP.

Background.

By letter dated June 20, 2017, pursuant to 10 CFR 50.82(a)(1)(i), Exelon notified the U.S. Nuclear Regulatory Commission (NRC) of its intention to permanently cease power operations at TMl-1 by September 30, 2019. Once fuel has been permanently removed from the reactor vessel, Exelon will submit a written certification to the NRC, in accordance with 10 CFR 50.82(a)(1)(ii) that meets the requirements of 10 CFR 50.4(b)(9). Upon docketing of these certifications, the 10 CFR Part 50 license for TMl-1 will no longer authorize operation of the reactor or replacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2).

By letters dated April 5, 2019, Exelon submitted the TMl-1 Decommissioning Cost Estimate ("DCE") pursuant to 10 CFR 50.82(a)(4)(i) and the Spent Fuel Management Plan pursuant to 10 CFR 50.54(bb). The DCE submittal was based on the annual cash flow required for decommissioning TMl-1 based on the SAFSTOR scenario. The TMl-1 DCE was based on a retirement date of 2019.

Flawed Basis for Exemption.

TMI-Alert opposes Exelon's use of the SAFSTOR method of decommissioning and decontamination at TMI-1. This option defers the completion of radiological decommissioning until 2075. Moroever, SAFSTOR artificially delays the cleanup of TMI-2 based on the MOU signed by Exelon and FirstEnergy.

Q: Are you aware of the MOU between FE and Exelon which links decommissioning of TMI-1 and TMI-2?

A: NRC is aware that there is a MOU between FE and Exelon. We are not a party to the agreement and are not aware of any details in the agreement. (Response to Eric Epstein, July 19, 2019.)

The NRC can choose to ignore the MOU, but the stark reality is that if SAFSTOR is approved at TMI-1, then TMI-2 will remain in limbo until 2075. The problem with this scenario is that it contradicts the position that the NRC outlined in their decommissioning review of TMI-2 in 2018. The NRC accepted GPU's decommissioning time line of beginning in 2040 with an anticipated withdrawal of $97 million occurring in 2041.

Adding to the surreal conflict between and Exelon and FirstEnergy's PSDAR plans is the fact that FirstEnergy's PSDAR - which is in compliance with 10 CFR 50.82(a)(4) - recognizes September 14, 1993 as the permanent date of cessation and coincides with License Amendment 45, (Ascension No. ML12349A291).

However, since GPU has 60 years to decommission TMI-2 from September 14, 1993, decommissioning at TMI-2 cannot be delayed after 2053. Which means the NRC must resolve their PSDAR approved riddle of "Who's On First, What's on Second" carousel of conflicting cleanup dates for cleaning-up TMI-1 and TMI-2.

Table 1 reflects the projected annual expenditures required for radiological decommissioning TMI-1 (including Independent Spent Fuel Storage Installation ("ISFSI") based on the SAFSTOR scenario from the PSDAR, Reference 2 cost estimate. **These costs should be excluded in the 2019 row in Table 1.**

Spent fuel management costs are inappropriately included in the PSDAR, Reference 2 cost estimate starting in 2019. These costs include the cost to design and build the ISFSI, design, and manufacture the upgraded refuel handling building crane, and purchase long lead time items associated with the spent fuel storage system.

None of the 2019 spent fuel management costs have been reimbursed from the DTF, and future costs should be borne exclusively by the licensee.

To date, all of these costs for dry cask storage have been paid by Exelon at their Pennsylvania nuclear generating stations. Exelon's precedent established at Limerick and Peach Bottom clearly and unambiguously establish that dry cask storage costs are the responsibility of the licensee.

The escalation was determined using a boiler plate forecasting tool that relied on an average annual escalation rate of 2.8638%. This rate was calculated using the Employment Cost Index Total Compensation Private Industry Workers United States. These escalation costs ignore local, regional or state data. (Please refer to discussion on pp.12-13.)

Table 2 includes a cash flow analysis which demonstrates that during the SAFSTOR period, the amount is **insufficient to cover the "minimal," "medium" or "maximum" cost of radiological decommissioning and spent fuel management activities.**

Contributions to the DTF and cost escalation are both assumed to be zero in the Table 2 analysis. **Yet, additional costs are the responsibility of the licensee which has no tangible plans in place to secure the funding. The rate of return is inconsistent with the aggregate rate of return experienced by Exelon as disclosed in their NRC and PUC reporting from 2008 to 2012. Moreover, investment instruments are restricted based on NRC approved formulas.**

Exelon formed a site organization dedicated to decommissioning planning in 2017. The 2017 and 2018 radiological decommissioning planning costs associated with this organization **should not be** reimbursed from the DTF.

Exelon delayed spent fuel management planning at TMI-1 until 2018, while being aware of storage shortages since at least the 1990s. Exelon re-racked Spent Fuel Pools into denser geometric configurations during refueling outages.

Exelon re-racked spent fuel from 2002-2009 in three phases. By mid-2003, an additional 216 re-racked cells were installed, or enough for three refueling cycles. By mid-2009, Exelon added another 432 re-racked cells extending storage capacity through 2018. Because of the additional capacity, and Three Mile Island-1 core size, (177) the Company will lose full core off -load capability in 2019.

Exelon was aware of spent fuel storage problems for over two decades. The NRC allowed a "no action" course of action. Spent fuel management planning costs should not be reimbursed from the DTF. Exelon' s business decisions require a shareholder response. Ratepayers should not subsidize Exelon's poor planning, and the NRC's laissez-faire oversight.

At the end of radiological decommissioning, a planned shortfall will occur. The proposed "minimum" projections do not include additional costs to achieve site restoration to Greenfield or non-radiological decommissioning. Accelerating the short fall due to poor management is not a legitimate reason to grant an exemption.

Adjusting Cost Estimates and Funding Levels.

10 CFR 50.82(a)(8)(iv) states the following:

For decommissioning activities that delay completion of decommissioning by including a period of storage or surveillance, the licensee shall provide a means of adjusting cost estimates and associated funding levels over the storage or surveillance period. SAFSTOR for TMI-1 is the same as PDMS for TMI-2.

This scenario lacks regulatory oversight, fails to put any mechanism in place to compel adequate funding, and should be rejected in favor of DECON.

Exelon anticipates maintaining TMI-1 in a safe storage condition ("SAFSTOR") for an extended period prior to completion of radiological decommissioning. According to **Exelon's theory**, this will allow radioactive decay to occur, thereby reducing the quantity of contamination and radioactivity that must be disposed of during the decontamination and dismantlement process as well as reducing the associated occupational exposure. **TMI-1 must be enrolled in DECON or it will be placed in a nuclear nether world like TMI-2.** (Please refer to Enclosure 1.)

Exelon's approach to address the requirements of 10 CFR 50.82(a)(8)(iv) with respect to "adjusting [decommissioning] cost estimates and associated funding levels over the storage or surveillance period" is discussed below.

During the SAFSTOR period, the site-specific decommissioning cost estimate will be periodically updated in compliance with Exelon procedures. The cost estimates and financial levels will be adjusted in accordance with Regulatory Guide 1.159, "Assuring the Availability of Funds for Decommissioning Nuclear Reactors," and will be used to demonstrate funding assurance. If the funding assurance demonstration shows the decommissioning trust fund is not sufficient, then an alternate funding mechanism allowed by 10 CFR 50.75(e) and the guidance provided in the Regulatory Guide, will be put in place at an appropriate, to be determined time.

There are no guarantees in place to ensure adequate funding is in place after Exelon deactivates the plant. Exelon's language is a toothless verbal promissory note. The "surveillance option" is grossly inadequate to ensure "minimum" let alone real funding is in place for decontamination, decommissioning, and Greenfield.

Periodic updates rely on Exelon's internal estimates. Exelon has transitioned from using TLG for decommissioning cost estimates. The Company is now calculating costs based on in-house, internal biases.

There is No Justification for the Exemption for the DTF and There are No Special Circumstances at Three Mile Island Unit-1.

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of Part 50 which are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security.

10 CFR 50.12 also states that the Commission will not consider granting an exemption unless special circumstances are present. As discussed below, this exemption request does not satisfy the provisions of Section 50.12.

TMI re-racked and postponed dry cask storage construction. Exelon's self-inflicted waste storage conundrum is a business decision. Exelon should not be rewarded for perpetrating a planned train wreck.

Exemptions.

A. The exemptions subvert state and federal law, and give Exelon an unfair competitive advantage.

The proposed exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) would allow Exelon to use a portion of the funds from the decommissioning trust fund for spent fuel management activities, consistent with the TMl-1 Spent Fuel Management Plan, and decommissioning cost estimate.

TMI-Alert argues that there are no special exemptions present. A pre-planned corporate strategy of delaying construction of dry casks does not justify a rate payer bailout. Every nuclear station that has transitioned to dry cask storage in Pennsylvania has used corporate funds to underwrite this core function of nuclear power generation.

The proposed exemptions would result in a violation of the Atomic Energy Act of 1954. Exelon's proposal lacks accountability and transparency and violates Pa Title 66 ¶ "Transition or stranded costs." §2803. (1) & (3) (ii); §2804. Standards for restructuring of electric industry. (F) § 2808. Competitive transition charge. (b) Period for collecting Competitive Transition Costs. (b) Determination of competitive transition charge(c)(1), and **Chapter ¶69.1 & 69. 206 Inventory Management** (Enclosure 6).

Exelon mismanaged their fuel inventory by ordering fuel that would exceed the available storage capacity. The exemptions would also pre-empt Pennsylvania's Electricity Customer Choice and Competition Act (1996), and create an unfair competitive advantage over FirstEnergy and Talen Energy, which were precluded from raiding their respective Decommissioning Trust Funds.

Therefore, the exemption request is incompatible with state and federal laws.

B. The exemptions will present an undue risk to public health and safety.

The underlying purpose of 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50. 75(h)(1)(iv) is to provide reasonable assurance that adequate funds will be available for decommissioning of power reactors. **Raiding the trust fund for spent fuel management activities will undermine Exelon's ability to decommission TMI-1.**

An exemption from 10 CFR 50.75(h)(1)(iv) to allow Exelon to make withdrawals from the trust fund to cover expenses for spent fuel management efforts without prior written notification to the NRC. Unfettered access to the DTF will adversely affect the sufficiency of funds in the trust fund to accomplish radiological decontamination of the site.

The reporting requirements in 10 CFR 50.82(a)(8)(v) and (vi) are grossly inadequate to assure sufficient funding is in place. **Exempting Exelon from pre-notification protocols is like hiring a bank robber to guard your safety-deposit box.**

New accident scenarios are created by raiding the trust fund, and not cleaning the plant up immediately. The probability of postulated accidents has increased relating to K-Effective levels (3), the risk of spent fuel fires increase (4); and, negative impacts from natural hazards such as flooding and seismic challenges have increased due to the absence of off-site external support. (5)

Therefore, the exemptions will present an undue risk to the public health and safety.

C. The exemptions are not consistent with the common defense and security.

The proposed exemptions would allow Exelon to use a portion of trust funds for spent fuel management efforts, which are inconsistent with the TMl-1 Spent Fuel Management Plan and Decommissioning Cost Estimate.

"The NRC does not have jurisdiction when it comes to off-site emergency response for nuclear power plants. FEMA is the federal agency responsible for overseeing the adequacy of those plans, which would be carried out by state, counties and local emergency response authorities...

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2 "K-Effective as a Measure of Criticality Safety", JAERI-Conference, J. Venner, R.M. Haley and R.L. Bowden, pp.131-132)

3 If a spent fuel fire occurred during SAFSTOR, and "...were to propagate from the hotter to colder fuel a radioactive release could be very large", (David Lochbaum, Union of Concerned Scientists, "Safer Storage of Spent Nuclear Fuel.")

4 Exelon is requesting an exemption to eliminate all off site contingencies. The NRC acknowledged at the webinar that the last planned evacuation exercise is scheduled for August, 2019. (NRC Webinar, July, 17, 2019.)

The NRC also stated, "The plant owner is responsible for the security of its site. These security plans are regularly inspected by the NRC, including during a force-on-force exercise conducted once every three years at plant sites. During those exercises, the plant security force must, among other things, demonstrate its ability to repel mock intruders." (NRC Response to Eric Epstein, July 19, 2019.)

However, Exelon is asking for an exemption from off-site planning exercises at the same the NRC is extolling the virtues of a program that is soon to be phased out.

This change to enable use of some of the funds in the trust fund for spent fuel management activities decreases the margins of safety and security at the plant site and beyond the fence line. This exemption also imperils the integrity of the Harrisburg International Airport.

Therefore, the proposed exemptions are inconsistent with the common defense and security, and unnecessarily put the local community at risk.

No Special Circumstances.

Pursuant to 10 CFR 50.12(a)(2), the NRC will not consider granting an exemption to its regulations unless special circumstances are present. TMI-Alert has determined that special circumstances are **not** present as discussed below.

A. Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule, and is not necessary to achieve the underlying purpose of the rule. (10 CFR 50.12(a){2)(ii))

The underlying purpose of 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50. 75(h)(1)(iv) is to provide reasonable assurance that adequate funds will be available for decommissioning of power reactors within 60 years of cessation of operations. TMI-2 has proven this theory to be a cruel joke.

Strict application of the rule prohibits withdrawal of funds from the DTF for activities associated with spent fuel management activities until final radiological decommissioning at TMI-1 has been completed. Tables 1 and 2 (as discussed above) demonstrate that adequate funds are not – and will not be available for non-radiological decommissioning and Greenfield.

The 30-day notification provision in 10 CFR 50.75(h)(1)(iv) was intended to insulate and protect rate payers, residents and tax payers. The underlying purpose of notifying the NRC prior to withdrawal of funds from the DTF is to provide an opportunity for NRC and Public Utility Commission intervention, when deemed necessary, if the withdrawals are for expenses other than those authorized by 10 CFR 50.75(h)(1)(iv) and 10 CFR 50.82(a)(8) that could result in insufficient funds in the DTF to accomplish radiological decontamination of the site.

Therefore, since the underlying purposes of the rules would be undermined by allowing Exelon to use the DTF to fund the activities as discussed in the TMI-1 cost estimate and Spent Fuel Management Plan, the special circumstances of 10 CFR 50.12(a)(2)(ii) are not present.

B. Compliance with federal and state laws would not result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated. (10 CFR 50.12(a)(2)(iii)).

Exelon should not use ratepayer funds to underwrite a core function of nuclear power plant operations. Exelon already has access to Department of Treasury payments for spent fuel management activities. (Enclosure 8) **The status quo would mean that TMI would be following the same protocol as every other nuclear power plant in Pennsylvania. To maintain a lock box on the DTF is the intent of the law.**

In the alternative, TMI-Alert would entertain a scenario where Exelon returns federal taxpayer funds for spent fuel management for consideration of the DTF exemption.

Therefore, compliance with the rule is not an undue hardship but a reasonable requirement, and allows the restrictions to remain in place as envisioned.

Absence of precedent.

The exemption request for 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50. 75(h)(1)(iv) is not consistent with exemption requests that recently have been issued by the NRG for other nuclear power reactor facilities beginning decommissioning. **None of these plants are in Pennsylvania where the precedent of self-funding has been established at Beaver Valley, Limerick, Peach Bottom, and Susquehanna nuclear generating stations.**

All of these plants have been compensated for spent fuel storage costs with an agreement with the DOE which is funded by the Treasury Department. To grant the exemption is to endorse double dipping, and inconsistent with the NRC's formula at Exelon's Oyster Creek Generating Station.

The NRC has created at precedent at Oyster Creek of factoring DOE settlement funds into DTF calculations. The NRC wrote on September 28, 2018:

> "As an additional potential source of funding for Oyster Creek SFM costs, **Exelon also will rely on reimbursements from the DOE to fund SFMP activities, pursuant to the terms of the settlement agreement between Exelon and the United States Government**, concerning DOE's breach of its contract to accept and dispose of spent fuel and high-level waste at Oyster Creek. (Subject: Oyster Creek: Update to Spent Fuel Management Plan (EPID L-2018-LRO-0023.)

Environmental Assessment.

The proposed exemption does not meet the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(25), because the proposed exemption involves: (i) significant hazards consideration; (ii) significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (iii) significant increase in individual or cumulative public or occupational radiation exposure; (iv) significant construction impact; (v) significant increase in the potential for or consequences from radiological accidents; and (vi) the requirements from which the exemption is sought involve would undermine (H) surety, insurance or indemnity requirements.

Therefore, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment needs to be prepared in connection with the proposed exemption.

(i) No Significant Hazards Consideration Determination.

TMIA has evaluated the proposed exemption to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92 as discussed below:

1. Does the proposed exemption involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: Yes.

The proposed exemptions would allow Exelon to withdraw funds from the Three Mile Island Nuclear Station's decommissioning trust fund.

Therefore, the proposed exemption does involve a significant increase in the probability and consequences of an accident previously evaluated as evidenced by the abandonment and chronic underfunding of TMI-2 which was placed under a similar protocol.

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

Response: Yes.

The proposed exemption does involve a physical alteration of the plant. Lack of physical modifications to existing equipment associated with the proposed exemption may facilitate embrittlement and challenges to the tensile and yield strength of vital safety components. Thus, new initiators or precursors of a new or different kind of accident are created. Furthermore, the proposed exemption creates the possibility of a new accident as a result of new failure modes associated with equipment or lack of personnel oversight.

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

3. Do the proposed exemptions involve a significant reduction in a margin of safety?

Response: Yes.

The proposed exemption does alter the design basis and safety limits for the plant. The proposed exemption does impact station operation and any plant SSC that is relied upon for accident mitigation.

Therefore, the proposed exemption involves a significant reduction in a margin of safety based on the fact the physical structure will age-in-place. Based on the above, TMIA concludes that the proposed exemption presents significant hazards consideration, and, accordingly, a finding of "significant hazards consideration" is justified.

(ii) There is significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

There are expected changes in the types, characteristics, or quantities of effluents discharged to the environment associated with the proposed exemption. There are materials or chemicals introduced into the plant that could affect the characteristics or types of effluents released offsite. Therefore, the proposed exemption will result in significant change to the types or significant increase in the amounts of any effluents that may be released offsite.

(iii) There is a significant increase in individual or cumulative public or occupational radiation exposure.

The proposed exemptions allow the plant configuration to atrophy which could lead to a significant increase in individual or cumulative occupational radiation exposure.

(iv) There is a significant impact to placing the site in dormancy.

Delayed site construction activities may be associated with the proposed exemption which would adversely impact TMI-1 and TMI-2.

During the 159-ton reactor head lift, from July 24-27, 1984, which was delayed due to polar crane failure, GPU vented radioactive gases into the environment despite pledges by the Company and NRC that no radioactive releases would occur. This is the first time there had been direct access to Unit-2's damaged fuel. GPU was fined $40,000 by the NRC for this violation.

(v) There is a significant increase in the potential for or consequences from radiological accidents.

The reduction in staffing and loss of institutional memory will erode the margin of safety.

(vi) The requirements from which exemption is sought involve: (H) surety, insurance or indemnity requirements.

The underlying purpose of the requirements from which exemptions are sought is to provide reasonable assurance that adequate funds will be available for decommissioning of power reactors. Exelon's request explicitly undermines requirements, and does not provide meaningful guarantees for decommissioning funding.

Section (h)(1)(iv) of 10 CFR 50.75 also states, in part:

> Disbursements or payments from the trust, escrow account, Government fund, or other account used to segregate and manage the funds, other than for payment of ordinary administrative costs (including taxes) and other incidental expenses of the fund (including legal, accounting, actuarial, and trustee expenses) in connection with the operation of the fund, are restricted to decommissioning expenses or transfer to another financial assurance method acceptable under paragraph (e) of this section until final decommissioning has been completed. After decommissioning has begun and withdrawals from the decommissioning fund are made under § 50.82(a)(8), no further notification need be made to the NRC.

TMI has already experienced the erosion of financial security during SAFSTOR at TMI-2. On July 21, 1999, GPU Nuclear received permission form the **NRC to reduce the insurance at TMI-2 from $1.06 billion to $50 million.** (Please refer to discussion in Enclosure 1.)

Four months later, TMI-2 was formally transferred from GPU Nuclear to FirstEnergy. FirstEnergy Nuclear Operating Company is currently involved in **bankruptcy proceedings.** Exelon has made a similar license transfer this year to Holtec at Oyster Creek. (Enclosure 5. DFI, pp. 2-11.)

In December, 2018, the Nuclear Regulatory Commission approved reductions in Exelon's Oyster Creek Generating Station's liability insurance by $1.45 billion. Reductions in off-site insurance by $350 million and on-site insurance by $1.1 billion were approved three months after the plant shutdown.

Conclusion.

The proposed exemptions would allow Exelon to subvert the TMI-1 decommissioning trust fund for spent fuel management which is a core function of nuclear power operations. Pennsylvania ratepayers should not be subsidizing Exelon's poor corporate decision to delay construction of dry casks. Taxpayers, through the Department of Energy's settlement with Exelon, have already furnished TMI with additional millions in funds for spent fuel management.

Granting these exemptions is inconsistent with the purposes underlying NRC decommissioning regulations as the exemptions: (1) Would foreclose release of the site for possible unrestricted use; (2) Would result in significant environmental impacts not previously reviewed by the NRC; and (3) Would undermine the existing and continuing reasonable assurance that adequate funds will be available for decommissioning.

Pursuant to the provisions of 10 CFR 50.12, TMI-Alert strongly opposes permanent or temporary exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) for TMl-1. Based on the considerations discussed above, the requested exemptions clearly undermine both state and federal laws, and present an undue risk to the public health and safety.

Respectfully submitted,

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Enclosures

cc:

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NRC Project Manager, NMSS/DUWP/RDB - Three Mile Island - Unit 2
Environmental Resources

Table 1
RADIOLOGICAL DECOMMISSIONING AND SPENT FUEL MANAGEMENT ANNUAL EXPENDITURES FOR SAFSTOR THREE MILE ISLAND NUCLEAR STATION UNIT 1
(December 31, 2018 dollars, thousands)

Year	Radiological Decommissioning Cost	Spent Fuel Management Cost	Total Cost[a]
2019	20,490	27,477	47,967
2020	66,516	30,973	97,490
2021	45,645	25,395	71,040
2022	38,025	14,963	52,988
2023	10,086	123	10,209
2024	9,099	1,139	10,238
2025	6,057	4,152	10,209
2026	6,057	4,152	10,209
2027	6,057	4,152	10,209
2028	6,073	4,163	10,237
2029	6,057	4,152	10,209
2030	6,057	4,152	10,209

Chart continued on next page

2031	6,057	4,152	10,209
2032	6,073	4,163	10,237
2033	6,057	4,152	10,209
2034	6,052	7,385	13,437
2035	6,040	13,784	19,824
2036	5,702	0	5,702
2037	5,686	0	5,686
2038	5,686	0	5,686
2039	5,686	0	5,686
2040	5,702	0	5,702
2041	5,686	0	5,686
2042	5,686	0	5,686
2043	5,686	0	5,686
2044	5,702	0	5,702
2045	5,686	0	5,686
2046	5,686	0	5,686
2047	5,686	0	5,686
2048	5,702	0	5,702
2049	5,686	0	5,686
2050	5,686	0	5,686
2051	5,686	0	5,686
2052	5,702	0	5,702
2053	5,686	0	5,686
2054	5,686	0	5,686

Table 1 (Continued)

Year	Radiological Decommissioning Cost	Spent Fuel Management Cost	Total Cost[4]
2055	5,686	0	5,686
2056	5,702	0	5,702
2057	5,686	0	5,686
2058	5,686	0	5,686
2059	5,686	0	5,686
2060	5,702	0	5,702
2061	5,686	0	5,686
2062	5,686	0	5,686
2063	5,686	0	5,686
2064	5,702	0	5,702
2065	5,686	0	5,686
2066	5,686	0	5,686
2067	5,686	0	5,686
2068	5,702	0	5,702
2069	5,686	0	5,686

Chart continued on next page

2070	5,686	0	5,686
2071	5,686	0	5,686
2072	5,702	0	5,702
2073	24,709	0	24,709
2074	6,1226	0	6,1226
2075	150,301	0	150,301
2076	113,681	0	113,681
2077	75,862	0	75,862
2078	75,687	0	75,687
2079	32,813	0	32,813
2080	133[b]	0	133
2081	95[b]	0	95
Totals[a]	1,001,552	158,631	1,160,184

(a) Cash flows may not add due to rounding.
(b) 2080 and 2081 Radiological Decommissioning Costs are administrative expenses associated with submitting a final report to the NRC following license termination and do not include any physical decommissioning work.

Table 2
ANNUAL SAFSTOR DECOMMISSIONING FUND CASH FLOW FOR THREE MILE ISLAND NUCLEAR STATION, UNIT 1
(December 31, 2018 dollars, thousands)

Year	Total Cost[a]	BOY Trust Fund Value	BOY Trust Fund Less Cost	Trust Fund Earnings[b]	EOY Trust Fund Value[c]
2019	47,987	662,953[d]	614,966	12,300	627,266
2020	97,490	627,286	529,797	10,596	540,393
2021	71,040	540,393	469,352	9,387	478,739
2022	52,988	478,739	425,751	8,515	434,266
2023	10,209	434,266	424,057	8,481	432,539
2024	10,238	432,539	422,301	8,446	430,747
2025	10,209	430,747	420,538	8,411	428,949
2026	10,209	428,949	418,740	8,375	427,114
2027	10,209	427,114	416,905	8,338	425,244
2028	10,237	425,244	415,007	8,300	423,307
2029	10,209	423,307	413,098	8,262	421,360
2030	10,209	421,360	411,151	8,223	419,374
2031	10,209	419,374	409,165	8,183	417,348
2032	10,237	417,348	407,111	8,142	415,253
2033	10,209	415,253	405,044	8,101	413,145
2034	13,437	413,145	399,709	7,994	407,703
2035	19,924	407,703	387,879	7,758	395,637
2036	5,702	395,637	389,935	7,799	397,733
2037	5,686	397,733	392,047	7,841	399,888
2038	5,686	399,888	394,202	7,884	402,086
2039	5,686	402,086	396,400	7,928	404,328
2040	5,702	404,328	398,626	7,973	406,598
2041	5,686	406,598	400,912	8,018	408,930
2042	5,686	408,930	403,244	8,065	411,309
2043	5,686	411,309	405,623	8,112	413,735
2044	5,702	413,735	408,033	8,161	416,194
2045	5,686	416,194	410,508	8,210	418,718
2046	5,685	418,718	413,031	8,261	421,292
2047	5,686	421,292	415,606	8,312	423,918
2048	5,702	423,918	418,216	8,364	426,580
2049	5,686	426,580	420,894	8,418	429,312
2050	5,686	429,312	423,626	8,473	432,098
2051	5,686	432,098	426,412	8,528	434,940

Chart continues on next page

Table 2 (Continued)

Year	Total Cost[a]	BOY Trust Fund Value	BOY Trust Fund Less Cost	Trust Fund Earnings[b]	EOY Trust Fund Value[c]
2052	5,702	434,940	429,238	8,585	437,823
2053	5,686	437,823	432,137	8,643	440,780
2054	5,686	440,780	435,093	8,702	443,795
2055	5,686	443,795	438,109	8,762	446,871
2056	5,702	446,871	441,169	8,823	449,993
2057	5,686	449,993	444,306	8,886	453,192
2058	5,686	453,192	447,508	8,950	456,458
2059	5,686	456,458	450,770	9,015	459,785
2060	5,702	459,785	454,084	9,082	463,165
2061	5,686	463,165	457,479	9,150	466,628
2062	5,686	466,628	460,942	9,219	470,161
2063	5,686	470,161	464,475	9,289	473,764
2064	5,702	473,764	468,062	9,361	477,424
2065	5,686	477,424	471,737	9,435	481,172
2066	5,686	481,172	475,486	9,510	484,996
2067	5,686	484,996	479,309	9,586	488,895
2068	5,702	488,895	483,194	9,664	492,857
2069	5,686	492,857	487,171	9,743	496,915
2070	5,686	496,915	491,228	9,825	501,053
2071	5,686	501,053	495,367	9,907	505,274
2072	5,702	505,274	499,572	9,991	509,564
2073	24,709	509,564	484,855	9,697	494,552
2074	61,226	494,552	433,326	8,667	441,992
2075	150,301	441,992	291,692	5,834	297,525
2076	113,661	297,525	183,844	3,677	187,521
2077	75,882	187,521	111,659	2,233	113,892
2078	75,687	113,892	38,205	764	38,969
2079	32,813	38,969	6,156	123	6,279
2080	133	6,279	6,146	123	6,269
2081	95	6,269	6,174	123	6,298
Total[c]	1,160,184				

(a) Annual SAFSTOR decommissioning cost (radiological + spent fuel)
(bl A 2% annual real rate of return is used as allowed by 10 CFR 50.75(e)(1)(i)
(c) Cash flows may not add due to rounding

(dl The 2019 BOY Trust Fund Value is the value of the decommissioning trust as of 12/31/2018 less the 2017 and 2018 radiological decommissioning planning and 2018 spent fuel management planning costs, $4,817k and $1,846k respectively.

*** This data does is inconsistent with Exelon's SEC filings contained in Exelon's 2017 and 2018 Annul Reports.**

Please refer to discussions under "Nuclear Waste Storage and Disposal," "Nuclear Insurance," "Decommissioning," "Asset Retirement Obligations," "NRC Minimum Funding Requirements," and "Asset Retirement Obligations."

Please pay special attention to the criteria and assumptions used by Generation to determine the ARO, and to forecast the target growth in NDT fund in 2017 and 2018.

Enclosure 1

- Petition Pursuant to 10 CFR 2.206 - Demand for Information Proposed Merger between FirstEnergy and Allegheny Energy Re: The Impact on Three Mile Island Unit-2's Nuclear Decommissioning Trust Fund

Stephen Burns, General Counsel
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

September 30, 2010

I. Introduction

Pursuant to §2.206 of Title 10 of the Code of Federal Regulations, Eric Joseph Epstein ("Epstein" or Mr. "Epstein") hereby petitions the Nuclear Regulatory Commission ("NRC" or "the Commission") to take enforcement action in the form of a Demand for Information from FirstEnergy ("FENOC", "the Company" or "the licensee") relating to inadequate financial assurances provided by the licensee for Three Mile Island Unit-2's ("TMI-2") nuclear decommissioning fund (1) ***prior*** to the consummation of FirstEnergy's proposed merger with Allegheny Energy.

According to the NRC, (1) FirstEnergy's Decommissioning Trust Fund for TMI-2 is grossly underfunded: "The current radiological decommissioning cost estimate is $831.5 million. The current amount in the decommissioning trust fund is $484.5 million, as of December 31, 2008." (2) However, th**e level of rate recovery** for the Trust Fund has been set by the Pennsylvania Public Utility Commission ("PUC"). The proposed merger with Allegheny Energy will endanger an already fragile funding protocol.

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1 Per 10 CFR 50.75(f)(1), licensees for shutdown reactors are required to report annually on the status of decommissioning funding by March 31 (in the following year).

2 NRC website: http://www.nrc.gov/info-finder/decommissioning/power-reactor/three-mile-island-unit-2.html. 1

According to the NRC, the cost to decommission TMI-2 has **increased by $26.5 million in less than three years** while the Decommissioning Trust Fund's assets have **decreased by $116.5 million** during the same period. The NRC determined in 2007, "The current radiological decommissioning cost estimate is $805 million and $27 million for non-radiological funds. The current amount in the decommissioning trust fund is $601 million, as of December 31, 2007." (3)

Mr. Epstein seeks enforcement action in the form of a Demand for Information ("DFI") requiring FirstEnergy to provide the NRC with site-specific information and financial guarantees that demonstrate and verify the licensee has adequate funding in place to decommission and decontaminate TMI-2, and that the proposed merger will not place additional financial pressures on FirstEnergy's ability to satisfy its decommissioning obligations in 2036.

FirstEnergy's decommissioning report is inadequate, and fails to account for the special status of TMI-2, the current level of underfunding, or the fact that decommissioning rate recovery for Metropolitan Edison (4) and Pennsylvania Electric cease per PUC Orders on December 31, 2010. (5)

> The decommissioning trusts of JCP&L and the Pennsylvania Companies are subject to regulatory accounting, with unrealized gains and losses recorded as regulatory assets or liabilities, since the difference between investments held in trust and the decommissioning liabilities will be recovered from or refunded to customers. NGC, OE and TE recognize in earnings the unrealized losses on available-for-sale securities held in their nuclear decommissioning trusts as other-than-temporary impairments. On June 18, 2009, the NRC informed FENOC that its review tentatively concluded that a shortfall existed in the decommissioning trust fund for Beaver Valley Unit 1. On November 24, 2009, FENOC submitted a revised decommissioning funding calculation using the NRC formula

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3 NRC website: http://www.nrc.gov/info-finder/decommissioning/power-reactor/three-mile-island-unit-2.html.

4 Metropolitan Edison (Docket No. R-00974008) and Penn Electric (Docket No. R-00974009).

5 Penn Elec's final TMI-2 collection for $7.817 million occurred in 2009.

- Petition Pursuant to 10 CFR 2.206 - Demand for Information Proposed Merger between FirstEnergy and Allegheny Energy Re: The Impact on Three Mile Island Unit-2's Nuclear Decommissioning Trust Fund

Stephen Burns, General Counsel
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I. Introduction

Pursuant to §2.206 of Title 10 of the Code of Federal Regulations, Eric Joseph Epstein ("Epstein" or Mr. "Epstein") hereby petitions the Nuclear Regulatory Commission ("NRC" or "the Commission") to take enforcement action in the form of a Demand for Information from FirstEnergy ("FENOC", "the Company" or "the licensee") relating to inadequate financial assurances provided by the licensee for Three Mile Island Unit-2's ("TMI-2") nuclear decommissioning fund (1) ***prior*** to the consummation of FirstEnergy's proposed merger with Allegheny Energy.

According to the NRC, (1) FirstEnergy's Decommissioning Trust Fund for TMI-2 is grossly underfunded: "The current radiological decommissioning cost estimate is $831.5 million. The current amount in the decommissioning trust fund is $484.5 million, as of December 31, 2008." (2) However, th**e level of rate recovery** for the Trust Fund has been set by the Pennsylvania Public Utility Commission ("PUC"). The proposed merger with Allegheny Energy will endanger an already fragile funding protocol.

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1 Per 10 CFR 50.75(f)(1), licensees for shutdown reactors are required to report annually on the status of decommissioning funding by March 31 (in the following year).

2 NRC website: http://www.nrc.gov/info-finder/decommissioning/power-reactor/three-mile-island-unit-2.html. 1

According to the NRC, the cost to decommission TMI-2 has **increased by $26.5 million in less than three years** while the Decommissioning Trust Fund's assets have **decreased by $116.5 million** during the same period. The NRC determined in 2007, "The current radiological decommissioning cost estimate is $805 million and $27 million for non-radiological funds. The current amount in the decommissioning trust fund is $601 million, as of December 31, 2007." (3)

Mr. Epstein seeks enforcement action in the form of a Demand for Information ("DFI") requiring FirstEnergy to provide the NRC with site-specific information and financial guarantees that demonstrate and verify the licensee has adequate funding in place to decommission and decontaminate TMI-2, and that the proposed merger will not place additional financial pressures on FirstEnergy's ability to satisfy its decommissioning obligations in 2036.

FirstEnergy's decommissioning report is inadequate, and fails to account for the special status of TMI-2, the current level of underfunding, or the fact that decommissioning rate recovery for Metropolitan Edison (4) and Pennsylvania Electric cease per PUC Orders on December 31, 2010. (5)

> The decommissioning trusts of JCP&L and the Pennsylvania Companies are subject to regulatory accounting, with unrealized gains and losses recorded as regulatory assets or liabilities, since the difference between investments held in trust and the decommissioning liabilities will be recovered from or refunded to customers. NGC, OE and TE recognize in earnings the unrealized losses on available-for-sale securities held in their nuclear decommissioning trusts as other-than-temporary impairments. On June 18, 2009, the NRC informed FENOC that its review tentatively concluded that a shortfall existed in the decommissioning trust fund for Beaver Valley Unit 1. On November 24, 2009, FENOC submitted a revised decommissioning funding calculation using the NRC formula

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3 NRC website: http://www.nrc.gov/info-finder/decommissioning/power-reactor/three-mile-island-unit-2.html.

4 Metropolitan Edison (Docket No. R-00974008) and Penn Electric (Docket No. R-00974009).

5 Penn Elec's final TMI-2 collection for $7.817 million occurred in 2009.

> method based on the renewed license for Beaver Valley Unit 1, which extended operations until 2036. FENOC's submittal demonstrated that there was a de minimis shortfall. On December 11, 2009, the NRC's review of FirstEnergy's methodology for the funding of decommissioning of this facility concluded that there was reasonable assurance of adequate decommissioning funding at the time permanent termination of operations is expected. FirstEnergy continues to evaluate the status of its funding obligations for the decommissioning of these nuclear facilities. (6)

The Company acknowledged, "The values of FirstEnergy's nuclear decommissioning trusts fluctuate based on market conditions. If the value of the trusts decline by a material amount, FirstEnergy's obligation to fund the trusts may increase. Disruptions in the capital markets and its effects on particular businesses and the economy in general also affects the values of the nuclear decommissioning trusts."

However, FirstEnergy's rate recovery opportunities in Pennsylvania are restricted after December 31, 2010. Three Mile Island Unit-2 will no longer receive rate payer funding for decommissioning after December 31, 2010 when Metropolitan Edison and Penn Elec's "rate caps" are lifted. (Please refer to Enclosure 1)

This is a settled issue at the Pennsylvania Public Utility Commission. (7) TMI-2's decommissioning funding was litigated in both Met Ed and Penn Elec's Restructuring Cases as well as the 2006 Distribution base rate case at the PUC. As part of the Restructuring Settlement, Met Ed and Penn Elec are collecting TMI-2 decommissioning expenses through the Competitive Transition Cost ("CTC") as a stranded cost through December 31, 2010. In the 2006 Distribution base rate case; however, Met Ed sought an increase in the TMI-2 decommissioning expense as part of its CTC revenue requirement. The claim was made as part of a request for a specific exception to the generation rate cap that was allowed under the restructuring settlement. (8)

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6 *FirstEnergy 2009 Annual Report,* p. 44.

7 *FirstEnergy 2009 Annual Report*, p. 59.

8 Metropolitan Edison and Pennsylvania Electric Company v. Pa. PUC No. 2404 C.D. 2003 (Pa. Cmwlth. 2006) (filed July 19, 2006).

The Pennsylvania Public Commission stated:

> The Commonwealth Court affirmed the Commission's order requiring Metropolitan Edison and Pennsylvania Electric Company (Electric Companies) to retroactively adjust their accounting entries for stranded cost recovery, as if their Settlement Stipulation had never been approved by the Commission. The Electricity Generation Customer Choice and Competition Act (Competition Act) allowed electric companies to recover stranded costs through a competitive transition charge (CTC), subject to a rate cap. Every electric company was also required to file a restructuring plan explaining its compliance with the Competition Act, subject to approval by the Commission. After the Commission approved the Electric Companies' merger, they sought a rate increase pursuant to the Competition Act, or an immediate rate cap increase of $316 million per year. Interveners opposed the merger and Electric Companies' requests. The parties failed to reach a consensus, and the Electric Companies proposed a "Settlement Stipulation," which the Commission adopted in 2001. However, Commonwealth Court voided the Stipulation Settlement and reversed the Commission's order in *ARIPPPA v. Pa. PUC,* 892 A.2d 636 (Pa. Cmwlth. 2002) after multiple parties appealed. In response to the decision, the Commission ordered the Electric Companies to reverse any accounting changes made pursuant to the Settlement Stipulation.
>
> The Commonwealth Court held that the Commission complied with its order directing the Electric Companies to return revenues collected for the distribution and transmission rates to the same levels that existed before the Settlement, thereby ensuring customers were placed back in the same position before the rate change occurred. Furthermore, the Commission guaranteed that when the amount of stranded costs they received was settled, the Electric Companies could collect for any deficiencies. The Court also disagreed with the Electric Companies that the Commission can only change approved rates prospectively and are not subject to retroactive adjustment, since the rates previously approved by the Commission were not legal. (9)

Additionally, long-standing Atomic Energy Commission and Nuclear Regulatory Commission precedent makes it clear that "once a regulation is adopted, the standards it embodies represent the Commission definition of what is required to protect the public health and safety."

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9 Metropolitan Edison and Pennsylvania Electric Company v. Pa. PUC, No. 2404 C.D. 2003 (Pa. Cmwlth. 2006) (filed July 19, 2006).

> By the same token, neither the applicant nor the staff should be permitted to challenge applicable regulations, either directly or in directly , those parties should not generally be permitted to seek or justify the licensing of a reactor which does not comply with applicable standards. Nor can they avoid compliance by arguing that, although an applicable regulation is not met, the public health and safety will still be protected. For, once a regulation is adopted,the standards it embodies represent the Commission s definition of what is required to protect the public health and safety. In short, in order for a facility to be licensed to operate,the applicant must establish that the facility complies with all applicable regulations. If the facility does not comply, or if there has been no showing that it does comply, it may not be licensed. (9)

The NRC can not ignore or manipulate its own regulations relating to financial assurances for decommissioning

FirstEnergy recently acknowledged the embedded uncertainty and historic variability associated with "nuclear generation involves risks that include uncertainties relating to health and safety, additional capital costs, the adequacy of insurance coverage and nuclear plant decommissioning." (10) The Company's statement is underscored by the inability of TMI-2's management to predict decommissioning costs or funding levels over the past 25 years.

On January 18, 1994, at the NRC's Advisory Panel meeting, GPU's President Robert E. Long stated that the Company had $104.7 million on hand to decommission TMI-2. GPU's spokesperson, Mary Wells said, "We have a detailed plan in place to make sure that the money is going to be there."

By February, 1997, GPU reported in its *1997 Annual Report* that the cost to decommission TMI-2 **doubled in four years.** The original $200 million projection has been increased to $399 million for radioactive decommissioning. An additional $34 million will be needed for non-radiological decommissioning.

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9 Vermont Yankee Nuclear Power Station), United Sates of America Atomic Energy Commission Atomic Safety & Licensing Appeal Board, Memorandum and Order, (ALAB-138) Docket No. 50-271, IV., p. 528, Section IV, Paragraph A., p. 528, July 31, 1973.

10 *FirstEnergy 2009 Annual Report*, p. 17.

The new funding "target" was **$433 million or a $328.3 million increase in just 48 months.** Ten years later, according to the NRC, the radiological decommissioning cost estimate was **$779** million and $26 million for non-radiological funds. The amount in the decommissioning trust fund was $559 million, as of December 31, 2006.

In 2007 the TMI-2 site summary on the NRC's website stated as of December 31, 2007, "The current radiological decommissioning cost estimate is $805 million and $27 million for non-radiological funds. The current amount in the decommissioning trust fund is $601 million, as of December 31, 2007."

In 2008, according to the NRC, the radiological decommissioning cost estimate was $831.5 million. The amount in the decommissioning trust fund was $484.5 million as of December 31, 2008.

According to the NRC, the cost to decommission TMI-2 has **increased by $26.5 million in less than three years** while FirstEnergy decommissioning trust fund's assets has **decreased by $116.5 million** during the same period.

However, the owners of Three Mile island Unit-2 promised the NRC that delaying the cleanup would decrease cost and increase safety. Frank Standerfer GPU vice-president and director of TMI-2 told the NRC, "If we wait [to decommission TMI-2] there would be less risk to our workers and it would be more cost effective. He also told the NRC's TMI Advisory Panel, "GPU will not have a problem finding funds to shut both reactors in the next century." (11)

After 31 years of broken promises, faulty assumptions, and inaccurate projections, the NRC should hold FirstEnergy accountable and demand a site-specific funding plan at the site of the nation's worst commercial nuclear accident. **At a minimum, the proposed Merger must be held in abeyance** unit Three Mile Island-2 can demonstrate that is has adequate funding in place to decommission Three Mile Island Unit-2 in 2036 - 57 years after the Accident.

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11 Transcript from the NRC's TMI-2 Citizens Advisory Panel convened on May 27, 1988 in Harrisburg, PA.

II. Background

In July, 1969 Met Ed began construction on Three Mile Island-2 Unit 2, and the station came on line in December 1978. TMI-2 was grossly over budget and behind schedule. The plant had been on-line for just 90 days, or 1/120 of its expected operating life, before the March, 1979, accident. One billion dollars was spent to defuel the facility. Three months of nuclear power production at TMI-2 has cost close to $2 billion dollars in construction and cleanup bills; or the equivalent of over $10.6 million for every day TMI-2 produced electricity. The above mentioned costs do not include nuclear decontamination and decommissioning or restoring the site to "Greenfield. TMI-2 had no funds socked away at the time of meltdown for decontamination or decommissioning.

At the time of the core-melt, LOCA in March 1979, Three Mile Island I and 2 were owned three utilities operating in two states, i.e., Metropolitan Edison (50%), Jersey Central Power & Light (25%) and Pennsylvania Electric (25%). The companies were organized under the General Public Utilities holding company umbrella. The operator of both plants was Met Ed.

On March 25, 1980, Met Ed, blamed the plant's designer, Babcock & Wilcox (B&W) for the TMI accident, sue B&W for $500 million. TMI's owners also filed an unsuccessful $4 billion law suit against the NRC alleging that the Agency's negligence contributed to the TMI accident.

In September, 1980, Met Ed renamed itself GPU Nuclear. Met Ed continued to operate the plant and owned 50% of its assets.

On January 18, 1994 at the NRC's Advisory Panel meeting, GPU's President Robert E. Long stated that the Company had $104.7 million on hand to decommission TMI-2. GPU's spokesperson, Mary Wells said, "We have a detailed plan in place to make sure that the money is going to be there."

On September 20, 1995, the Pennsylvania Supreme Court reversed a lower court's decision, and sided with GPU in allowing the Company to charge rate payers for the TMI-2 accident. One billion has been spent to defuel the plant, which now lays in idle shutdown, i.e., Post-Defueling Monitored Storage.

By February, 1997, GPU reported in its *1997 Annual Report* that the cost to decommission TMI-2 doubled in four years. The original $200 million projection has been increased to $399 million for radioactive decommissioning. An additional $34 million will be needed for non-radiological decommissioning.

The new funding "target" was $433 million or a $328.3 million increase in just 48 months.

On July 17, 1998, AmerGen Energy announced that it reached an Agreement with GPU to purchase TMI-1 for $100 million. The proposed sale includes $23 million for the fuel inventory.

On July 21, 1999, GPU Nuclear received permission form the NRC to reduce the insurance at TMI-2 from $1.06 billion to $50 million.

On December 20, 1999, TMI-'s license was transferred from GPU Nuclear to AmerGen. TMI-2 remains a GPU possession in placed in Post-Defueling Monitored Storage in 1992. GPU contracts with AmerGen to maintain a skeletal staff presence at TMI-2.

On August 9, 2000, FirstEnergy and GPU announced a planned merger expected to be finalized by August 2001. FENOC would acquire GPU for approximately $4.5 billion. Ownership of TMI-2 and liability for 1,990 health suits against GPU would be transferred to FirstEnergy.

In November, 2001, TMI-2 was formally transferred from GPU Nuclear to FirstEnergy. GPU Nuclear retains the license for TMI-2 and is owned by FirstEnergy Nuclear Operating Company.

In 2006, according to the NRC, the radiological decommissioning cost estimate was $779 million and $26 million for non-radiological funds. The amount in the decommissioning trust fund was $559 million as of December 31, 2006.

In 2007 the TMI-2 site summary for 2007, the NRC's website, "The current radiological decommissioning cost estimate is $805 million and $27 million for non-radiological funds. The current amount in the decommissioning trust fund is $601 million, as of December 31, 2007."

And in 2008, according to the NRC, the radiological decommissioning cost estimate for TMI-2 was $831.5 million. The amount in the decommissioning trust fund was $484.5 million as of December 31, 2008.

According to the NRC, the cost to decommission TMI-2 has increased by $26.5 million in less than three years while FirstEnergy decommissioning trust fund's assets has decreased by $116.5 million during the same period.

Winter-Spring, 2010, FirstEnergy and Allegheny Energy filed merger applications with various state and federal agencies, but made no such filing with the Nuclear Regulatory Commission.

On February 11, 2010, Standard & Poor's downgraded FirstEnergy's debt: "We downgraded FirstEnergy Corp. and subsidiaries to 'BBB-' from 'BBB' based on its intention to merge with lower-rated Allegheny Energy Inc."

IV. Site Status Summary.

The NRC's website stated on September 30, 2010:

"The Three Mile Island, Unit 2 (TMI-2) operating license was issued on February 8, 1978, and commercial operation was declared on December 30, 1978. On March 28, 1979, the unit experienced an accident which resulted in severe damage to the reactor core. TMI-2 has been in a non-operating status since that time. The licensee conducted a substantial program to defuel the reactor vessel and decontaminate the facility. All spent fuel has been removed except for some debris in the reactor coolant system. The plant defueling was completed in April 1990. The removed fuel is currently in storage at Idaho National Laboratory, and the U.S. Department of Energy has taken title and possession of the fuel. TMI-2 has been defueled and decontaminated to the extent the plant is in a safe, inherently stable condition suitable for long-term management. This long-term management condition is termed post-defueling monitored storage, which was approved in 1993. There is no significant dismantlement underway. The plant shares equipment with the operating TMI - Unit 1. TMI-1 was sold to AmerGen (now Exelon) in 1999. GPU Nuclear retains the license for TMI-2 and is owned by FirstEnergy Corp. GPU contracts with Exelon for maintenance and surveillance activities. The licensee plans to actively decommission TMI-2 in parallel with the decommissioning of TMI-1. The current radiological decommissioning cost estimate is **$831.5 million.** The current amount in the decommissioning trust fund is **$484.5 million,** as of December 31, 2008." (**Boldface type added**.) (12)

Estimated Date For Closure: 12/31/2036

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12 US, Nuclear Regulatory Commission, Three Mile Island - Unit 2, License No.: DPR-73 Docket No.: 50-320, License Status: Possession Only License.

http://www.nrc.gov/info-finder/decommissioning/power-reactor/three-mile-island-unit-2.html.

V. Demand for Information.

Its prudent for the Commission to respond to Mr. Epstein's Petition requesting a Demand for Information in a expedited manner based on the timing of the proposed merger.

1) Mr. Epstein respectfully requests that the NRC Issue a Demand for Information to FirstEnergy for a **site-specific** decommissioning funding plan for TMI-2.

2) Mr. Epstein respectfully requests that the NRC Issue a Demand for Information to FirstEnergy requesting FENOC's site-specific funding plan for the TMI-2 decommissioning trust **after the rate caps expire** for Metropolitan Edison and Penn Elec on December 31, 2010.

3) The current radiological decommissioning cost estimate is **$831.5 million.** As of December 31, 2008, the amount in the decommissioning trust fund was **$484.5 million.**

This is not a de minimis shortfall.

Mr. Epstein respectfully requests that the NRC Issue a Demand for Information to FirstEnergy relating to FENOC's investment plan to make-up the current decommissioning **shortfall.**

4) Mr. Epstein respectfully requests that the NRC Issue a Demand for Information to FirstEnergy regarding FENOC's proposed **financial contribution** plan to make-up the current decommissioning shortfall.

5) The Company anticipates that the nuclear generating stations will operate at least until the end of their current licensed lives. In the event that any of the stations are retired early, the Company anticipates that funding will be adjusted to match any change in decommissioning schedule and/or cost scenario.

Mr. Epstein respectfully requests that the NRC Issue a Demand for Information to FirstEnergy relating to the Company's plan to **fund the** decommissioning trust for TMI-2, if TMI-1 is prematurely retired.

6) The Company anticipates that the nuclear generating stations will operate at least until the end of their current licensed lives. In the event that any of the stations are retired early, the Company anticipates that funding will be adjusted to match any change in decommissioning schedule and/or cost scenario.

Mr. Epstein respectfully requests that the NRC Issue a Demand for Information to FirstEnergy relating to the Company's **planned timing** for decommissioning TMI-2, if TMI-1 is prematurely retired.

Additionally, Mr. Epstein requests that the Nuclear Regulatory Commission:

(a) Provide Eric Joseph Epstein with copies of all correspondence sent to First Energy regarding this Petition.

(b) Provide Mr. Epstein with advance notice of all public and private meetings conducted by the Agency with regarding this Petition.

(c) Provide Mr. Epstein with an opportunity to participate in all relevant phone calls between NRC staff and FirstEnergy regarding this Petition.

(d) Provide Mr. Epstein with copies of all correspondence sent to Members of Congress and/or industry organizations (e.g., the Nuclear Energy Institute, the Electric Power Research Institute, the Institute for Nuclear Power Operations, Commonwealth of Pennsylvania) Department of Justice, the Securities and Exchange Commission regarding this Petition.

Respectfully submitted,

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Enclosure

Dated: September 30, 2010.

CERTIFICATE OF SERVICE

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Enclosure 2

TMIA: About Three Mile Island Alert

Three Mile Island Alert (TMIA) is a non-profit citizens' organization formed in 1977. Over the years, TMIA has been in the forefront, actively involved with many Three Mile Island-related issues including:

- active intervener before the Nuclear Regulatory Commission (NRC) in hearings involving safety, technical and managerial issues;
- monitoring and tracking chronic safety, technical and managerial problems at Unit-1 and Unit-2;
- tracking adverse health effects as a result of the TMI-2 accident and the normal operation of Unit-1 (since 1974);
- participating in two radiation monitoring networks;
- evaluating security problems at the Island; and,
- providing information, research, and educational materials to the general public, the news media, scholars, and elected officials.

TMIA's achievements include:

- a landslide vote in a referendum against restarting Unit I after the accident:
- relief for ratepayers from accident-related expenses;
- creation of the TMI Health Fund;
- establishment of monitoring systems around the plant;
- successfully lobbying for vehicle barriers at nuclear plants;
- the defeat of efforts to create a permanent low-level radioactive waste dump in Pennsylvania;
- successfully lobbying for potassium iodide stockpiling near nuclear facilities;
- getting day care centers and nursery schools included in evacuation plans;
- helping establish wind energy and other alternatives to nuclear power;
- maintaining a regular dialog with the utility, state government, and municipal leaders;
- staging of numerous rallies, meetings, conferences, fund raising events and the continuous publication of newsletters; and,
- a coordinating role for the many safe-energy groups and individuals who have done battle with the nuclear power establishment.

TMIA also serves as regional clearinghouse on a broad spectrum of issues relating to nuclear power production including problems at Peach Bottom-2 and -3, Susquehanna-1 and -2. The organization has enjoyed wide public and political support in its watchdog role. In the spring of 2003, TMIA was recognized by the Pennsylvania House and Senate, along with the City of Harrisburg, for TMIA's efforts on behalf of the community at TMIA's 25th anniversary.

TMIA's policy is formulated by a planning council that meets regularly. The organization relies heavily on volunteers who staff the office, maintain our web site, and write, edit, and mail TMIA's newsletter. All of TMIA's funding comes from membership dues, private contributions, and fund raising events.

TMIA's office is open by appointment. The public and all interested parties are encouraged to contact the group by phone (717-233-7897) or to visit our web site at http://www.tmia.com or the Three Mile Island Alert Facebook page.

TMIA's Planning Council

Chairperson - Eric Joseph Epstein
Mr. Epstein has been involved with research into decommissioning, decontamination, emergency planning, and nuclear safety at the Peach Bottom, Three Mile Island, and Susquehanna nuclear power plants for 35 years. He has written numerous professional papers, contributed to publications, and provided testimony regarding utility rates, electric power competition, and radioactive waste isolation.

Vice Chairperson - Bill Cologie
Bill has owned and operated Transit News, the newsstand at Harrisburg's train station, for more than 25 years. He serves as editor of *The Alert*, TMIA's newsletter.

Secretary/Treasurer - Kay Pickering
Kay, who has made a career of volunteerism, is one of the founders and organizers of TMIA. She has been TMIA's office staff person for its entire history. She also does volunteer work for the Harrisburg Center for Peace and Justice and is a Board Member of the Neighborhood Dispute Resolution Center. She has a BS in nursing from Earlham College in Richmond, Indiana.

Tom Bailey
Tom Bailey was forced to go home to Mechanicsburg, Cumberland County on March 28, 1979 when Elizabethtown College closed. An activist, he filed a contempt of court motion with Judge Sylvia Rambo in oversight of the TMIA Public Health Fund in late 1980s. The Public Health Fund's counsel had refused to release Bernd Franke's monitoring plan for Three Mile Island Nuclear Plant as Judge Rambo had ordered. Most recently, in late 2018 and early 2019, he delivered Open Letters to both the International Olympic Committee and United Nations' Economic & Social Council seeking international action to seal off the Fukushima Daiichi Nuclear Plant in Japan during the Tokyo Olympics. He and his wife reside in Scottdale, PA, near Pittsburgh.

Maureen Mulligan
Maureen is an energy consultant who specializes in renewable energy and energy efficiency issues. Before starting her own business she managed the education program of the Pennsylvania Public Utility Commission whose electric restructuring campaign was rated the best in the country by USA Today. She has a Master's Degree in Government Administration from the University of Pennsylvania and lives with her husband on an organic farm in a Perry County intentional community.

Scott D. Portzline
Scott D. Portzline has researched sabotage and terrorism protection of nuclear power plants since 1984. His research has been cited by the U.S. Department of Energy, the U.S. Department of Homeland Security (DHS), and The Center for International and Strategic Affairs. He has testified in hearings to the U.S. Senate, the PA House of Representatives, and several other governmental bodies. He received official commendations from the PA Auditor General, The PA Senate and the Dauphin County Commissioners for his research and citizen activism. His efforts have helped to resolve problems with security vulnerabilities at U.S. nuclear plants and with lost and stolen radioactive materials in the U.S. He has been featured on most of the major network television news programs and several national magazines and newspapers.

Enclosure 3

The projected percentage of spent nuclear fuel stored in dry casks at Exelon's Limerick and Peach Bottom sites as of July 1, 2019 is listed below:

- Limerick 1 and 2: 20+%.
- Peach Bottom 2: 55+%.*
- Peach Bottom 3: 55+%*

The percentage of spent nuclear fuel stored in dry casks at Exelon's Three Mile Island Unit-1 site as of July 1, 2019 is listed below:

- Three Mile Island-1: 0%.

* The costs were underwritten by the Company. At Peach Bottom, costs may have been apportioned proportionally based on ownership percentages between Exelon and PSE&G. Monies from the Department of Energy's Agreement with Exelon and PSE&G may have been used to pay for dry casks at Limerick and Peach Bottom.

Enclosure 4

HOLTEC INTERNATIONAL

NRC Approves Oyster Creek License Transfer to Holtec for Decommissioning

June 20, 2019

The Nuclear Regulatory Commission (NRC) approved the transfer of the Oyster Creek Generating Station operating license today from Exelon Generation to Holtec International. The NRC review confirmed that Holtec met the regulatory, legal, technical and financial requirements to merit qualification as the successor licensee of the plant.

"This rapid regulatory approval is a significant achievement for our company and the industry as we undertake the prompt decommissioning of Oyster Creek," said Holtec President and Chief Executive Officer, Dr. Kris Singh. "Approval of the License Transfer in a mere nine months from the date of application is a testament to the strong regulatory and financial profile of our company, the quality of our submittal to the NRC and the organizational efficiency of the NRC."

With the NRC's approval now received, Exelon Generation and Holtec will formally complete the transaction, which is slated to occur in July. Holtec will then assume ownership of the site, real property and used nuclear fuel. Holtec will also assume the responsibility to conservatively manage the plant's decommissioning trust fund (DTF), which will cover the cost of

decommissioning.

As the NRC license holder, Holtec will be responsible for the decontamination and decommissioning of the plant. Holtec hopes to render the site free of all radioactive materials by shipping the site's used nuclear fuel to its consolidated interim storage (CIS) facility called HI-STORE that the company is presently licensing in New Mexico. In the meantime, the canisters containing the spent nuclear fuel shall be safely stored at the Oyster Creek site under the custody of Holtec's security organization.

Around 200 employees are expected to remain at the station during this phase of decommissioning. The number of employees needed is based on the decommissioning strategy.

"We are grateful to the dedicated men and women who safely operated Oyster Creek for nearly 50 years and to those who will transition to decommissioning the plant safely and swiftly," said Carol Peterson, Exelon Nuclear senior vice president, Strategy and Planning. "We also wish to express our deep appreciation to the local community for its long-standing and ongoing support of the station."

"We will do as much as we can to continue providing an economic benefit to the community," said Holtec Senior Vice President and Chief Nuclear Officer, Pierre Oneid. "We are pleased to report that more than 200 Oyster Creek employees have accepted employment offers and will support our decommissioning efforts. In addition, the decommissioning project will draw an influx of specialized decommissioning personnel who will join the project at different stages, boosting the local economy."

In addition to Oyster Creek, Holtec previously announced agreements to purchase from Entergy the Indian Point, Palisades and Pilgrim nuclear units, including the independent spent fuel storage facility located at Big Rock Point. The closing of the sale of Pilgrim, a plant design similar to that of Oyster Creek, in Massachusetts, is expected to occur in third quarter as well.

"Decommissioning both Pilgrim and Oyster Creek will yield excellent operational synergies, enabling us to adopt best practices and methodologies to maximize safety and efficiency at both sites," said Holtec Senior Vice President and Chief Strategy Officer, Joy Russell.

Holtec International Overview

Holtec International is a privately held energy technology company with operation centers in Florida, New Jersey, Ohio and Pennsylvania in the U.S., and globally in Brazil, Dubai, India, South Africa, Spain, U.K. and Ukraine. Holtec's principal business concentration is in the nuclear power industry. Holtec has played a preeminent role since the 1980s in expanding nuclear plants' wet spent fuel storage capacity at over 110 reactor units in the U.S. and abroad. Dry storage and transport of nuclear fuel is another area in which Holtec is recognized as the foremost innovator and industry leader with a dominant market share and an active market presence at over 115 reactor units around the globe. Among the Company's pioneering endeavors is the world's first below-ground Consolidated Interim Storage Facility being developed in New Mexico and a 160-Megawatt walk away safe small modular reactor, SMR-160. The SMR-160 is developed to bring cost competitive carbon-free energy to all corners of the earth. Holtec is also a major supplier of special-purpose pressure vessels and critical-service heat exchange equipment such as air-cooled condensers, steam generators, feedwater heaters, and water-cooled condensers. Virtually all products produced by the company are built in its three large manufacturing plants in the U.S. and one in India. Thanks to a solid record of consistent profitability and steady growth since its founding in 1986, Holtec has no history of any long-term debt and enjoys a platinum credit rating from the financial markets. Nearly 100 U.S. and international patents protect the Company's intellectual property from predation by its global competitors and lend predictable stability to its business base.

HH 34.09 Download

Enclosure 5

CHAPTER 54. ELECTRICITY GENERATION CUSTOMER CHOICE

Subch. **Sec.**

Cross References

This chapter is cited in 52 Pa. Code § 69.1802 (relating to purpose); 52 Pa. Code § 75.67 (relating to alternative energy cost-recovery); 52 Pa. Code § 111.5 (relating to agent training); 52 Pa. Code § 111.9 (relating to door-to-door sales); and 52 Pa. Code § 111.10 (relating to telemarketing).

Subchapter A. CUSTOMER INFORMATION

Sec.

1996 Act 138

ASSOCIATIONS CODE (15 PA.C.S.) AND PUBLIC UTILITY CODE (66 PA.C.S.) - AMEND

Act of Dec. 3, 1996, P.L. 802, No. 138 Cl. 74

Session of 1996
No. 1996-138

HB 1509

AN ACT

Amending Titles 15 (Corporations and Unincorporated Associations) and 66 (Public Utilities) of the Pennsylvania Consolidated Statutes, providing for generation choice for customers of electric cooperatives and utilities; further providing for definitions; reenacting procedural requirements for taxicab certificates and medallions; providing for restructuring of the electric utility industry; and further providing for taxation.

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

Section 1. Title 15 of the Pennsylvania Consolidated Statutes is amended by adding a chapter to read:

CHAPTER 74
GENERATION CHOICE FOR CUSTOMERS
OF ELECTRIC COOPERATIVES

§ 7401. Short title of chapter.

This chapter shall be known and may be cited as the Electricity Generation Choice for Customers of Electric Cooperatives Act.

Generation Choice for Customers of Electric Cooperatives Act.

§ 7402. Application.

The provisions of 66 Pa.C.S. Ch. 28 (relating to restructuring of electric utility industry) shall not apply to electric cooperative corporations or to the laws relating to electric cooperative corporations.

§ 7403. Declaration of policy.

The General Assembly finds and declares as follows:

(1) Because of advances in electric generation technology and Federal initiatives to encourage greater competition in the wholesale electric market, it is now in the public interest to permit retail customers to obtain direct access to a competitive generation market as long as safe and affordable service is available at levels of reliability that are currently enjoyed by the citizens and businesses of this Commonwealth.

(2) Electric cooperative corporations which own and operate electric generation, transmission or distribution facilities in this Commonwealth, which are operated on a nonprofit basis and which are owned and are democratically controlled by the member-consumers which they serve are an essential part of the rural infrastructure and an important participant in the economic development and vitality of significant areas of this Commonwealth.

(3) In providing for customer choice for the member-consumers of electric cooperative corporations, the financial integrity, operations and independence of electric cooperative corporations must be protected and preserved, while comparable standards are provided for electric suppliers for the provision of service to new loads, by providing for the continued exemption for electric cooperative corporations from the jurisdiction and control of the commission and by providing for a separate system of choice for persons in the service territories of electric cooperative corporations.

(4) The complete right of electric cooperative corporations to compete with others in providing electric and other services must be provided for throughout this Commonwealth.

§ 7404. Definitions.

The following words and phrases when used in this chapter shall have the meanings given to them in this section unless the context clearly indicates otherwise:

"Commission." The Pennsylvania Public Utility Commission.

"Departing member." A member-consumer served at retail by an electric cooperative corporation that has given notice of intent to receive generation service from another source or that is otherwise in the process of changing generation suppliers. These persons shall nonetheless remain members of the electric distribution cooperative corporation for purposes of distribution service.

"Electric-consuming facilities." As defined in section 7352 (relating to definitions).

"Retail electric service." As defined in section 7352 (relating to definitions).

"Service territory." The service territory of electric cooperative corporations established in Chapter 73 (relating to electric cooperative corporations) as interpreted by existing case law.

"Transition surcharge." The total stranded costs payable to an electric cooperative corporation as a condition precedent to a consumer member of an electric cooperative corporation having the

Title 66

Public Utilities

Chapter 28. Restructuring of Electric Utility Industry

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Duties of electric distribution companies.

§ 2808.
Competitive transition charge.

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Requirements for electric generation suppliers.

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CHAPTER 69. GENERAL ORDERS, POLICY STATEMENTS AND GUIDELINES ON FIXED UTILITIES

FUEL PROCUREMENT POLICIES AND PROCEDURES

Sec.

SAFETY AND RELIABILITY GUIDELINES

COMMISSION POLICY STATEMENT ON ELECTRIC UTILITY FINANCING OF ENERGY SUPPLY ALTERNATIVES

FUEL PROCUREMENT POLICIES AND PROCEDURES

§ 69.1. General.

(a) Since 66 Pa.C.S. § 1307 (relating to sliding scale of rates; adjustments), enables a utility to pass fuel costs directly to the ratepayers, a utility has the highest degree of responsibility to take aggressive action on behalf of its ratepayers to control fuel costs. A utility should use every means reasonably available to monitor and enforce vendor adherence to all aspects of fuel procurement agreements. In addition to contract adherence, the Commission may exercise its independent right to review whether each utility purchases the lowest cost fuel that meets the necessary standards and specifications, which may include a review to determine if the utility is continually, thoroughly and aggressively searching the fuel market for reasonably priced fuel. The Commission may make constructive suggestions with regard to an individual company's fuel procurement policies and procedures from time to time.

(b) The purpose of § § 69.1—69.2, 69.4 and 69.5 (relating to fuel procurement policies and procedures) is to establish guidelines that the Commission recommends an electric utility follow in its fuel procurement activities. The Commission realizes that fuel procurement practices of utilities may differ depending on individual circumstances. However, the Commission believes that there are certain common procedures that will result in the lowest reasonable fuel costs. The Commission defines lowest reasonable cost to be fuel purchases that result in the lowest generating costs. This fuel should be consistent with contracted quality, regulatory requirements and prevailing wage rates, and may or may not be the lowest priced fuel.

(c) If a utility believes that an otherwise nonconforming fuel procurement policy will, in the long term, result in lower costs, the utility should submit the details of the policy for review by the Commission prior to implementation.

(d) If it appears, through Commission review, that nonconforming fuel procurement practices have resulted in excessive fuel costs, a utility may be required to demonstrate the reasonableness of the costs.

(e) If the Commission determines after notice and hearing that a utility's nonconforming fuel procurement policy has resulted in unreasonable fuel costs, the utility shall be required to apply credits against the applicable energy cost rate or to make refunds to its customers.

(f) In order for the Commission to monitor fuel costs properly, a utility should record fuel prices FOB supplier with transportation costs reported separately. For contracts which state only

delivered costs, the company should impute transportation costs and report those costs separately.

(g) Sections 69.1—69.2, 69.4 and 69.5 represent the standard by which the Commission intends to assess a utility's fuel purchasing policies and procedures. Sections 69.1—69.2, 69.4 and 69.5 serve as notice to electric utilities of the Commission's expectations with regard to fuel procurement policies and procedures. Utilities should apply § § 69.1—69.2, 69.4 and 69.5 prospectively in planning fuel purchases. Where provisions of existing contracts are in conflict with § § 69.1—69.2, 69.4 and 69.5, utilities need not seek to immediately amend the contracts, but should move towards the policies set forth in § § 69.1—69.2, 69.4 and 69.5 as contracts are modified, renegotiated or extended.

Authority

The provisions of this § 69.1 issued under Public Utility Code,the Public Utility Code, 66 Pa.C.S. § § 501, 1301 and 1307.

Source

The provisions of this § 69.1 amended October 18, 1985, effective October 19, 1985, 15 Pa.B. 3730. Immediately preceding text appears at serial page (33013).

POLICY STATEMENT ON NUCLEAR FUEL PROCUREMENT GUIDELINES

§ 69.201. General.

(a) Since 66 Pa.C.S. § 1307 (relating to sliding scale of rates; adjustments) enables a utility to collect certain fuel costs on a dollar-for-dollar basis from its ratepayers, a utility has the highest degree of responsibility to take aggressive action on behalf of its ratepayers to control nuclear fuel costs. A utility should use every means reasonably available to monitor and enforce vendor adherence to all aspects of nuclear fuel procurement agreements. In addition to contract adherence, the Pennsylvania Public Utility Commission (Commission) may exercise its independent right to review each utility's purchasing practices, which may include a review to determine if the utility is actively making every effort to secure competitive sources for every phase of the nuclear fuel cycle and is obtaining its nuclear fuel at the lowest reasonable cost. The Commission defines "lowest reasonable cost," relating to nuclear fuel procurement, as contracting for or purchasing nuclear fuel at the lowest available price without sacrificing dependability or quality of service. The Commission may make constructive suggestions with regard to an individual company's nuclear fuel procurement policies and procedures from time to time. As the process of acquiring nuclear fuel is somewhat more complex than fossil fuel, an explanation has been included to describe in general terms the elements of the nuclear fuel procurement process.

(b) The purpose of § § 69.202—69.206 is to establish guidelines that the Commission recommends an electric utility follow in its nuclear fuel procurement activities. The Commission realizes that nuclear fuel procurement policies of utilities may differ depending on individual circumstances. The Commission believes that there are certain common practices that will result in the lowest rea

sonable nuclear fuel costs. Nuclear fuel procurement should be consistent with regulatory requirements, and may or may not result in the lowest priced nuclear fuel.

(c) If a utility believes that a nuclear fuel procurement policy that differs from that described in § § 69.202—69.206 will, in the long term, result in lower costs, the utility should submit the details of the policy for review by the Commission prior to implementation.

(d) If it appears through Commission review, that nuclear fuel procurement practices which differ from those described in this section and § § 69.202—69.207 have resulted in unreasonable nuclear fuel costs, a utility may be requested by the Commission to demonstrate the

reasonableness of the costs.

(e) If the Commission determines after notice and hearing that a utility's nuclear fuel procurement practices which differ from those described in this section and § § 69.202—69.207 have resulted in unreasonable nuclear fuel costs, the utility will be required to apply credits against the applicable energy cost rate or to make refunds to its customers.

(f) Specifications for the procurement of nuclear fuel should not be set at quantity levels which would preclude competitive proposals from reliable and competent suppliers. Investigations should be conducted to insure that potential vendors have adequate owned or contracted supplies to fulfill all contract provisions.

(g) Sections 69.202—69.206 represent the standard by which the Commission intends to assess the reasonableness of a utility's nuclear fuel purchasing policies and practices. Sections 69.202—69.206 serve as notice to electric utilities of the Commission's expectations with regard to nuclear fuel procurement policies and practices. Utilities should apply § § 69.202—69.206 prospectively in planning nuclear fuel purchases. If provisions of existing contracts are in conflict with § § 69.202—69.206, utilities need not seek to immediately amend the contracts, but should move towards the policies in § § 69.202—69.206 as contracts are modified, renegotiated or extended. Prior imprudent activities are not deemed to be exonerated with the promulgation of this section.

Source

The provisions of this § 69.201 adopted March 29, 1991, effective May 30, 1991, 21 Pa.B. 1331.

Cross References

This section cited in 52 Pa. Code § 69.205 (relating to purchasing procedures); and 52 Pa. Code § 69.206 (relating to inventory management).

---

§ 69.206. Inventory management.

(a) A utility should have a written policy stating its nuclear fuel inventory management objectives. The policy should include inventory target levels, ordering points or cycles, and the like.

(b) The term "inventory," for the purpose of this section, § § 609.201—69.205 and 69.207, includes uranium in the form of U_3O_8 or natural and enriched UF_6 in process or in storage and all other uranium which is already processed but not in the reactor—for example, fabricated fuel assemblies—and held in storage.

(c) The inventory management objectives should be reevaluated annually for conformance with supply and demand conditions as they exist in the nuclear fuel marketplace. The written inventory management objectives should be revised if it is determined through the reevaluation process, that the objectives are not synchronized with current market conditions.

(d) A utility has an obligation to its ratepayers to maintain its nuclear fuel inventory at a level which achieves optimum fuel cost savings without endangering normal plant operations. When determining the proper inventory level, the use of innovative core design solutions to accommodate the unexpected loss of nuclear fuel assemblies should be considered.

(e) A utility will be expected to justify, for recovery purposes, the costs associated with carrying excess levels of inventory. Excess inventory levels are defined as those levels which exceed the quantity necessary to satisfy, per licensed nuclear generating unit, one standard reload in process, that is, conversion, enrichment or fabrication. Completely fabricated fuel assemblies should be held in storage no longer than 4 months before they are loaded into the reactor. The Pennsylvania Public Utility Commission (Commission) recognizes that nuclear fuel inventories in excess of the levels in this subsection are occasionally necessary and proper. The utility shall be able to cost justify the excess amounts. A demonstrable, extraordinary operational requirement or nuclear fuel market situation may provide an instance where excess inventory levels could be deemed proper.

(f) Pertinent data, related to this subsection, should be retained by the utility in accordance with the Federal Energy Regulatory Commission's Record Retention Table and made available for Commission review upon request.

Source

The provisions of this § 69.206 adopted March 29, 1991, effective May 30, 1991, 21 Pa.B. 1331.

Cross References

This section cited in 52 Pa. Code § 69.201 (relating to general); and 52 Pa. Code § 69.205 (relating to purchasing procedures).

Enclosure 7

17 August 2004

The US Department of Energy (DoE) has reached a settlement with Exelon over the cost of interim storage of spent nuclear fuel.

Under the 1982 Nuclear Waste Policy Act, the DoE would take title to spent nuclear fuel from utilities and the military and store it permanently by 1998. In return, utilities paid one tenth of a cent into the Federal Waste Fund for each kWh generated to pay for a storage facility.

However, no such storage facility was ready by 1998 and utilities across the country were forced to build interim stores for their wastes to last until the opening of the Yucca Mountain facility, currently planned for 2010. The Exelon settlement is the first of the dozens of compensations cases are currently pending in the US Court of Federal Claims (see NEI July 2004, p8).

Peach Bottom's inventory includes 20 dry casks amounting to 2000 tons of spent fuel and casings. In addition, Exelon expects to begin storing dry casks at its Quad Cities plant next year, and the Limerick plant by 2008.

Exelon will be paid $80 million immediately to cover costs already incurred for storage at Peach Bottom and Oyster Creek while further amounts will be paid each year until the DoE takes title to Exelon's wastes. If Yucca Mountain opens in 2010, Exelon should receive a total of about $300 million, but because the agreement is open-ended, Exelon will continue to receive funds while they hold the waste. If, for example, the Yucca Mountain facility does not open until 2015, payments to Exelon could amount to $600 million.

The money will come from the US government's Judgement Fund, created to settle claims against the government, not the Waste Fund.

Part of the $80 million payment will be split between co-owners of certain plants, reducing Exelon's final share to $53 million and Exelon must also repay $43 million that the DoE paid in credits to PECO, a company now owned by Exelon, under a 1998 agreement.

President of Exelon Nuclear, Chris Crane said: "We're pleased with the result. It resolves the litigation between the parties, it eliminates a financial uncertainty for both Exelon and DoE and it allows the government to meet its obligations."

Related Articles
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CRS REPORT
Prepared for Members and
Committees of Congress

Summary

Management of civilian radioactive waste has posed difficult issues for Congress since the beginning of the nuclear power industry in the 1950s. Federal policy is based on the premise that nuclear waste can be disposed of safely, but proposed storage and disposal facilities have frequently been challenged on safety, health, and environmental grounds. Although civilian radioactive waste encompasses a wide range of materials, most of the current debate focuses on highly radioactive spent fuel from nuclear power plants. The United States currently has no disposal facility for spent nuclear fuel.

The Nuclear Waste Policy Act of 1982 (NWPA) calls for disposal of spent nuclear fuel in a deep geologic repository. NWPA established the Office of Civilian Radioactive Waste Management (OCRWM) in the Department of Energy (DOE) to develop such a repository, which would be licensed by the Nuclear Regulatory Commission (NRC). Amendments to NWPA in 1987 restricted DOE's repository site studies to Yucca Mountain in Nevada. DOE submitted a license application for the proposed Yucca Mountain repository to NRC on June 3, 2008. The state of Nevada strongly opposes the Yucca Mountain project, citing excessive water infiltration, earthquakes, volcanoes, human intrusion, and other technical issues.

The Obama Administration "has determined that developing the Yucca Mountain repository is not a workable option and the Nation needs a different solution for nuclear waste disposal," according to the DOE FY2011 budget justification. As a result, no funding for Yucca Mountain, OCRWM, or NRC licensing was requested or provided for FY2011 or subsequent years. DOE filed a motion with NRC to withdraw the Yucca Mountain license application on March 3, 2010. An NRC licensing board denied DOE's withdrawal motion on June 29, 2010, a decision sustained by the NRC commissioners on a tie vote September 9, 2011. Despite that decision, NRC halted further consideration of the license application because of "budgetary limitations," but a federal appeals court on August 13, 2013, ordered NRC to continue the licensing process with previously appropriated funds.

After halting the Yucca Mountain project, the Administration established the Blue Ribbon Commission on America's Nuclear Future to develop an alternative nuclear waste policy. The commission issued its final report on January 26, 2012, recommending that a new, "single-purpose organization" be given the authority and resources to promptly begin developing one or more nuclear waste repositories and consolidated storage facilities. The commission recommended a "consent based" process for siting nuclear waste storage and disposal facilities and that long-term research, development, and demonstration be conducted on technologies that could provide waste disposal benefits.

After OCRWM was dismantled, responsibility for implementing the Administration's nuclear waste policy was given to DOE's Office of Nuclear Energy (NE). In January 2013, NE issued a nuclear waste strategy based on the Blue Ribbon Commission recommendations. The strategy calls for a pilot interim storage facility for spent fuel from closed nuclear reactors to open by 2021 and a larger storage facility, possibly at the same site, to open by 2025. A site for a permanent underground waste repository would be selected by 2026, and the repository would open by 2048. DOE requested $79 million for FY2015 to carry out the new waste strategy. The House voted to provide $150 million for DOE to continue Yucca Mountain licensing, while the Senate Appropriations Subcommittee on Energy and Water Development recommended $89 million to develop a consolidated spent fuel temporary storage facility.

Other Programs

Other types of civilian radioactive waste have also generated public controversy, particularly low-level waste, which is produced by nuclear power plants, medical institutions, industrial operations, and research activities. Civilian low-level waste currently is disposed of in large trenches at sites in the states of South Carolina, Texas, and Washington. However, the Washington facility does not accept waste from outside its region, and the South Carolina site is available only to the three members of the Atlantic disposal compact (Connecticut, New Jersey, and South Carolina) as of June 30, 2008. The lowest-concentration class of low-level radioactive waste (class A) is accepted by a Utah commercial disposal facility from anywhere in the United States.

Threats by states to close their disposal facilities led to congressional authorization of regional compacts for low-level waste disposal in 1985. The first, and so far only, new disposal site under the regional compact system opened on November 10, 2011, near Andrews, TX.[23] The Texas Legislature approved legislation in May 2011 to allow up to 30% of the facility's capacity to be used by states outside the Texas Compact, which consists of Texas and Vermont.[24]

Nuclear Waste Litigation

NWPA Section 302 authorized DOE to enter into contracts with U.S. generators of spent nuclear fuel and other highly radioactive waste; under the contracts, DOE was to dispose of the waste in return for a fee on nuclear power generation. The act prohibited nuclear reactors from being licensed to operate without a nuclear waste disposal contract with DOE, and all reactor operators subsequently signed them. As required by NWPA, the "standard contract" specified that DOE would begin disposing of nuclear waste no later than January 31, 1998.[25]

After DOE missed the contractual deadline, nuclear utilities began filing lawsuits to recover their additional storage costs—costs they would not have incurred had DOE begun accepting waste in 1998 as scheduled. DOE reached its first settlement with a nuclear utility, PECO Energy Company (now part of Exelon), on July 19, 2000. The agreement allowed PECO to keep up to $80 million in nuclear waste fee revenues during the subsequent 10 years. However, other utilities sued DOE to block the settlement, contending that nuclear waste fees may be used only for the DOE waste program and not as compensation for missing the disposal deadline. The U.S. Court of Appeals for the 11th Circuit agreed, ruling September 24, 2002, that any compensation would have to come from general revenues or other sources than the waste fund. Subsequent nuclear waste compensation to utilities has come from the U.S. Treasury's Judgment Fund, a permanent account that is used to cover damage claims against the U.S. government. Payments from the Judgment Fund do not require appropriations.

Through FY2013, nuclear waste payments from the Judgment Fund included $2.67 billion from settlements and $990.9 million from final court judgments, for a total of about $3.7 billion,

[23] Waste Control Specialists LLC, "Historic Texas Compact Disposal Facility Ready for Business," http://www.wcstexas.com.

[24] Waste Control Specialists LLC, "Waste Control Specialists Commends Passage of Legislation," press release, May 31, 2011, http://www.wcstexas.com/PDF_downloads/WCSAnnounceslegislation.pdf?nxd_id=98546.

[25] The Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste can be found at 10 CFR 961.11.

project and develop a new waste strategy through the Blue Ribbon Commission on America's Nuclear Future have brought most activities in the DOE waste program to a halt. Congress is continuing to debate the project's termination, particularly through the appropriations process. The NRC staff's finding in October 2014 that the Yucca Mountain would meet NRC standards after the repository was filled and sealed has intensified criticism of the Administration's nuclear waste policy.

Because of their waste-disposal contracts with DOE, owners of existing reactors are likely to continue seeking damages from the federal government if disposal delays continue. For example, DOE's 2004 settlement with the nation's largest nuclear operator, Exelon, could require payments of up to $600 million from the federal judgment fund. DOE estimates that payments could rise above $20 billion if the federal government cannot begin taking waste from reactor sites before 2020, as previously planned. The nuclear industry has predicted that future damages could rise by tens of billions of dollars if the federal disposal program fails altogether.

Lack of a nuclear waste disposal system could also affect the licensing of proposed new nuclear plants, both because of NRC licensing guidelines and various state laws.[104] In addition, further repository delays could force DOE to miss compliance deadlines for defense waste disposal.

Problems being created by nuclear waste disposal delays were addressed by the Blue Ribbon Commission in its final report, issued in January 2012. Major options include centralized interim storage, continued storage at existing nuclear sites, reprocessing and waste treatment technology, development of alternative repository sites, or a combination. The commission recommended that a congressionally chartered corporation be established to undertake a negotiated process for siting new waste storage and disposal facilities. However, given the delays resulting from the ongoing shutdown of the nuclear waste program, longer on-site storage is almost a certainty under any option. Any of the options would also face intense controversy, especially among states and regions that might be potential hosts for future waste facilities. As a result, substantial debate would be expected over any proposals to change the Nuclear Waste Policy Act, including those of the Blue Ribbon Commission.

Selected Legislation

H.R. 2081 (Thornberry)

No More Excuses Energy Act of 2013. Includes provisions to prohibit NRC from considering nuclear waste storage when licensing new nuclear facilities, and to establish a tax credit for obtaining nuclear component manufacturing certification. Introduced May 21, 2013; referred to multiple committees.

H.R. 2609 (Frelinghuysen)/S. 1245 (Feinstein)

Energy and Water Development and Related Agencies Appropriations Act, 2014. Provides funding for DOE nuclear programs and NRC. House bill introduced July 2, 2013; reported as

[104] Lovell, David L., Wisconsin Legislative Council Staff, *State Statutes Limiting the Construction of Nuclear Power Plants*, October 5, 2006.

Enclosure 8

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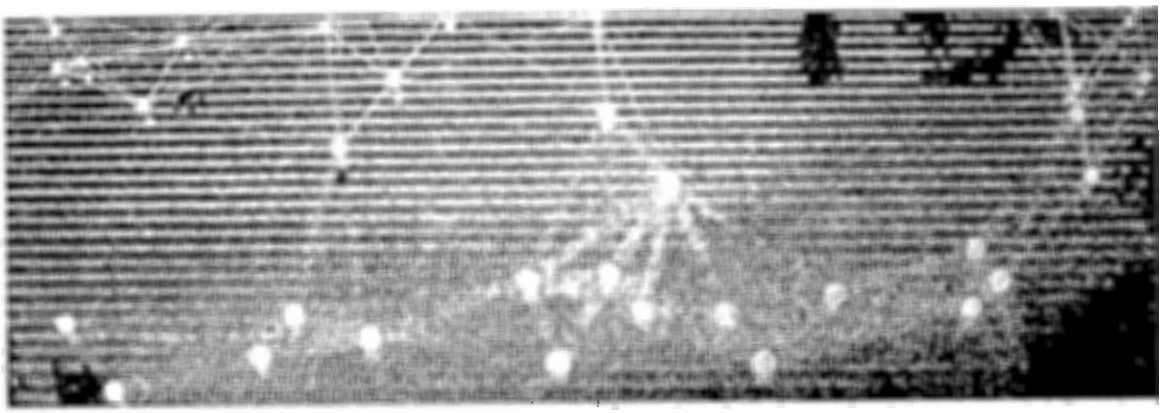

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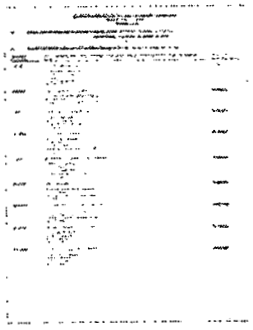

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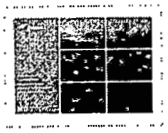

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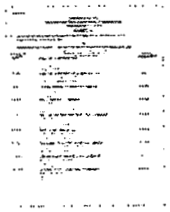

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Sector: Utilities (See More Utilities Companies)

Exelon.

Exelon Corporation 2017 Annual Report

Taxes Other Than Income

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016. The increase in taxes other than income was primarily due to increased real estate taxes and sales and use taxes.

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015. The increase in taxes other than income was primarily due to an increase in gross receipts tax.

Gain (Loss) on Sales of Assets

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016. The increase in gain (loss) on sales of assets is primarily due to certain Generation projects and contracts being terminated or renegotiated in 2016, partially offset by a gain associated with Generation's sale of the retired New Boston generating site in 2016.

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015. The decrease in gain (loss) on sales of assets is primarily related to the one-time recognition for a loss on sale of assets pursuant to Generation's strategic decision in the fourth quarter of 2016 to narrow the scope and scale of its growth and development activities, partially offset by a gain associated with Generation's sale of the retired New Boston generating site in 2016.

Bargain Purchase Gain

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016. The increase in the Bargain purchase gain is related to the result of the gain associated with the FitzPatrick acquisition. Refer to Note 4 — Mergers, Acquisitions and Dispositions of the Combined Notes to the Consolidated Financial Statements for additional information.

Gain on Deconsolidation of Business

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016. The increase in the Gain on deconsolidation of business is related to the deconsolidation of EGTP's net liabilities, which included the previously impaired assets and related debt, as a result of the November 2017 bankruptcy filing. Refer to Note 4 — Mergers, Acquisitions and Dispositions of the Combined Notes to the Consolidated Financial Statements for additional information.

Interest Expense

The changes in interest expense for 2017 compared to 2016 and 2016 compared to 2015 consisted of the following:

	Increase (Decrease) 2017 vs. 2016	Increase (Decrease) 2016 vs. 2015
Interest expense on long-term debt	$ —	$ 8
Interest expense on interest rate swaps	(2)	1
Interest expense on tax settlements	12	16
Other interest expense	66	(26)
(Decrease) increase in interest expense, net	$76	$ (1)

Other, Net

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016. The increase in Other, net primarily reflects the net increase in realized and unrealized gains related to the NDT fund investments of Generation's Non-Regulatory Agreement Units as described in the table below. Other, net also reflects $209 million and $80 million for the years ended December 31, 2017 and 2016, respectively, related to the contractual elimination of income tax expense associated with the NDT fund investments of the Regulatory Agreement Units. Refer to Note 15 — Asset Retirement Obligations of the Combined Notes to Consolidated Financial Statements for additional information regarding NDT fund investments.

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015. The increase in Other, net primarily reflects the net increase in realized and unrealized gains related to the NDT fund investments of Generation's Non-Regulatory Agreement Units as described in the table below. Other, net also reflects $80 million and $(22) million for the years ended December 31, 2016 and 2015, respectively, related to the contractual elimination of income tax expense associated with the NDT fund investments of the Regulatory Agreement Units. Refer to Note 15 — Asset Retirement Obligations of the Combined Notes to Consolidated Financial Statements for additional information regarding NDT fund investments.

Electric Revenue	2017	2016	% Change 2017 vs. 2016	2015	% Change 2016 vs. 2015
Retail Sales[a]					
Residential	$ 619	$ 664	(6.8)%	$ 690	(3.8)%
Small commercial & industrial	166	183	(9.3)%	175	4.6%
Large commercial & industrial	189	201	(6.0)%	213	(5.6)%
Public authorities & electric railroads	13	13	—%	12	8.3%
Total retail	987	1,061	(7.0)%	1,090	(2.7)%
Other revenue[b]	199	196	1.5%	205	(4.4)%
Total electric revenue[c]	$1,186	$1,257	(5.6)%	$1,295	(2.9)%

[a] Reflects delivery volumes and revenues from customers purchasing electricity directly from ACE and customers purchasing electricity from a competitive electric generation supplier as all customers are assessed distribution charges. For customers purchasing electricity from ACE, revenue also reflects the cost of energy and transmission.

[b] Other revenue includes transmission revenue from PJM and wholesale electric revenues.

[c] Includes operating revenues from affiliates totaling $2 million, $3 million and $4 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Liquidity and Capital Resources

Exelon activity presented below includes the activity of PHI, Pepco, DPL and ACE, from the PHI Merger effective date of March 24, 2016 through December 31, 2017. Exelon prior year activity is unadjusted for the effects of the PHI Merger. Due to the application of push-down accounting to the PHI entity, PHI's activity is presented in two separate reporting periods, the legacy PHI activity through March 23, 2016 (Predecessor), and PHI activity for the remainder of the period after the PHI merger date (Successor). For each of Pepco, DPL and ACE the activity presented below include its activity for the years ended December 31, 2017, 2016 and 2015. All results included throughout the liquidity and capital resources section are presented on a GAAP basis.

The Registrants' operating and capital expenditures requirements are provided by internally generated cash flows from operations as well as funds from external sources in the capital markets and through bank borrowings. The Registrants' businesses are capital intensive and require considerable capital resources. Each Registrant's access to external financing on reasonable terms depends on its credit ratings and current overall capital market business conditions, including that of the utility industry in general. If these conditions deteriorate to the extent that the Registrants no longer have access to the capital markets at reasonable terms, the Registrants have access to unsecured revolving credit facilities with aggregate bank commitments of $9 billion. In addition, Generation has $480 million in bilateral facilities with banks which have various expirations between January 2019 and December 2019. The Registrants utilize their credit facilities to support their commercial paper programs, provide for other short-term borrowings and to issue letters of credit. See the "Credit Matters" section below for further discussion. The Registrants expect cash flows to be sufficient to meet operating expenses, financing costs and capital expenditure requirements.

The Registrants primarily use their capital resources, including cash, to fund capital requirements, including construction expenditures, retire debt, pay dividends, fund pension and other postretirement benefit obligations and invest in new and existing ventures. The Registrants spend a significant amount of cash on capital improvements and construction projects that have a long-term return on investment. Additionally, ComEd, PECO, BGE, Pepco, DPL and ACE operate in rate-regulated environments in which the amount of new investment recovery may be delayed or limited and where such recovery takes place over an extended period of time. See Note 13 — Debt and Credit Agreements of the Combined Notes to Consolidated Financial Statements for further discussion of the Registrants' debt and credit agreements.

NRC Minimum Funding Requirements

NRC regulations require that licensees of nuclear generating facilities demonstrate reasonable assurance that sufficient funds will be available in certain minimum amounts to decommission the facility. These NRC minimum funding levels are based upon the assumption that decommissioning activities will commence after the end of the current licensed life of each unit. If a unit fails the NRC minimum funding test, then the plant's owners or parent companies would be required to take steps, such as providing financial guarantees through letters of credit or parent company guarantees or making additional cash contributions to the NDT fund to ensure sufficient funds are available. See Note 15 - Asset Retirement Obligations of the Combined Notes to Consolidated Financial Statements for additional information on the NRC minimum funding requirements.

If a nuclear plant were to early retire there is a risk that it will no longer meet the NRC minimum funding requirements due to the earlier commencement of decommissioning activities and a shorter time period over which the NDT fund investments could appreciate in value. A shortfall could require Exelon to post

parental guarantees for Generation's share of the obligations. However, the amount of any required guarantees will ultimately depend on the decommissioning approach adopted at each site, the associated level of costs, and the decommissioning trust fund investment performance going forward. Within two years after shutting down a plant, Generation must submit a post-shutdown decommissioning activities report (PSDAR) to the NRC that includes the planned option for decommissioning the site. As discussed in Note 15 - Asset Retirement Obligations of the Combined Notes to Consolidated Financial Statements, Generation filed its biennial decommissioning funding status report with the NRC on March 31, 2017 and demonstrated adequate funding assurance for all nuclear units currently operating. As of December 31, 2017, across the four alternative decommissioning approaches available, Generation estimates a parental guarantee of up to $90 million from Exelon could be required for TMI, dependent upon the ultimate decommissioning approach selected. For Oyster Creek, none of the alternative decommissioning approaches available would require Exelon to post a parental guarantee. In the event PSEG decides to early retire Salem, Generation estimates a parental guarantee of up to $45 million from Exelon could be required for Salem, dependent upon the ultimate decommissioning approach selected.

Upon issuance of any required financial guarantees, each site would be able to utilize the respective NDT funds for radiological decommissioning costs, which represent the majority of the total expected decommissioning costs. However, the NRC must approve an additional exemption in order for the plant's owner(s) to utilize the NDT fund to pay for non-radiological decommissioning costs (i.e., spent fuel management and site restoration costs). If a unit does not receive this exemption, the costs would be borne by the owner(s). While the ultimate amounts may vary greatly and could be reduced by alternate decommissioning scenarios and/or reimbursement of certain costs under the United States Department of Energy reimbursement agreements or future litigation, across the four alternative decommissioning approaches available, if TMI or Oyster Creek were to fail to obtain the exemption, Generation estimates it could incur spent fuel management and site restoration costs over the next ten years of up to $225 million and $200 million net of taxes, respectively, dependent upon the ultimate decommissioning approach selected. In the event PSEG decides to early retire Salem and Salem were to fail to obtain the exemption, Generation estimates it could incur spent fuel management and site restoration costs over the next ten years of up to $80 million net of taxes.

Junior Subordinated Notes

In June 2014, Exelon issued $1.15 billion of junior subordinated notes in the form of 23 million equity units at a stated amount of $50.00 per unit. Each equity unit represented an undivided beneficial ownership interest in Exelon's $1.15 billion of 2.50% junior subordinated notes due in 2024 ("2024 notes") and a forward equity purchase contract. As contemplated in the June 2014 equity unit structure, in April 2017, Exelon completed the remarketing of the 2024 notes into $1.15 billion of 3.497% junior subordinated notes due in 2022 ("Remarketing"). Exelon conducted the Remarketing on behalf of the holders of equity units and did not directly receive any proceeds therefrom. Instead, the former holders of the 2024 notes used debt remarketing proceeds towards settling the forward equity purchase contract with Exelon on June 1, 2017. Exelon issued approximately 33 million shares of common stock from treasury stock and received $1.15 billion upon settlement of the forward equity purchase contract. When reissuing treasury stock Exelon uses the average price paid to repurchase shares to calculate a gain or loss on issuance and records gains or losses directly to retained earnings. A loss on reissuance of treasury shares of $1.05 billion was recorded to retained earnings as of December 31, 2017. See Note 21 — Earnings Per Share of the Combined Notes to Consolidated Financial Statements for further information on the issuance of common stock.

basis and the carrying value approximates fair value (Level 2). When trading data is available on variable rate financing debt, the fair value is based on market and quoted prices for its own and other nonrecourse debt with similar risk profiles (Level 2). Generation, Pepco, DPL and ACE also have tax-exempt debt (Level 2). Due to low trading volume in this market, qualitative factors, such as market conditions, investor demand, and circumstances related to the issuer (e.g., conduit issuer political and regulatory environment), may be incorporated into the credit spreads that are used to obtain the fair value as described above. Variable rate tax-exempt debt (Level 2) resets on a regular basis and the carrying value approximates fair value.

SNF Obligation. The carrying amount of Generation's SNF obligation (Level 2) is derived from a contract with the DOE to provide for disposal of SNF from Generation's nuclear generating stations. When determining the fair value of the obligation, the future carrying amount of the SNF obligation is calculated by compounding the current book value of the SNF obligation at the 13-week Treasury rate. The compounded obligation amount is discounted back to present value using Generation's discount rate, which is calculated using the same methodology as described above for the taxable debt securities, and an estimated maturity date of 2030. The carrying amount also includes $114 million as of December 31, 2017 for the one-time fee obligation associated with closing of the FitzPatrick acquisition on March 31, 2017. The fair value was determined using a similar methodology, however the New York Power Authority's (NYPA) discount rate is used in place of Generation's given the contractual right to reimbursement from NYPA for the obligation; see Note 4 - Mergers, Acquisitions and Dispositions for additional information on Generation's acquisition of FitzPatrick.

Long-Term Debt to Financing Trusts. Exelon's long-term debt to financing trusts is valued based on publicly traded securities issued by the financing trusts. Due to low trading volume of these securities, qualitative factors, such as market conditions, investor demand, and circumstances related to each issue, this debt is classified as Level 3.

Recurring Fair Value Measurements

Exelon records the fair value of assets and liabilities in accordance with the hierarchy established by the authoritative guidance for fair value measurements. The hierarchy prioritizes the inputs to valuation techniques used to measure fair value into three levels as follows:

- Level 1 — quoted prices (unadjusted) in active markets for identical assets or liabilities that the Registrants have the ability to liquidate as of the reporting date.
- Level 2 — inputs other than quoted prices included within Level 1 that are directly observable for the asset or liability or indirectly observable through corroboration with observable market data.
- Level 3 — unobservable inputs, such as internally developed pricing models or third-party valuations for the asset or liability due to little or no market activity for the asset or liability.

Transfers in and out of levels are recognized as of the end of the reporting period when the transfer occurred. Given derivatives categorized within Level 1 are valued using exchange-based quoted prices within observable periods, transfers between Level 2 and Level 1 were not material. Additionally, there were no material transfers between Level 1 and Level 2 during the years ended December 31, 2017 and 2016 for Cash equivalents, Nuclear decommissioning trust fund investments, Pledged assets for Zion Station decommissioning, Rabbi trust investments, and Deferred compensation obligations. For derivative contracts, transfers into Level 2 from Level 3 generally occur when the contract tenor becomes more observable and due to changes in market liquidity or assumptions for certain commodity contracts.

In accordance with the applicable guidance on fair value measurement, certain investments that are measured at fair value using the NAV per share as a practical expedient are no longer classified within the fair value hierarchy and are included under "Not subject to leveling" in the table below.

15. Asset Retirement Obligations

Nuclear Decommissioning Asset Retirement Obligations

Generation has a legal obligation to decommission its nuclear power plants following the expiration of their operating licenses. To estimate its decommissioning obligation related to its nuclear generating stations for financial accounting and reporting purposes, Generation uses a probability-weighted, discounted cash flow model which, on a unit-by-unit basis, considers multiple outcome scenarios that include significant estimates and assumptions, and are based on decommissioning cost studies, cost escalation rates, probabilistic cash flow models and discount rates. Generation updates its ARO annually unless circumstances warrant more frequent updates, based on its review of updated cost studies and its annual evaluation of cost escalation factors and probabilities assigned to various scenarios.

The following table provides a rollforward of the nuclear decommissioning ARO reflected on Exelon's Consolidated Balance Sheets, from January 1, 2016 to December 31, 2017:

Nuclear decommissioning ARO at January 1, 2016	$8,246
Accretion expense	436
Net increase for changes in and timing of estimated future cash flows	61
Costs incurred related to decommissioning plants	(9)
Nuclear decommissioning ARO at December 31, 2016[a]	8,734
Accretion Expense	458
Acquisition of FitzPatrick	444
Net increase for changes in and timing of estimated future cash flows	34
Costs incurred related to decommissioning plants	(8)
Nuclear decommissioning ARO at December 31, 2017[a]	9,662

[a] Includes $13 million and $10 million as the current portion of the ARO at December 31, 2017 and 2016, respectively, which is included in Other current liabilities on Exelon's and Generation's Consolidated Balance Sheets.

During 2017, Generation's total nuclear ARO increased by approximately $928 million, primarily reflecting year-to-date accretion of the ARO liability due to the passage of time, the recording of the fair value of the ARO, including subsequent purchase accounting adjustments, for the acquisition of FitzPatrick (see Note 4—Mergers, Acquisitions and Dispositions), the announced early retirement of TMI, and impacts of ARO updates completed during 2017 to reflect changes in amounts and timing of estimated decommissioning cash flows.

The net $34 million increase in the ARO during 2017 for changes in the amounts and timing of estimated decommissioning cash flows was driven by multiple adjustments throughout the year, some with offsetting impacts. These adjustments include a $178 million increase due to higher assumed probabilities of early retirement of Salem and a $138 million increase in TMI's ARO liability associated with the May 30, 2017 announcement to early retire the unit on September 30, 2019. The increase in the ARO liability for TMI incorporates the early shutdown date, increases the probabilities of longer term decommissioning scenarios, and reflects an increase in the estimated costs to decommission based on an updated decommissioning cost study. See Note 8—Early Nuclear Plant Retirements for additional information regarding Salem and TMI. These increases in the ARO were partially offset by a $180 million decrease for refinements in estimated fleet wide labor costs expected to be incurred for certain on-site personnel during decommissioning as well as net decreases resulting from updates to the cost studies of Clinton, Quad Cities and Dresden.

During 2016, Generation's ARO increased by approximately $488 million, primarily reflecting year-to-date accretion of the ARO liability of approximately $436 million due to the passage of time and impacts of ARO updates completed during 2016 to reflect changes in amounts and timing of estimated decommissioning cash flows. The $61 million increase in the ARO during 2016 for changes in the amounts and timing of estimated decommissioning cash flows was driven by multiple adjustments throughout the year, some with offsetting impacts. These adjustments include increases of $288 million resulting from the change in the assumed DOE spent fuel acceptance date for disposal from 2025 to 2030 as well as increases resulting from updates to the cost studies of Oyster Creek, Zion, Calvert Cliffs, Ginna and Nine Mile Point. These increases were partially offset by a decrease of $165 million resulting from changes to the decommissioning scenarios and their probabilities as well as reductions in estimated cost escalation rates, primarily for labor, energy and waste burial costs. Most of the increase to the ARO resulting from the June 2, 2016, announcement to early retire Clinton and Quad Cities was reversed pursuant to the December 7, 2016, enactment of the Illinois FEJA. See Note 8—Early Nuclear Plant Retirements for additional information.

Nuclear Decommissioning Trust Fund Investments

NDT funds have been established for each generation station unit to satisfy Generation's nuclear decommissioning obligations. Generally, NDT funds established for a particular unit may not be used to fund the decommissioning obligations of any other unit.

The NDT funds associated with Generation's nuclear units have been funded with amounts collected from the previous owners and their respective utility customers. PECO is authorized to collect funds, in revenues, for decommissioning the former PECO nuclear plants through regulated rates, and these collections are scheduled through the operating lives of the former PECO plants. The amounts collected from PECO customers are remitted to Generation and deposited into the NDT funds for the unit for which funds are collected. Every five years, PECO files a rate adjustment with the PAPUC that reflects PECO's calculations of the estimated amount needed to decommission each of the former PECO units based on updated fund balances and estimated decommissioning costs. The rate adjustment is used to determine the amount collectible from PECO customers. On March 31, 2017, PECO filed its Nuclear Decommissioning Cost Adjustment (NDCA) with the PAPUC proposing an annual recovery from customers of approximately $4 million. This amount reflects a decrease from the current approved annual collection of approximately $24 million primarily due to the removal of the collections for Limerick Units 1 and 2 as a result of the NRC approving the extension of the operating licenses for an additional 20 years. On August 8, 2017, the PAPUC approved the filing and the new rates became effective January 1, 2018.

Any shortfall of funds necessary for decommissioning, determined for each generating station unit, is ultimately required to be funded by Generation, with the exception of a shortfall for the current decommissioning activities at Zion Station, where certain decommissioning activities have been transferred to a third-party (see Zion Station Decommissioning below) and the CENG units, where any shortfall is required to be funded by both Generation and EDF. Generation, through PECO, has recourse to collect additional amounts from PECO customers related to a shortfall of NDT funds for the former PECO units, subject to certain limitations and thresholds, as prescribed by an order from the PAPUC. Generally, PECO, and likewise Generation will not be allowed to collect amounts associated with the first $50 million of any shortfall of trust funds compared to decommissioning costs, as well as 5% of any additional shortfalls, on an aggregate basis for all former PECO units. The initial $50 million and up to 5% of any additional shortfalls would be borne by Generation. No recourse exists to collect additional amounts from utility customers for any of Generation's other nuclear units. With respect to the former ComEd and PECO units, any funds remaining in the NDTs after all decommissioning has been completed are required to be refunded to ComEd's or PECO's customers, subject to certain limitations that allow sharing of excess funds with Generation related to the former PECO units. With respect to Generation's other nuclear units, Generation retains any funds remaining after decommissioning. However, in connection with CENG's acquisition of the Nine Mile Point and Ginna plants and settlements with certain regulatory agencies, CENG is subject to certain conditions pertaining to nuclear decommissioning trust funds that, if met, could possibly result in obligations to make payments to certain third parties (clawbacks). For Nine Mile Point and Ginna, the clawback provisions are triggered only in the event that the required decommissioning activities are discontinued or not started or completed in a timely manner. In the event that the clawback provisions are triggered for Nine Mile Point, then, depending upon the triggering event, an amount equal to 50% of the total amount withdrawn from the funds for non-decommissioning activities or 50% of any excess funds in the trust funds above the amounts required for decommissioning (including spent fuel management and decommissioning) is to be paid to the Nine Mile Point sellers. In the event that the clawback provisions are triggered for Ginna, then an amount equal to any estimated cost savings realized by not completing any of the required decommissioning activities is to be paid to the Ginna sellers. Generation expects to comply with applicable regulations and timely commence and complete all required decommissioning activities.

At December 31, 2017 and 2016, Exelon and Generation had NDT fund investments totaling $13,349 million and $11,061 million, respectively. The increase is primarily driven by improved market performance and the acquisition of FitzPatrick. For additional information related to the NDT fund investments, refer to Note 11—Fair Value of Financial Assets and Liabilities.

The following table provides unrealized gains on NDT funds for 2017, 2016 and 2015:

	For the Years Ended December 31,		
	2017	2016	2015
Net unrealized gains (losses) on decommissioning trust funds—Regulatory Agreement Units[a]	$455	$216	$(282)
Net unrealized gains (losses) on decommissioning trust funds—Non-Regulatory Agreement Units[b][c]	521	194	(197)

[a] Net unrealized gains (losses) related to Generation's NDT funds associated with Regulatory Agreement Units are included in Regulatory liabilities on Exelon's Consolidated Balance Sheets and Noncurrent payables to affiliates on Generation's Consolidated Balance Sheets.

[b] Excludes $(10) million, $(1) million and $7 million of net unrealized gains (losses) related to the Zion Station pledged assets in 2017, 2016 and 2015, respectively. Net unrealized gains related to Zion Station pledged assets are included in the Other current liabilities and Payable for Zion Station decommissioning on Exelon's and Generation's Consolidated Balance Sheets in 2017 and 2016, respectively.

[c] Net unrealized gains (losses) related to Generation's NDT funds with Non-Regulatory Agreement Units are included within Other, net in Exelon's and Generation's Consolidated Statements of Operations and Comprehensive Income.

Interest and dividends on NDT fund investments are recognized when earned and are included in Other, net in Exelon's and Generation's Consolidated Statements of Operations and Comprehensive Income. Interest and dividends earned on the NDT fund investments for the Regulatory Agreement Units are eliminated within Other, net in Exelon's and Generation's Consolidated Statement of Operations and Comprehensive Income.

Accounting Implications of the Regulatory Agreements with ComEd and PECO

Based on the regulatory agreement with the ICC that dictates Generation's obligations related to the shortfall or excess of NDT funds necessary for decommissioning the former ComEd units on a unit-by-unit basis, as long as funds held in the NDT funds are expected to exceed the total estimated decommissioning obligation, decommissioning-related activities, including realized and unrealized gains and losses on the NDT funds and accretion of the decommissioning obligation, are generally offset within Exelon's and Generation's Consolidated Statements of Operations and Comprehensive Income. The offset of decommissioning-related activities within the Consolidated Statement of Operations and Comprehensive Income results in an equal adjustment to the noncurrent payables to affiliates at Generation and an adjustment to the regulatory liabilities at Exelon. Likewise, ComEd has recorded an equal noncurrent affiliate receivable from Generation and corresponding regulatory liability. Should the expected value of the NDT fund for any former ComEd unit fall below the amount of the expected decommissioning obligation for that unit, the accounting to offset decommissioning-related activities in the Consolidated Statement of Operations and Comprehensive Income for that unit would be discontinued, the decommissioning-related activities would be recognized in the Consolidated Statements of Operations and Comprehensive Income and the adverse impact to Exelon's and Generation's results of operations and financial positions could be material. As of December 31, 2017, the NDT funds of each of the former ComEd units, except for Zion (see Zion Station Decommissioning below), are expected to exceed the related decommissioning obligation for each of the units. For the purposes of making this determination, the decommissioning obligation referred to is different, as described below, from the calculation used in the NRC minimum funding obligation filings based on NRC guidelines.

Based on the regulatory agreement supported by the PAPUC that dictates Generation's rights and obligations related to the shortfall or excess of trust funds necessary for decommissioning the former PECO units, regardless of whether the funds held in the NDT funds are expected to exceed or fall short of the total estimated decommissioning obligation, decommissioning-related activities are generally offset within Exelon's and Generation's Consolidated Statements of Operations and Comprehensive Income. The offset of decommissioning-related activities within the Consolidated Statement of Operations and Comprehensive Income results in an equal adjustment to the noncurrent payables to affiliates at Generation and an adjustment to the regulatory liabilities at Exelon. Likewise, PECO has recorded an equal noncurrent affiliate receivable from Generation and a corresponding regulatory liability. Any changes to the PECO regulatory agreements could impact Exelon's and Generation's ability to offset decommissioning-related activities within the Consolidated Statement of Operations and Comprehensive Income, and the impact to Exelon's and Generation's results of operations and financial positions could be material.

The decommissioning-related activities related to the Non-Regulatory Agreement Units are reflected in Exelon's and Generation's Consolidated Statements of Operations and Comprehensive Income.

Refer to Note 3—Regulatory Matters and Note 26—Related Party Transactions for information regarding regulatory liabilities at ComEd and PECO and intercompany balances between Generation, ComEd and PECO reflecting the obligation to refund to customers any decommissioning-related assets in excess of the related decommissioning obligations.

Zion Station Decommissioning

On September 1, 2010, Generation completed an Asset Sale Agreement (ASA) with EnergySolutions Inc. and its wholly owned subsidiaries, EnergySolutions, LLC (EnergySolutions) and ZionSolutions, under which ZionSolutions has assumed responsibility for decommissioning Zion Station, which is located in Zion, Illinois and ceased operation in 1998. Specifically, Generation transferred to ZionSolutions substantially all of the assets (other than land) associated with Zion Station, including assets held in related NDT funds. In consideration for Generation's transfer of those assets, ZionSolutions assumed decommissioning and other liabilities, excluding the obligation to dispose of SNF and decommission the SNF dry storage facility, associated with Zion Station. Pursuant to the ASA, ZionSolutions will periodically request reimbursement from the Zion Station-related NDT funds for costs incurred related to its decommissioning efforts at Zion Station. During 2013, EnergySolutions entered a definitive acquisition agreement and was acquired by another company. Generation reviewed the acquisition as it relates to the ASA to decommission Zion Station. Based on that review, Generation determined that the acquisition will not adversely impact decommissioning activities under the ASA.

ZionSolutions is subject to certain restrictions on its ability to request reimbursements from the Zion Station NDT funds as defined within the ASA. Therefore, the transfer of the Zion Station assets did not qualify for asset sale accounting treatment and, as a result, the related NDT funds were reclassified to Pledged assets for Zion Station decommissioning within Generation's and Exelon's Consolidated Balance Sheets and will continue to be measured in the same manner as prior to the completion of the transaction. Additionally, the transferred ARO for decommissioning was replaced with a Payable for Zion Station decommissioning in Generation's and Exelon's Consolidated Balance Sheets. Changes in the value of the Zion Station NDT assets, net of applicable taxes, will be recorded as a change in the Payable to ZionSolutions. At no point will the payable to ZionSolutions exceed the project budget of the costs remaining to decommission Zion Station. Generation has retained its obligation for the SNF. Following ZionSolutions' completion of its contractual obligations and transfer of the NRC license to Generation, Generation will store the SNF at Zion Station until it is transferred to the DOE for ultimate disposal, and will complete all remaining decommissioning activities associated with the SNF dry storage facility. Generation has a liability of approximately $114 million, which is included within the nuclear decommissioning ARO at December 31, 2017. Generation also has retained NDT assets to fund its obligation to maintain the SNF at Zion Station until transfer to the DOE and to complete all remaining decommissioning activities for the SNF storage facility. Any shortage of funds necessary to maintain the SNF and decommission the SNF storage facility is ultimately required to be funded by Generation. Any Zion Station NDT funds remaining after the completion of all decommissioning activities will be returned to ComEd customers in accordance with the applicable orders. The following table provides the pledged assets and payables to ZionSolutions, and withdrawals by ZionSolutions at December 31, 2017 and 2016:

	2017	2016
Carrying value of Zion Station pledged assets[a]	$ 39	$ 113
Payable to Zion Solutions[b]	37	104
Current portion of payable to Zion Solutions[c]	37	90
Cumulative withdrawals by Zion Solutions to pay decommissioning costs[d]	942	878

[a] Included in Other current assets within Exelon's and Generation's Consolidated Balance Sheets in 2017.

[b] Excludes a liability recorded within Exelon's and Generation's Consolidated Balance Sheets related to the tax obligation on the unrealized activity associated with the Zion Station NDT Funds. The NDT Funds will be utilized to satisfy the tax obligations as gains and losses are realized.

[c] Included in Other current liabilities within Exelon's and Generation's Consolidated Balance Sheets.

[d] Includes project expenses to decommission Zion Station and estimated tax payments on Zion Station NDT fund earnings.

ZionSolutions leased the land associated with Zion Station from Generation pursuant to a Lease Agreement. Under the Lease Agreement, ZionSolutions has committed to complete the required decommissioning work according to an established schedule and constructed a dry cask storage facility on the land and has loaded the SNF from the SNF pools onto the dry cask storage facility at Zion Station. Rent payable under the Lease Agreement is $1.00 per year, although the Lease Agreement requires ZionSolutions to pay property taxes associated with Zion Station and penalty rents may accrue if there are unexcused delays in the progress of decommissioning work at Zion Station or the construction of the dry cask SNF storage facility. To reduce the risk of default by ZionSolutions, EnergySolutions provided a $200 million letter of credit to be used to fund decommissioning costs in the event the NDT assets are insufficient. In accordance with the terms of the ASA, the letter of credit was reduced to $98 million in August 2017 due to the completion of key decommissioning milestones. EnergySolutions and its parent company have also provided a performance guarantee and EnergySolutions has entered into other agreements that will provide rights and remedies for Generation and the NRC in the case of other specified events of default, including a special purpose easement for disposal capacity at the EnergySolutions site in Clive, Utah, for all LLRW volume of Zion Station.

Zion Station Decommissioning

On September 1, 2010. Generation completed an Asset Sale Agreement (ASA) with EnergySolutions Inc. and its wholly owned subsidiaries. EnergySolutions, LLC (EnergySolutions) and ZionSolutions, under which ZionSolutions has assumed responsibility for decommissioning Zion Station, which is located in Zion, Illinois and ceased operation in 1998. Specifically, Generation transferred to ZionSolutions substantially all of the assets (other than land) associated with Zion Station, including assets held in related NDT funds. In consideration for Generation's transfer of those assets, ZionSolutions assumed decommissioning and other liabilities, excluding the obligation to dispose of SNF and decommission the SNF dry storage facility, associated with Zion Station. Pursuant to the ASA, ZionSolutions will periodically request reimbursement from the Zion Station-related NDT funds for costs incurred related to its decommissioning efforts at Zion Station. During 2013, EnergySolutions entered a definitive acquisition agreement and was acquired by another company. Generation reviewed the acquisition as it relates to the ASA to decommission Zion Station. Based on that review, Generation determined that the acquisition will not adversely impact decommissioning activities under the ASA.

ZionSolutions is subject to certain restrictions on its ability to request reimbursements from the Zion Station NDT funds as defined within the ASA. Therefore, the transfer of the Zion Station assets did not qualify for asset sale accounting treatment and, as a result, the related NDT funds were reclassified to Pledged assets for Zion Station decommissioning within Generation's and Exelon's Consolidated Balance Sheets and will continue to be measured in the same manner as prior to the completion of the transaction. Additionally, the transferred ARO for decommissioning was replaced with a Payable for Zion Station decommissioning in Generation's and Exelon's Consolidated Balance Sheets. Changes in the value of the Zion Station NDT assets, net of applicable taxes, will be recorded as a change in the Payable to ZionSolutions. At no point will the payable to ZionSolutions exceed the project budget of the costs remaining to decommission Zion Station. Generation has retained its obligation for the SNF. Following ZionSolutions' completion of its contractual obligations and transfer of the NRC license to Generation, Generation will store the SNF at Zion Station until it is transferred to the DOE for ultimate disposal, and will complete all remaining decommissioning activities associated with the SNF dry storage facility. Generation has a liability of approximately $114 million, which is included within the nuclear decommissioning ARO at December 31, 2017. Generation also has retained NDT assets to fund its obligation to maintain the SNF at Zion Station until transfer to the DOE and to complete all remaining decommissioning activities for the SNF storage facility. Any shortage of funds necessary to maintain the SNF and decommission the SNF storage facility is ultimately required to be funded by Generation. Any Zion Station NDT funds remaining after the completion of all decommissioning activities will be returned to ComEd customers in accordance with the applicable orders. The following table provides the pledged assets and payables to ZionSolutions, and withdrawals by ZionSolutions at December 31, 2017 and 2016:

	2017	2016
Carrying value of Zion Station pledged assets[a]	$ 39	$ 113
Payable to Zion Solutions[b]	37	104
Current portion of payable to Zion Solutions[c]	37	90
Cumulative withdrawals by Zion Solutions to pay decommissioning costs[d]	942	878

[a] Included in Other current assets within Exelon's and Generation's Consolidated Balance Sheets in 2017.

[b] Excludes a liability recorded within Exelon's and Generation's Consolidated Balance Sheets related to the tax obligation on the unrealized activity associated with the Zion Station NDT Funds. The NDT Funds will be utilized to satisfy the tax obligations as gains and losses are realized.

[c] Included in Other current liabilities within Exelon's and Generation's Consolidated Balance Sheets.

[d] Includes project expenses to decommission Zion Station and estimated tax payments on Zion Station NDT fund earnings.

ZionSolutions leased the land associated with Zion Station from Generation pursuant to a Lease Agreement. Under the Lease Agreement, ZionSolutions has committed to complete the required decommissioning work according to an established schedule and constructed a dry cask storage facility on the land and has loaded the SNF from the SNF pools onto the dry cask storage facility at Zion Station. Rent payable under the Lease Agreement is $1.00 per year, although the Lease Agreement requires ZionSolutions to pay property taxes associated with Zion Station and penalty rents may accrue if there are unexcused delays in the progress of decommissioning work at Zion Station or the construction of the dry cask SNF storage facility. To reduce the risk of default by ZionSolutions, EnergySolutions provided a $200 million letter of credit to be used to fund decommissioning costs in the event the NDT assets are insufficient. In accordance with the terms of the ASA, the letter of credit was reduced to $98 million in August 2017 due to the completion of key decommissioning milestones. EnergySolutions and its parent company have also provided a performance guarantee and EnergySolutions has entered into other agreements that will provide rights and remedies for Generation and the NRC in the case of other specified events of default, including a special purpose easement for disposal capacity at the EnergySolutions site in Clive, Utah, for all LLRW volume of Zion Station.

NRC Minimum Funding Requirements

NRC regulations require that licensees of nuclear generating facilities demonstrate reasonable assurance that funds will be available in specified minimum amounts to decommission the facility at the end of its life. The estimated decommissioning obligations as calculated using the NRC methodology differ from the ARO recorded on Generation's and Exelon's Consolidated Balance Sheets primarily due to differences in the type of costs included in the estimates, the basis for estimating such costs, and assumptions regarding the decommissioning alternatives to be used, potential license renewals, decommissioning cost escalation, and the growth rate in the NDT funds. Under NRC regulations, if the minimum funding requirements calculated under the NRC methodology are less than the future value of the NDT funds, also calculated under the NRC methodology, then the NRC requires either further funding or other financial guarantees.

Key assumptions used in the minimum funding calculation using the NRC methodology at December 31, 2017 include: (1) consideration of costs only for the removal of radiological contamination at each unit; (2) the option on a unit-by-unit basis to use generic, non-site specific cost estimates; (3) consideration of only one decommissioning scenario for each unit; (4) the plants cease operation at the end of their current license lives (with no assumed license renewals for those units that have not already received renewals and with an assumed end-of-operations date of 2018 for Oyster Creek and 2019 for TMI); (5) the assumption of current nominal dollar cost estimates that are neither escalated through the anticipated period of decommissioning, nor discounted using the CARFR; and (6) assumed annual after-tax returns on the NDT funds of 2% (3% for the former PECO units, as specified by the PAPUC).

In contrast, the key criteria and assumptions used by Generation to determine the ARO and to forecast the target growth in the NDT funds at December 31, 2017 include: (1) the use of site specific cost estimates that are updated at least once every five years; (2) the inclusion in the ARO estimate of all legally unavoidable costs required to decommission the unit (e.g., radiological decommissioning and full site restoration for certain units, on-site spent fuel maintenance and storage subsequent to ceasing operations and until DOE acceptance, and disposal of certain low-level radioactive waste); (3) the consideration of multiple scenarios where decommissioning and site restoration activities, as applicable, are completed under four possible scenarios ranging from 10 to 70 years after the cessation of plant operations; (4) the consideration of multiple end of life scenarios; (5) the measurement of the obligation at the present value of the future estimated costs and an annual average accretion of the ARO of approximately 5% through a period of approximately 30 years after the end of the extended lives of the units; and (6) an estimated targeted annual pre-tax return on the NDT funds of 4.8% to 6.4% (as compared to a historical 5-year annual average pre-tax return of approximately 8%).

Generation is required to provide to the NRC a biennial report by unit (annually for units that have been retired or are within five years of the current approved license life), based on values as of December 31, addressing Generation's ability to meet the NRC minimum funding levels. Depending on the value of the trust funds, Generation may be required to take steps, such as providing financial guarantees through letters of credit or parent company guarantees or making additional contributions to the trusts, which could be significant, to ensure that the trusts are adequately funded and that NRC minimum funding requirements are met. As a result, Exelon's and Generation's cash flows and financial positions may be significantly adversely affected.

Generation filed its biennial decommissioning funding status report with the NRC on March 31, 2017 for all units except for Zion Station which is included in a separate report to the NRC submitted by ZionSolutions (see Zion Station Decommissioning above) and FitzPatrick which is still owned by Entergy as of the NRC reporting period. This status report demonstrated adequate decommissioning funding assurance for all units except for Peach Bottom Unit 1. As a former PECO plant, financial assurance for decommissioning Peach Bottom Unit 1 is provided by the NDT fund in addition to collections from PECO ratepayers. As discussed under Nuclear Decommissioning Trust Fund Investments above, the amount collected from PECO ratepayers has been adjusted in the March 31, 2017 filing to the PAPUC which was approved on August 8, 2017 and effective on January 1, 2018.

Generation will file its next decommissioning funding status report with the NRC by March 31, 2018 for shutdown reactors and reactors within five years of shutdown. This report will reflect the status of decommissioning funding assurance as of December 31, 2017 and will include the early retirement of TMI announced on May 30, 2017, in addition to an adjustment for the February 2, 2018 announced retirement date for Oyster Creek. A shortfall at any unit could necessitate that Exelon post a parental guarantee for Generation's share of the funding assurance. However, the amount of any required guarantee will ultimately depend on the decommissioning approach adopted, the associated level of costs, and the decommissioning trust fund investment performance going forward.

As the future values of trust funds change due to market conditions, the NRC minimum funding status of Generation's units will change. In addition, if changes occur to the regulatory agreement with the PAPUC that currently allows amounts to be collected from PECO customers for decommissioning the former PECO units, the NRC minimum funding status of those plants could change at subsequent NRC filing dates.

ComEd, PECO, BGE, Pepco, DPL and ACE did not have any reclassifications out of AOCI to Net income during the years ended December 31, 2017 and 2016. The following tables present amounts reclassified out of AOCI to Net income for Exelon, Generation and PHI during the years ended December 31, 2017 and 2016:

FOR THE YEAR ENDED DECEMBER 31, 2017

Details about AOCI components	Items reclassified out of AOCI[a]	Affected line item in the Statement of Operations and Comprehensive Income
Gains and (losses) on cash flow hedges		
Other cash flow hedges	$ (5)	Interest expense
Total before tax	(5)	
Tax benefit	1	
Net of tax	$ (4)	Comprehensive income
Amortization of pension and other postretirement benefit plan items		
Prior service costs[b]	$ 92	
Actuarial losses[b]	(324)	
Total before tax	(232)	
Tax benefit	92	
Net of tax	$(140)	Comprehensive Income
Total Reclassifications	$(144)	Comprehensive income

FOR THE YEAR ENDED DECEMBER 31, 2016

Details about AOCI components	Items reclassified out of AOCI[a]	Affected line item in the Statement of Operations and Comprehensive Income
Loss on cash flow hedges		
Other cash flow hedges	$ (13)	Interest expense
Total before tax	(13)	
Tax benefit	5	
Net of tax	$ (8)	Comprehensive income
Amortization of pension and other postretirement benefit plan items		
Prior service costs[b]	$ 78	
Actuarial losses[b]	(302)	
Total before tax	(224)	
Tax benefit	87	
Net of tax	$(137)	Comprehensive Income
Losses on foreign currency translation		
Loss	$ (5)	Other income and (deductions)
Total before tax	(5)	
Tax benefit	—	
Net of tax	$ (5)	
Total Reclassifications	$(150)	Comprehensive income

[a] Amounts in parenthesis represent a decrease in net income.

[b] This AOCI component is included in the computation of net periodic pension and OPEB cost (see Note 16 — Retirement Benefits for additional details).

The following table presents income tax expense (benefit) allocated to each component of other comprehensive income (loss) during the years ended December 31, 2017 and 2016:

	For the Year Ended December 31,		
	2017	2016	2015
Pension and non-pension postretirement benefit plans:			
Prior service benefit reclassified to periodic benefit cost	$ 36	$ 30	$ 30
Actuarial loss reclassified to periodic benefit cost	(128)	(118)	(140)
Pension and non-pension postretirement benefit plans valuation adjustment	13	115	62
Change in unrealized loss on cash flow hedges	(7)	—	(6)
Change in unrealized (loss)/gain on equity investments	(3)	3	1
Change in unrealized loss on marketable securities	(1)	—	—
Total	$ (90)	$ 30	$ (53)

23. Commitments and Contingencies

Commitments

Constellation Merger Commitments

In February 2012, the MDPSC issued an Order approving the Exelon and Constellation merger. As part of the MDPSC Order, Exelon agreed to provide a package of benefits to BGE customers, the City of Baltimore and the State of Maryland, resulting in an estimated direct investment in the State of Maryland of approximately $1 billion.

The direct investment includes the construction of a new 21-story headquarters building in Baltimore for Generation's competitive energy business that was substantially complete in November 2016 and is now occupied by approximately 1,500 Exelon employees. Generation's investment includes leasehold improvements that are not expected to exceed $110 million. In addition, Generation entered into a 20-year operating lease as the primary lessee of the building.

The direct investment commitment also includes $450 million to $500 million relating to Exelon and Generation's development or assistance in the development of 285 - 300 MWs of new generation in Maryland, which is expected to be completed within a period of 10 years. The MDPSC order contemplates various options for complying with the new generation development commitments, including building or acquiring generating assets, making subsidy or compliance payments, or in circumstances in which the generation build is delayed or certain specified provisions are elected, making liquidated damages payments. Exelon and Generation have incurred $457 million towards satisfying the commitment for new generation development in the state of Maryland, with approximately 220 MW of the new generation commencing with commercial operations to date and an additional 10 MW commitment satisfied through a liquidated damages payment made in the fourth quarter of 2016. Additionally, during the fourth quarter of 2016, given continued declines in projected energy and capacity prices, Generation terminated rights to certain development projects originally intended to meet its remaining 55 MW commitment amount. The commitment will now most likely be satisfied via payment of liquidated damages or execution of a third party PPA, rather than by Generation constructing renewable generating assets. As a result, Exelon and Generation recorded a pre-tax $50 million loss contingency in Operating and maintenance expense in Exelon's and Generation's Consolidated Statements of Operations and Comprehensive Income for the year ended December 31, 2016.

Commercial Commitments

Exelon's commercial commitments as of December 31, 2017, representing commitments potentially triggered by future events, were as follows:

		Expiration within					
	Total	2018	2019	2020	2021	2022	2023 and beyond
Letters of credit (non-debt)[a]	$1,226	$1,056	$154	$16	$—	$—	$ —
Surety bonds[b]	1,381	1,293	66	16	6	—	—
Financing trust guarantees	378	—	—	—	—	—	378
Guaranteed lease residual values[c]	21	—	—	—	—	—	21
Total commercial commitments	$3,006	$2,349	$220	$32	$ 6	$—	$399

[a] Letters of credit (non-debt)—Exelon and certain of its subsidiaries maintain non-debt letters of credit to provide credit support for certain transactions as requested by third parties.

(b) Surety bonds—Guarantees issued related to contract and commercial agreements, excluding bid bonds.

(c) Represents the maximum potential obligation in the event that the fair value of certain leased equipment and fleet vehicles is zero at the end of the maximum lease term. The maximum lease term associated with these assets ranges from 3 to 8 years. The maximum potential obligation at the end of the minimum lease term would be $56 million, $16 million of which is a guarantee by Pepco, $23 million by DPL and $15 million by ACE. The minimum lease term associated with these assets ranges from 1 to 4 years. Historically, payments under the guarantees have not been made and PHI believes the likelihood of payments being required under the guarantees is remote.

Leases

Minimum future operating lease payments, including lease payments for contracted generation, vehicles, real estate, computers, rail cars, operating equipment and office equipment, as of December 31, 2017 were:

	Exelon[a]
2018	$ 188
2019	129
2020	147
2021	142
2022	119
Remaining years	787
Total minimum future lease payments	$ 1,512

(a) Includes amounts related to shared use land arrangements.

The following table presents Exelon's rental expense under operating leases for the years ended December 31, 2017, 2016 and 2015:

For the Year Ended December 31,	
2017	$ 709
2016	777
2015	922

For information regarding capital lease obligations, see Note 13—Debt and Credit Agreements.

Nuclear Insurance

Generation is subject to liability, property damage and other risks associated with major incidents at any of its nuclear stations. Generation has mitigated its financial exposure to these risks through insurance and other industry risk-sharing provisions.

The Price-Anderson Act was enacted to ensure the availability of funds for public liability claims arising from an incident at any of the U.S. licensed nuclear facilities and to limit the liability of nuclear reactor owners for such claims from any single incident. As of December 31, 2017, the current liability limit per incident is $13.4 billion and is subject to change to account for the effects of inflation and changes in the number of licensed reactors at least once every five years with the last adjustment effective September 10, 2013. In accordance with the Price-Anderson Act, Generation maintains financial protection at levels equal to the amount of liability insurance available from private sources through the purchase of private nuclear energy liability insurance for public liability claims that could arise in the event of an incident. Effective January 1, 2017, the required amount of nuclear energy liability insurance purchased is $450 million for each operating site. Claims exceeding that amount are covered through mandatory participation in a financial protection pool, as required by the Price Anderson-Act, which provides the additional $13.0 billion per incident in funds available for public liability claims. Participation in this secondary financial protection pool requires the operator of each reactor to fund its proportionate share of costs for any single incident that exceeds the primary layer of financial protection. Exelon's share of this secondary layer would be approximately $2.8 billion, however any amounts payable under this secondary layer would be capped at $420 million per year.

In addition, the U.S. Congress could impose revenue-raising measures on the nuclear industry to pay public liability claims exceeding the $13.4 billion limit for a single incident.

As part of the execution of the NOSA on April 1, 2014, Generation executed an Indemnity Agreement pursuant to which Generation agreed to indemnify EDF and its affiliates against third-party claims that may arise from any future nuclear incident (as defined in the Price-Anderson Act) in connection with the CENG nuclear plants or their operations. Exelon guarantees Generation's obligations under this indemnity. See Note 2 — Variable Interest Entities for additional information on Generation's operations relating to CENG.

Generation is required each year to report to the NRC the current levels and sources of property insurance that demonstrates Generation possesses sufficient financial resources to stabilize and decontaminate a reactor and reactor station site in the event of an accident. The property insurance maintained for each facility is currently provided through insurance policies purchased from NEIL, an industry mutual insurance company of which Generation is a member.

NEIL may declare distributions to its members as a result of favorable operating experience. In recent years NEIL has made distributions to its members, but Generation cannot predict the level of future distributions or if they will continue at all. Generation's portion of the distribution declared by NEIL is estimated to be $60 million for 2017, and was $21 million for 2016 and 2015. The distributions were recorded as a reduction to Operating and maintenance expense within Exelon and Generation's Consolidated Statements of Operations and Comprehensive Income.

Premiums paid to NEIL by its members are also subject to a potential assessment for adverse loss experience in the form of a retrospective premium obligation. NEIL has never assessed this retrospective premium since its formation in 1973, and Generation cannot predict the level of future assessments if any. The current maximum aggregate annual retrospective premium obligation for Generation is approximately $360 million. NEIL requires its members to maintain an investment grade credit rating or to ensure collectability of their annual retrospective premium obligation by providing a financial guarantee, letter of credit, deposit premium, or some other means of assurance.

NEIL provides "all risk" property damage, decontamination and premature decommissioning insurance for each station for losses resulting from damage to its nuclear plants, either due to accidents or acts of terrorism. If the decision is made to decommission the facility, a portion of the insurance proceeds will be allocated to a fund, which Generation is required by the NRC to maintain, to provide for decommissioning the facility. In the event of an insured loss, Generation is unable to predict the timing of the availability of insurance proceeds to Generation and the amount of such proceeds that would be available. In the event that one or more acts of terrorism cause accidental property damage within a twelve-month period from the first accidental property damage under one or more policies for all insured plants, the maximum recovery by Exelon will be an aggregate of $3.2 billion plus such additional amounts as the insurer may recover for all such losses from reinsurance, indemnity and any other source, applicable to such losses.

For its insured losses, Generation is self-insured to the extent that losses are within the policy deductible or exceed the amount of insurance maintained. Uninsured losses and other expenses, to the extent not recoverable from insurers or the nuclear industry, could also be borne by Generation. Any such losses could have a material adverse effect on Exelon's and Generation's financial conditions, results of operations and cash flows.

Spent Nuclear Fuel Obligation

Under the NWPA, the DOE is responsible for the development of a geologic repository for and the disposal of SNF and high-level radioactive waste. As required by the NWPA, Generation is a party to contracts with the DOE (Standard Contracts) to provide for disposal of SNF from Generation's nuclear generating stations. In accordance with the NWPA and the Standard Contracts, Generation historically had paid the DOE one mill ($0.001) per kWh of net nuclear generation for the cost of SNF disposal. On November 19, 2013, the D.C. Circuit Court ordered the DOE to submit to Congress a proposal to reduce the current SNF disposal fee to zero, unless and until there is a viable disposal program. On May 9, 2014, the DOE notified Generation that the SNF disposal fee remained in effect through May 15, 2014, after which time the fee was set to zero. As a result, for the year ended December 31, 2017, 2016 and 2015, Generation did not incur any expense in SNF disposal fees. Until a new fee structure is in effect, Exelon and Generation will not accrue any further costs related to SNF disposal fees. This fee may be adjusted prospectively to ensure full cost recovery. The NWPA and the Standard Contracts required the DOE to begin taking possession of SNF generated by nuclear generating units by no later than January 31, 1998. The DOE, however, failed to meet that deadline and its performance has been, and is expected to be, delayed significantly.

The 2010 Federal budget (which became effective October 1, 2009) eliminated almost all funding for the creation of the Yucca Mountain repository while the Obama Administration devised a new strategy for long-term SNF management. The Blue Ribbon Commission (BRC) on America's Nuclear Future, appointed by the U.S. Energy Secretary, released a report on January 26, 2012, detailing comprehensive recommendations for creating a safe, long-term solution for managing and disposing of the nation's SNF and high-level radioactive waste.

In early 2013, the DOE issued an updated "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste" in response to the BRC recommendations. This strategy included a consolidated interim storage facility that was planned to be operational in 2025. However, due to continued delays on the part of the DOE, Generation currently assumes the DOE will begin accepting SNF in 2030 and uses that date for purposes of estimating the nuclear decommissioning asset retirement obligations. The SNF acceptance date assumption is based on management's estimates of the amount of time required for DOE to select a site location and develop the necessary infrastructure for long-term SNF storage.

In August 2004, Generation and the DOJ, in close consultation with the DOE, reached a settlement under which the government agreed to reimburse Generation, subject to certain damage limitations based on the extent of the government's breach, for costs associated with storage of SNF at Generation's nuclear stations pending the DOE's fulfillment of its obligations. Generation's settlement agreement does not include FitzPatrick and FitzPatrick does not currently have a settlement agreement in place. Calvert Cliffs, Ginna and Nine Mile Point each have separate settlement agreements in place with the DOE which were extended during 2017 to provide for the reimbursement of SNF storage costs through December 31, 2019. Generation submits annual reimbursement requests to the DOE for costs

associated with the storage of SNF. In all cases, reimbursement requests are made only after costs are incurred and only for costs resulting from DOE delays in accepting the SNF.

Under the settlement agreements, Generation has received cumulative cash reimbursements for costs incurred as follows:

	Total	Net[a]
Cumulative cash reimbursements[b]	$ 1,167	$ 1,006

[a] Total after considering amounts due to co-owners of certain nuclear stations and to the former owner of Oyster Creek.

[b] Includes $53 and $49, respectively, for amounts received since April 1, 2014, for costs incurred under the CENG DOE Settlement Agreements prior to the consolidation of CENG.

As of December 31, 2017 and 2016, the amount of SNF storage costs for which reimbursement has been or will be requested from the DOE under the DOE settlement agreements is as follows:

	December 31, 2017	December 31, 2016
DOE receivable - current[a]	$ 94	$ 109
DOE receivable - noncurrent[b]	15	15
Amounts owed to co-owners[a][c]	(11)	(13)

[a] Recorded in Accounts receivable, other.

[b] Recorded in Deferred debits and other assets, other

[c] Non-CENG amounts owed to co-owners are recorded in Accounts receivable, other. CENG amounts owed to co-owners are recorded in Accounts payable. Represents amounts owed to the co-owners of Peach Bottom, Quad Cities, and Nine Mile Point Unit 2 generating facilities.

The Standard Contracts with the DOE also required the payment to the DOE of a one-time fee applicable to nuclear generation through April 6, 1983. The fee related to the former PECO units has been paid. Pursuant to the Standard Contracts, ComEd previously elected to defer payment of the one-time fee of $277 million for its units (which are now part of Generation), with interest to the date of payment, until just prior to the first delivery of SNF to the DOE. The unfunded liabilities for SNF disposal costs, including the one-time fee, were transferred to Generation as part of Exelon's 2001 corporate restructuring. A prior owner of FitzPatrick also elected to defer payment of the one-time fee of $34 million for the FitzPatrick unit. As part of the FitzPatrick acquisition on March 31, 2017, Generation assumed a SNF liability for the DOE one-time fee obligation with interest related to FitzPatrick along with an offsetting asset for the contractual right to reimbursement from NYPA, a prior owner of FitzPatrick, for amounts paid for the FitzPatrick DOE one-time fee obligation. The amounts were recorded at fair value. See Note 4 -Mergers, Acquisitions and Dispositions for additional information on the FitzPatrick acquisition. As of December 31, 2017 and 2016, the SNF liability for the one-time fee with interest was $1,147 million and $1,024 million, respectively, which is included in Exelon's and Generation's Consolidated Balance Sheets. Interest for Exelon's and Generation's SNF liabilities accrues at the 13-week Treasury Rate. The 13-week Treasury Rate in effect, for calculation of the interest accrual at December 31, 2017, was 1.149%. The outstanding one-time fee obligations for the Nine Mile Point, Ginna, Oyster Creek and TMI units remain with the former owners. The Clinton and Calvert Cliffs units have no outstanding obligation. See Note 11 — Fair Value of Financial Assets and Liabilities for additional information.

Environmental Remediation Matters

General. The Registrants' operations have in the past, and may in the future, require substantial expenditures to comply with environmental laws. Additionally, under Federal and state environmental laws, the Registrants are generally liable for the costs of remediating environmental contamination of property now or formerly owned by them and of property contaminated by hazardous substances generated by them. The Registrants own or lease a number of real estate parcels, including parcels on which their operations or the operations of others may have resulted in contamination by substances that are considered hazardous under environmental laws. In addition, the Registrants are currently involved in a number of proceedings relating to sites where hazardous substances have been deposited and may be subject to additional proceedings in the future. Unless otherwise disclosed, the Registrants cannot reasonably estimate whether they will incur significant liabilities for additional investigation and remediation costs at these or additional sites identified by the Registrants, environmental agencies or others, or whether such costs will be recoverable from third parties, including customers. Additional costs could have a material, unfavorable impact on the Registrants' financial conditions, results of operations and cash flows.

Enclosure 8

Enclosure 9

United States Government Accountability Office

GAO

Report to the Honorable Edward J. Markey, House of Representatives

April 2012

NUCLEAR REGULATION

NRC's Oversight of Nuclear Power Reactors' Decommissioning Funds Could Be Further Strengthened

G A O

Accountability * Integrity * Reliability

GAO-12-258

April 2012

GAO
Accountability * Integrity * Reliability
Highlights

Highlights of GAO-12-258, a report to the Honorable Edward J. Markey, House of Representatives

NUCLEAR REGULATION

NRC's Oversight of Nuclear Power Reactors' Decommissioning Funds Could Be Further Strengthened

Why GAO Did This Study

About 20 percent of U.S. electricity is generated by 104 nuclear reactors. NRC, which regulates reactors, requires their owners (licensees) to reduce radioactive contamination after reactors permanently shut down. This process, called decommissioning, costs hundreds of millions of dollars per reactor. NRC requires licensees to provide reasonable assurance that they will have adequate funds to decommission, in part, by accumulating funds that are greater than or equal to NRC's decommissioning funding formula. GAO and NRC's OIG have identified concerns about NRC's oversight of decommissioning funds. GAO was asked by Representative Markey in his former capacity as Chairman of the House Subcommittee on Energy and Environment to (1) describe how NRC ensures that licensees provide reasonable assurance of adequate decommissioning funds and (2) identify any improvements or weaknesses in NRC's oversight of this area. GAO analyzed NRC's formula and reviews of licensee information and interviewed NRC officials, licensees, and others.

What GAO Recommends

GAO recommends, among other things, that NRC define what it means by the "bulk" of the funds needed for decommissioning and consider reviewing a sample of licensees' investments to determine if they comply with standards. NRC agreed to consider reviewing a sample of investments, but disagreed that defining bulk is needed because of the comprehensiveness of NRC's regulatory system. GAO continues to believe that this definition is needed.

View GAO-12-258. For more information, contact Frank Rusco, 202-512-3841, ruscof@gao.gov.

What GAO Found

The Nuclear Regulatory Commission (NRC) periodically reviews licensees' decommissioning funds and related licensee data to determine if licensees have provided reasonable assurance that they will accumulate adequate funds for decommissioning. For example, licensees must submit estimates to NRC of decommissioning costs throughout the life of the reactor and submit fund status reports at least every 2 years while the reactor is operating. Licensees typically accumulate such funds over time through trust fund investments. The minimum amount of funds considered adequate is established by NRC's decommissioning funding formula, which is based on information collected more than 30 years ago.

NRC has taken actions to strengthen its oversight of licensees' decommissioning funds by (1) creating guidance and other documents related to criteria for reviewing licensees' 2-year reports and by using its enforcement process when deficiencies are identified, (2) conducting reviews at licensee offices to verify that fund balances licensees reported in their 2-year reports match their year-end bank statements in response to a 2006 NRC Office of the Inspector General (OIG) recommendation, (3) reevaluating the decommissioning funding formula to determine if it should be updated, and (4) improving decommissioning planning. However, several weaknesses may limit NRC's ability to ensure that licensees have provided reasonable assurance. Specifically:

- NRC's formula may not reliably estimate adequate decommissioning costs. According to NRC, the formula was intended to estimate the "bulk" of the decommissioning funds needed, but the term "bulk" is undefined, making it unclear how NRC can determine if the formula is performing as intended. In addition, GAO compared NRC's formula estimates for 12 reactors with these reactors' more detailed site-specific cost estimates calculated for the same period. GAO found that for 5 of the 12 reactors, the NRC formula captured 57 to 76 percent of the costs reflected in each reactor's site-specific estimate; the other 7 captured 84 to 103 percent.
- The results of more than one-third of the fund balance reviews that NRC staff performed from April 2008 to October 2010 to verify that the amounts in the 2-year reports match year-end bank statements were not always clearly or consistently documented. As an example of inconsistent results, some reviewers provided general information, such as "no problem," while others provided more detail about both the balance in the year-end bank statement and the 2-year report. As of October 2011, NRC did not have written procedures describing the steps that staff should take for conducting these reviews, which likely contributed to NRC staff not always documenting the results of the reviews clearly or consistently.
- NRC has not reviewed licensees' compliance with the investment standards the agency has set for decommissioning trust funds. These standards specify, among other things, that fund investments may not be made in any reactor licensee or in a mutual fund in which 50 percent or more of the fund is invested in the nuclear power industry. As a result, NRC cannot confirm that licensees are avoiding conditions described in the standards that may impair fund growth. Without awareness of the nature of licensees' investments, NRC cannot determine whether it needs to take action to enforce the standards.

Contents

Abbreviations

DECON	immediate decontamination and dismantlement
DFS	decommissioning funding status
FERC	Federal Energy Regulatory Commission
NRC	Nuclear Regulatory Commission
OIG	Office of the Inspector General
SAFSTOR	safe storage

Debate flares on TMI closing

Longtime foes square off at NRC hearing

By Phil Galewitz
Patriot-News

Two longtime foes came together yesterday at the Holiday Inn Center City and, as usual, their debate on the future of Three Mile Island was highly charged.

The division between those two groups was ever present at a Nuclear Regulatory Commission advisory panel meeting where the sides fought over when to close TMI's Unit 2 reactor, site of the 1979 accident that leaked radioactive materials into the plant.

GPU Nuclear Corp., operator of the Londonderry Twp. plant, already has spent millions on initial cleanup. Recently the company proposed halting final decontamination measures and steps to close the facility until 2008, when both the Unit 1 reactor and the crippled Unit 2 reactor would be taken out of action.

"If we wait, there would be less risk to our workers and it would be more cost-effective," said Frank Standerfer, GPU vice president and director of TMI-2.

Nuclear energy opponents say TMI would become its own low-level radioactive waste site if the federal government permits GPU to hold off cleanup attempts.

"Radiation doesn't take vacations, and neither should GPU nor the NRC," said Eric Epstein, spokesman for TMI Alert, a citizens' group opposed to nuclear power.

In an NRC draft report made public last night, the agency concluded that there would be no significant environmental impact if cleanup of the plant were postponed 20 years. Both supporters and opponents to delaying decontamination say the report helps GPU's position.

The final decision on when Unit 2 cleanup will be finished is expected late next year, according to an advisory panel member.

Meanwhile, panel members quietly concede GPU will probably get its postponement.

The 12-member panel of scientists and local citizens makes recommendations to the NRC on decontaminating the Unit 2 reactor.

From Patriot-News files

Frank Standerfer
Wants decontamination halt

That question has yet to be addressed publicly by GPU, but indications last night were that within the next five years the company would provide its funding plans to the government.

An NRC regulation approved last month requires nuclear plants that shut down prematurely to provide funding assurances that the operating company can afford to close its facility.

"This is deja vu," said Joel Roth, an advisory panel member. The company had a difficult time finding the money to initially clean the plant and now is going to face those same steep costs again when it shuts the facility, he added.

"We want some guarantee that down the road they will have a billion dollars to finish its cleanup. Their word is simply not good enough," Roth said.

Standerfer said GPU will not have a problem finding funds to shut both reactors in the next century.

From Patriot-News files

Eric Epstein
Critical of GPU plan

"The NRC takes those costs into consideration when they license us," he said.

GPU officials say they will reduce their work force from 1,150 employees to about 75 people if they are allowed to delay final cleanup.

The nuclear plant is safe for the public, GPU and NRC officials stressed.

The main reason for delaying cleanup is to give the radioactive material time to decay to a safer level, said Standerfer, adding that the company asked to extend its cleanup deadline when it discovered that workers were becoming exposed to higher levels of radiation.

If cleanup started immediately, GPU officials say the process would take about four years and then another 20 years to monitor the area.

The advisory panel will meet July 14 in Harrisburg when it is expected to act on the NRC report released yesterday.

Enclosure 11

In July, 1981 a ***$1 billion defueling plan*** was proposed by Governor Richard Thornburgh. (9) The plan **did not include he $400 million** assessed against GPU rate payers (Met, PennElec and JCP&L) for **future** decommissioning costs.

Below is a list of the "contributors" for **defueling** (2). Please note the corporate contribution was 1/3 of what rate payers brought to the table after paying **$700 million** for the construction costs for TMI-2.

$305	**Insurance**
$246	**General Public Utilities Customers**
$ 91	**Nuclear Industry: United States** (3)
$ 83	**U.S. Department of Energy**
$ 82	**General Public Utilities: Corporate**
$ 30	**Commonwealth of Pennsylvania**
$ 18	**Nuclear Industry: Japan**
$ 11	**State of New Jersey**
$ 38	**Underfunded shortfall: EEI**

$987 million (4)

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1 The costs **to defuel TMI-2 do not** include **nuclear decontamination and decommissioning or restoring the site to Greenfield.**

2 February, 1997 In their *1997 Annual Report,* GPU reported that the cost to **decommission TMI-2 doubled in four years**. The original $200 million projection has been increased to $399 million for radioactive decommissioning. An additional $34 million will be needed for non-radiological decommissioning. The new funding target is $433 million; or a 110% increase in just 48 months.

3 The Domestic nuclear industry initially committed to $153 million.

4 Japanese contributions were made in the form of donated labor.

The Washington Post

U.S. to Pay $123 Million for TMI Cleanup

By Joanne Omang
October 21, 1981

The federal government has agreed to open-ended funding of part of the cleanup at the crippled Three Mile Island nuclear power plant--the part that can be included under the "research and development" label, Energy Secretary James B. Edwards said yesterday.

But Edwards rejected any government role in an insurance scheme to cover future atomic accidents, and the overall effect of his announcement appeared to be confusion among the main actors.

Edwards said the government's initial commitment is $123 million over three years.

Nevertheless, nuclear critics quickly condemned any government participation in TMI's cleanup as a Chrysler-style bailout for the nuclear industry. Rep. Alan Ertel (D-Pa.), whose district includes the Three Mile Island plant, called Edwards' announcement "an attempt to confuse people" which really provides no new money and no new commitment.

Gov. Richard Thornburgh, on the other hand, was jubilant, saying Edwards' promise brought the Three Mile Island cleanup saga "light years closer" to an end.

"Our commitment is to complete the basic R&D objectives we have outlined," Edwards told the crowded Senate Energy subcommittee hearing. "The final cost to achieve these objectives will depend on the extent of core damage."

In a letter to the Pennsylvania congressional delegation and to Thornburgh, presidential counselor Edwin Meese III reiterated Edwards' remarks, saying President Reagan would ask Congress for "sufficient funds in future years" to complete the DOE research program.

Total cleanup at the Middletown, Pa., plant is expected to take at least six years and could cost $1 billion. Meese's letter promised funding for five areas: technical aid to clean up the water in the damaged plant's basement; to remove and dispose of nuclear wastes not disposable at commercial sites; to remove and evaluate the damaged reactor core; to develop special tooling for the cleanup; and to complete "other appropriate activities."

A spokesman for Thornburgh said later that the outline "leaves the door open for more substantial involvement if the situation warrants it."

Thornburgh earlier proposed a cost-sharing scheme under which the federal government would shoulder $190 million, with other shares being taken by the electric utility industry, the states of New Jersey and Pennsylvania, and the plant owner, General Public Utilities.

The fund would only cover cleanup, since GPU is nearly bankrupt, and would not pay for restarting the plant, Thornburgh emphasized. The Edison Electric Institute group of utilities has agreed to ask their state regulators for permission to provide $192 million over the next three years.

Edwards said his announcement was "consistent with Gov. Thornburgh's recent proposal," although he said it "would not be appropriate" to commit the government to a dollar figure.

Rep. Ertel, however, said that Edwards had always wanted to provide the research money and that cleanup would not be covered. Ertel has introduced legislation to set up a mandatory insurance program for nuclear utilities to cover damages over $500 million. Funded by utility premiums, the plan would also pay for about $450 million of the TMI cleanup.

Edwards, however, rejected that plan. "Private efforts are under way to establish more adequate levels of private property insurance. We believe these efforts will be successful, making a federally mandated program unnecessary," he said.

Sen. Gary Hart (D-Colo.), calling himself "the only truly free-market advocate in the room" regarding nuclear power, said Edwards' plan would set a precedent of helping future troubled reactor-owning utilities. He said the $123 million had no visible relation to the value of any research that might come out of TMI. Manufacturers and vendors of nuclear equipment should shoulder some of the cleanup costs, he added.

Committee Chairman James A. McClure (R-Idaho) said ratepayers nationwide will eventually pay the costs of cleaning up TMI, either directly or in the form of higher "uncertainty premiums" their electric utilities would be paying.

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