

September 24, 2018

Before the Nuclear Regulatory Commission
Peach Bottom Atomic Power Station, Units 2 and 3 Exelon
Generation Company, LLC; Federal Register/Vol. 83, No.
175/Monday, September 10, 2018/Notices 45693

Docket Nos. 50-277 and 50-278; NRC- 2018-0130;
Docket ID NRC-2018-0130.

Three Mile Island Alert's Comments
Re: The Scoping Process for an Environmental
Impact Statement to Evaluate the Environmental
Impacts for the Subsequent License Renewal
of the Operating Licenses for Peach Bottom
Atomic Power Station, Units 2 and 3

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ADD= David Drucker

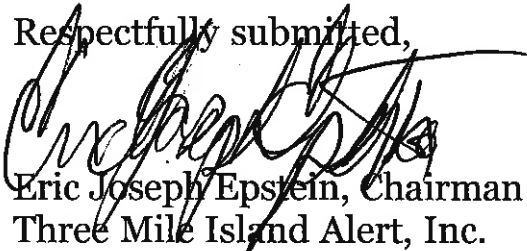
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Mail Stop TWFN-7- A60M,
U.S. Nuclear Regulatory Commission,
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Enclosed please find an original and two copies of "Three Mile Island Alert's Comments, Re: Scoping Process for an Environmental Impact Statement to Evaluate the Environmental Impacts for the Subsequent License Renewal of the Operating Licenses for Peach Bottom Atomic Power Station, Units 2 and 3."

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Eric Joseph Epstein", is written over the typed name and extends upwards into the "Respectfully submitted," line.

Eric Joseph Epstein, Chairman
Three Mile Island Alert, Inc.
4100 Hillsdale Road
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I. Introduction.

By letter dated July 10, 2018 (ADAMS Package Accession No. ML18193A689), Exelon submitted to the NRC an application for subsequent license renewal of Facility Operating License Nos. DPR-44 and DPR-56 for an additional 20 years of operation at Peach Bottom Atomic Power Station, Units 2 and 3. The Peach Bottom units are boiling water reactors designed by General Electric Company and are located in Delta, PA (17.9 miles south of Lancaster, PA). The current renewed operating license for Unit 2 expires at midnight on August 8, 2033, and the current renewed operating license for Unit 3 expires at midnight on July 2, 2034.

The application for subsequent license renewal was submitted pursuant to part 54 of title 10 of the *Code of Federal Regulations* (10 CFR) and included an environmental report (ER). A notice of receipt and availability of the application was published in the Federal Register on August 1, 2018 (83 FR 37529). A separate notice of acceptance for docketing of the application and opportunity for hearing regarding subsequent license renewal of the facility operating licenses will be published in the Federal Register.

The Peach Bottom Atomic Power Station (“Peach Bottom”) located in southern York County, Pennsylvania is co-owned by (“Exelon”) based in Illinois and Public Service and Gas (“PS&G”) of New Jersey.

Philadelphia Electric's (“PECO”) applied for a license to operate the Peach Bottom Atomic Power Station in July, 1960. The application was approved by the Atomic Energy Commission (“AEC”).

Peach Bottom-1 was a 40 megawatt (“MWt”), High Temperature Graphite Moderated reactor that operated from 1966-1974.

Peach Bottom 2 & 3 are Boiling Water Reactors designed by General Electric and engineered by Bechtel. Both plants use a Mark 1 containment system. Peach Bottom 2’s initial capacity was 1,159 MWt. Peach Bottom 2 & 3’s capacity was initially set at 1,035 Net MWt for a total capacity of 2,194 MWt.

The construction permit for PBAPS, Units 2 and 3, was issued by the AEC on January 31, 1968. Both units were evaluated against the then-current AEC draft of the 27 General Design Criteria (“GDC”) issued in November 1965.

On July 11, 1967, the AEC published for public comment, in the *Federal Register* (32 FR 10213), a revised and expanded set of 70 draft GDC. The licensee concluded that PBAPS, Units 2 and 3, conforms to the intent of the draft GDC.”

On February 20, 1971, the AEC published in the *Federal Register* a final rule that added Appendix A to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "General Design Criteria for Nuclear Power Plants".

The NRC decided not to apply the final GDC to plants with construction permits issued prior to May 21, 1971.

Unit 2 and Unit 3 began operation in July, 1974, but had their license extended by the Nuclear Regulatory Commission (“NRC”) and are expected to operate through 2034.

On March 31, 1987, PECO was ordered by the Nuclear Regulatory Commission to shut down Peach Bottom 2 and 3 due to operator misconduct, corporate malfeasance, and blatant disregard for the health and safety of area residents.

On February 3, 1988, John H. Austin resigned as president of PECO after a unusually critical report by the Institute of Nuclear Power Operations (INPO) was published. The report asserted that Peach Bottom "was an embarrassment to the industry and to the nation." Zack T. Pate, president of INPO, added, "The grossly unprofessional behavior by a wide range of shift personnel...reflects a major breakdown in the management of a nuclear facility."

On February 1, 1989, the NRC staff recommended that nuclear power plants that utilize the Mark 1 containment shell, modify the structure to reduce the risk of failure during a serious accident. PECO said it would make the \$2 to \$5 million changes only if the NRC made the modifications a requirement. This was the second time in two years that the NRC staff had advised the Commission to make changes to the Mark 1 containment structure.

The NRC released a report on June 21, 1989 relating to Mark 1 containment buildings entitled "Severe Accident Risks: An Assessment for Five U.S. Nuclear Plants." The NRC's six-member panel was evenly divided as to whether the Mark 1 containment would be breached during a serious accident. "The NRC decided not to order immediate changes in the Mark 1 containment." Yet half of the panel stated "with near certainty" the Peach Bottom's containment structure would fail during a core melt accident.

On April 21, 2000, the NRC approved the transfer of the Peach Bottom licenses from Delmarva Power and Light Company and Atlantic City Electric Company to PECO and PSEG Nuclear LLC.

By 2002, the NRC had approved Measurement Uncertainty Recapture Uprates and Stretch Uprates for Peach Bottom 2 & 3. The proposed amendments would authorize an increase in the maximum reactor power level from 3,514 megawatts thermal (MWt) to 3,951 MWt.

On August 2, 2005 Exelon Generation Company, LLC., on behalf of itself and PSEG Nuclear LLC, filed to acquire 100% of the facility following approval of the proposed license transfers.

In December, 2006 Exelon was fined \$640,000 by the Susquehanna River Basin Commission (“SRBC”) for water violations at Peach Bottom related to water use and power uprates. (SRBC, Docket #: 20061209). Exelon failed to seek the Commission's approval for any change in their processes that required them to increase water usage by 100,000 gallons a day.

On June 10, 2014, Eric Epstein, Chairman of Three Mile Island Alert provided Testimony before the Advisory Committee on Reactor Safeguards relating to the Nuclear Regulatory Commission's Draft Safety Evaluation in Support of the Proposed Extended Power Uprate (“EPU”) License Amendment for the Peach Bottom Atomic Power Station Units 2 & 3. Mr. Epstein asked the NRC to postpone approval of the EPU until open and unresolved environmental, health and safety issues had been addressed.

Peach Bottom nuclear units were licensed to operate for 40 years and designed to produce 2,194 net MWt. Fort-four years later, the plants' operational lives have been extended by an additional twenty years and their combined capacity will increase to 3,951 MWt.

II. History of Power Uprates at Peach Bottom Atomic Power Station Units 2 & 3

Peach Bottom 2 received approval for a 5% stretch uprate or 165 MWt increase on October 18, 1994. Peach Bottom 3 received approval for a 5% stretch uprate or 165 MWt increase on July 18, 1995.

Peach Bottom 2 & 3 received approval for a 1.62% Measurement Uncertainty Recapture ("MUR") uprate or 56 MWt increase on November 22, 2002.

Peach Bottom 2 received approval for a 5% stretch uprate or 165 MWt increase in October 18, 2004.

In December, 2006 Exelon was fined \$640,000 by the Susquehanna River Basin Commission for water violations at Peach Bottom related to water use and power uprates.

On September 28, 2012, Exelon Generation Company, LLC ("Exelon" or "the licensee") submitted a license amendment request for Peach Bottom Atomic Power Station, Units 2 and 3.

Peach Bottom announced an Extended Power Uprate (EPU) to 3,951 MWt core power for both units, which is 120% of Original Licensed (core) Thermal Power. The project was authorized for full implementation by co-owners Exelon and PSEG in July 2012. Implementation of modifications required for the EPU are planned over three refueling outages and during “online periods.”

III: Peach Bottom’s Environmental Impacts on the Susquehanna River Basin

Peach Bottom does not use a closed-cooling system. The Peach Bottom Atomic Power Station uses and treats potable water from the Susquehanna River. The average daily usage is anywhere from 280,000 to 360,000 gallons.

The station does not currently use evaporative cooling towers for cooling needs, but evaporates up to 28 million gallons daily (“mgd”) through heat transfer via once-through cooling with water withdrawn from Conowingo Pond. The Peach Bottom Atomic Power Station, located on the west bank of the Conowingo Pond in York County, Pennsylvania and 36 miles from downtown Baltimore- is a two-unit nuclear generating facility that uses water from the Conowingo Pond for cooling purposes.

Water shortages on the Lower Susquehanna reached critical levels in the summer of 2002. For the month of August 2002, 66 of 67 Pennsylvania counties had below normal precipitation. On August 9th, 2002, Governor Schweiker extended the drought emergency for 14 counties across Southcentral and Southeast Pennsylvania. Precipitation deficits at or

exceeding 10.0 inches were recorded in several counties, included Dauphin County. The greatest deficit of 14.6 inches was in Lancaster County. Peach Bottom is located in Lancaster and York Counties while Three Mile Island is situated in Dauphin and Lancaster Counties. (Pennsylvania Department of Environmental Protection, *Drought Report and Drought Conditions Summary*, August-September, 2002).

Ten years later in April 2012, the Susquehanna River reached record seasonal lows matching drought conditions of 1910 and 1946. U.S. Geological Survey analysis showed stream flows at hydrological emergency levels in 42 of the state's 67 counties. Another 10 counties were at warning levels, and another 12 at watch level. Only three were normal or above. Groundwater levels were at emergency levels in 13 counties. The SRBC began issuing temporary orders to cease water withdrawals in February, 2012.

On March 12, 2012, the U.S. Nuclear Regulatory Commission issued a request for information to all power reactor licensees and holders of construction permits in active or deferred status, pursuant to Title 1 of the *Code of Federal Regulations* (10 CFR), Section 50.54(f) "Conditions of license" (hereafter referred to as the "50.54(f) letter").

By letter dated August 12, 2015 (Agencywide Documents Access and Management System Accession No. ML15233A067), Exelon Generation Company, LLC (Exelon, the licensee) submitted its Flood Hazard Reevaluation Report (FHRR) for Peach Bottom Atomic Power Station, Units 2 and 3.

The Lower Susquehanna River is impacted by abnormal weather conditions. For example, “periods of drought or extended periods of low flow can adversely affect the ability of the dam to meet minimum flow and summertime pond level minimums. In addition, due to high ambient water temperatures and low flow, maintaining the minimum dissolved oxygen requirement is also challenging. These situations can further be compounded if the flows coming into the pond as measured at the Marietta gage do not equal the flow outfalls. This not only affects the dam, but also the water supply companies and Peach Bottom Atomic Power Station due to the loss of pond level. Additionally, recreational boating and marina operation becomes severely hampered due to low water levels. (“Conowingo Pond Management Plan,” *Publication No. 242* , June 2006, p. 71.)

The Susquehanna River Basin is flood prone. “Since record-keeping began 200 years ago, the Susquehanna River has proven one of the most flood-prone watersheds in the nation. The watershed encompasses 27,510 square miles and extends from New York to Pennsylvania to the Chesapeake Bay in Maryland – where nearly 4 million people live...Of the 1,400 communities in the river basin, 1,160 have residents who live in flood-prone areas.” (7th Annual Susquehanna River Symposium, Bucknell University, October 12-13, 2012)

Extreme weather events occur with more frequency from Tropical Storm Lee in 2011 to Tropical Storm Florence in 2018. The Susquehanna River has flooded 48 times since 1786.

Additionally, droughts have become more common in the Susquehanna River Basin.

Unlike other consumptive users, in the summer of 2002, not Peach Bottom did not “conserve” water until the plant was forced to close to address a massive fish kill. On August 30, 2002, high differential pressures on the circulating water intake screens forced the manual shutdown of Peach Bottom. “The problem was caused by a sudden surge in the amount of fish (Gizzard Shad) that entered the intake canal and clogged the screens. Unit 3 power was returned to 100 percent following cleaning of the circulating water screens and restating of the 3’A’ circulating water pump.” (Nuclear Regulatory Commission, IR-50-277/02-05; 50-278/02- 05).

Five years later in the summer of 2007, Peach Bottom-2 & 3 were detected returning water to the Susquehanna River at temperatures in excess of 110 degrees.

Communities and ecosystems that depend on limited water resources are adversely affected by “normal operating conditions” at nuclear stations.

The Conowingo Pond also plays a critical role in Peach Bottom's water intake. Declining pond levels threaten Peach Bottom's cooling water intake, recreational use of the Conowingo Pond, shore habitat levels, and downstream flows. As drought conditions continue, the operators continue to generate hydroelectricity as much as possible using the water available to them, but it becomes a secondary concern. The primary concern becomes the depletion of storage in the pond and safeguarding the ability of the pond to continue to make adequate releases during low flow events of extended duration.” (“Conowingo Pond Management Plan,” *Publication No. 242* June 2006 p. 21.)

“The Conowingo Pond provides a mixed warm water recreational fishery for large mouth and small mouth bass, channel catfish, white crappie, bluegill, and to lesser degrees, striped bass, walleye and carp. The most abundant fish in the Conowingo Pond is the gizzard shad. Bass fishing tournaments are commonplace during the open season. Steep, wooded slopes and railroad postings limit shoreline and boat access. The heated effluent from Peach Bottom Atomic Power Station attracts game fish during the winter and extends the open-water fishing season. (“Conowingo Pond Management Plan,” *Publication No. 242*, June 2006, p. 13).

“Millions of fish (game and consumable), fish eggs, shellfish and other organisms are sucked out of the Lower Susquehanna River and killed by nuclear power plants annually. It is hard to know just what the impact on fisheries is, because cool water intakes have been under the radar screen compared to some types of pollution, said Pennsylvania Fish and Boat Commission aquatics resources chief Leroy Young.” (Ad Crable, *Intelligencer Journal*, January 15, 2005).

A former Peach Bottom nuclear plant employee said he was "sickened" by the large numbers of sport fish he saw sucked out of the Susquehanna. "When the water comes in, fish would swim in through tunnels and swim into wire baskets," said the man who lives in southern Lancaster County and asked that his name not be used. "There were hundreds and hundreds of fish killed each day. Stripers and bass and walleye and gizzard shad and all kinds of fish. It took a forklift to carry them out" (*Intelligencer Journal*, January 15, 2005).

Water use and water consumption - as well as water supply and water chemistry - have direct and indirect relationships with safety related components, plant cooling, and are intimately connected to the health and safety of the Susquehanna River and the regional community.

IV. Legal Arguments for Revising the Water Quality Certification under Section 401 of the Federal Clean Water Act for the Extended Power Uprate for the Peach Bottom Atomic Power Station

Federal and statewide statutes can not be unilaterally exempted or ignored by coordinated inaction. Regional water coordination was clearly recognized by the Department of Environmental Protection (“DEP”) on June 16, 2007 when the DEP advertised that the Susquehanna River Basin Commission was proposing comprehensive revisions to its regulations governing water withdrawal and consumptive use projects. (Proposed Rules [Federal Register: October 1, 2007 (Volume 72, Number 189) [Page 55711-55712] PART 808.)

Request to Investigate 1:

The regional changes include a number of markers that the DEP and the NRC must address when considering Exelon’s EPU request, including: 1a) reducing the duration of consumptive use and withdrawal approvals from 25 years to 15; 1b) ending the recognition of “pre-compact” or “grandfathered” consumptive uses or withdrawals upon a change of ownership; and, 1c) no longer allowing the transfer of project approvals when a change of ownership occurs; and a requirement that sponsors of consumptive use projects involving ground or surface water withdrawals request approvals for the consumptive use and the withdrawals.

Request to Investigate 2:

The SRBC stated, “If additional releases are made from new or existing sources, they will need to be accounted in the monitoring data at the Marietta gage. It will be important to understand how operations of Conowingo Dam will be affected and how existing CU [Consumptive Use] mitigation agreements for Peach Bottom Atomic Power Station and the City of Baltimore could be impacted. Operations of Conowingo Dam are driven by flows at Marietta, as are existing mitigation agreements for the Peach Bottom Atomic Power Station and the City of Baltimore. It will be necessary to specify that those agreements remain in force despite upstream mitigation, and to resolve methodologies for implementing the agreements in instances when upstream mitigation releases are distorting the flow measurements at Marietta. Regardless, Exelon and Baltimore will still be required to mitigate the CU of their projects.” (Consumptive Use Mitigation Plan, *Publication No. 253*, March 2008, p. 29)

The Department of Environmental Protection and the Nuclear Regulatory Commission **exempted** Peach Bottom Atomic Power Station from preparing a final Environmental Impact Statement.

The Final Environmental Impact Statement (“EIS”) was concluded by the NRC’s predecessor agency - the Atomic Energy Commission - **in 1973** - prior to the Commonwealth of Pennsylvania enactment of aggressive statutes and regulations. Among the legislation passed were the Radiation Act (1984), Chesapeake Bay Commission Agreement Act (1985), Hazardous Site Cleanup Act (1988), Pennsylvania Environmental Stewardship and Water Protection Act (1999) and Act 129 (2008).

The initial EIS was issued decades prior to the emergence of the Environmental Protection Agency (“EPA”) Section 316(b) of the Clean Water Act. EPA issued regulations on the design and operation of intake structures in order to minimize adverse environmental impacts.

EPA promulgated regulations in 2001, 2003, 2006 and 2014. The requirements are included in the National Pollutant Discharge Elimination System (“NPDES”) permit regulations, 40 CFR Parts 122 and 125 (Subparts I, J, and N).

Request to Investigate 3:

The DEP must investigate the impact of the Environmental Protection Agency (EPA) 316 (a) and 316 (b) and establish compliance milestones on applications from nuclear power plants.

Request to Investigate 4:

Power generation, cooling and safety are inherently connected. There is no imaginary fence between generation and safety. And there should be no regulatory moat created by artificial safety definitions erected by nuclear regulators. Neither DEP or NRC can bypass Act 220 of 2002 which “establishes the duty of any person to proceed diligently in complying with orders of the DEP.” (Section 3133)

Seasonal flow, Act 220, and the competing demands for limited water resources may make the amount of water available for power generation unreliable. Frequent power decreases and scrams show up as safety indicators and put stress on the nuclear generating stations. The NRC does not compile generation indicators, it analyzes safety indicators, like scrams and power reductions.

The NRC should investigate the potential for safety challenges by abruptly scrambling the plant and forcing power reductions to accommodate a water use budget.

V. The Nuclear Regulatory Commission's Draft Safety Evaluation in Support of the Extended Power Uprate License Amendment for the Peach Bottom Atomic Power Station Units 2 & 3 Failed to Address Numerous Outstanding Issues

The Federal Register Notice (“FR” or “the Notice”) was populated with general, unqualified and vague assumptions and statements posited as empirical data. The DEP accepted the NRC’s general, unqualified and vague assumptions and statements posited as empirical data.

The plant’s cooling towers are not “routinely used” (see “Aquatic Resource Impacts”); and, are not planned to be “routinely used” during and after implementation of the EPU. Therefore, consistent with the discussion in NUREG–1437, Supplement 10, Section 2.2.8.4, “Visual Aesthetics and Noise,” there should not be any significant impacts from the EPU, such as icing, fogging, plume, or noise impacts from the operation of cooling towers.”

Follow-up Request 1:

The NRC did not define and quantify the terms “plume” and “routinely.” (FR, p. 18075).

Please define these terms.

Follow-up Request 2:

The Federal Register projected, “Once the EPU has been implemented, water consumption for plant cooling will not significantly change from pre-EPU operation.” (FR, p. 18075)

Please define and quantify current and post water consumption levels, and define the term “significantly.”

Follow-up Request 3:

“If the proposed EPU is approved and is implemented, PBAPS is predicted to have a slightly larger and hotter mixing zone than pre-uprate conditions during full flow and capacity.” (FR, p. 18079)

Please define and quantify “slightly larger” and “hotter mixing zone.”

Follow-up Request 4:

“The NRC staff anticipates that PBAPS will continue to operate post-EPU in full compliance with the requirements of the PADEP. The PADEP would evaluate PBAPS compliance with its individual wastewater facility permit.” (FR, p. 18079)

The NRC should explain how it measures and verifies “anticipation,” and what metrics are in place to ensure compliance.

Follow-up Request 5:

“The potential impacts to aquatic resources from the proposed action could include impingement of aquatic life on barrier nets, trash racks, and traveling screens; entrainment of aquatic life through the cooling water intake structures and into the cooling water systems; and effects from the discharge of chemicals and heated water.” (FR, p. 18075)

Staff needs to quantify these statements and quantify impacts.

Follow-up Request 6:

The NRC staff concluded in NUREG–1437, Supplement 10, Section 4.1.3, “Impingement of Fish and Shellfish;” that, during the continued operation of PBAPS, the potential impacts caused by the impingement of fish and shellfish on the debris screens of the cooling water intake system would be small (i.e., not detectable or so minor that they will neither destabilize nor noticeably alter any important attribute of the resource), and that impingement losses would not be great enough to adversely affect Susquehanna River aquatic populations.”

The NRC provided no empirical data to support environmental impact conclusions, and ignored the aggregate impact of three EPU's implemented since the initial license was granted.

Please provide supporting data to justify the statement “impingement losses would not be great enough to adversely affect Susquehanna River aquatic populations.”

Follow-up Request 7:

The NRC staff also concluded in NUREG-1437, Supplement 10, Section 4.1.3, “that, in the early life stages in the cooling water system, the potential impacts of entrainment of fish and shellfish would be small, and that there are no demonstrated, significant effects to the aquatic environment related to entrainment.”

The NRC provided no empirical data to support environmental impact conclusions, and ignored the aggregate impact of three EPU's implemented since the initial license was granted.

The staff also failed to define and quantify “alter,” “so small, or “significant impact.” Please define these terms.

Follow-up Request 8:

The NRC’s conclusions relating to “Aquatic Resource Impacts” were based on incomplete studies, and assumed station conditions under the “grandfathered” NPDES permit:

However, this conclusion was made assuming station conditions under the previous NPDES permit... After the study is completed and based on the study results, Exelon will submit to PADEP an application to modify the NPDES permit. These modifications may include actions to manage the thermal discharge under EPU conditions. For any such future modifications, the PADEP must, in accordance with Section 316(a) of the Clean Water Act, ensure thermal effluent limitations assure the protection and propagation of a balanced indigenous community of shellfish, fish, and wildlife in and on Conowingo Pond.” (FR, 18706)

Please provide the completed data analyses and supporting documents that verify the above stated assumptions.

Follow-up Request 9:

The conclusions stated under “Aquatic Resource Impacts” may be inconsistent with EPA 316 (b), and are based on a out dated NPDES permits. (FR, p. 18075).

The NRC granted waivers based on outdated assumptions, data and studies to be concluded at a later date. The staff’s conclusions were also inconsistent with the historical facts on the ground as enumerated in the discussed under III. Peach Bottom’s Environmental Impacts on the Susquehanna River Basin, pp. 6-10.

Please provide current data that substantiates the conclusions posited under “Aquatic Resource Impacts”

Follow-up Request 10:

Regarding the potential impacts of thermal discharges, in NUREG–1437, Supplement 10, Section 4.1.4, “Heat Shock,” the NRC staff concluded that the “impacts are small and that the heated water discharged to Conowingo Pond does not change the temperature enough to adversely impact balanced, indigenous populations of fish and wildlife.” (FR, pp. 18075-10876).

10 a) Please define the “small impacts.”

10 b) Please explain why the NRC accepted a generic rather than a site specific evaluation.

10 c) Has the NRC anticipated or projected impacts after the “renewed license period”? If the period is more than 15 years, please explain how this time period has been exempted by SRBC regulations.

10 d) The NRC failed to explain how the intake structure is designed to reduce the entrapment and impingement of aquatic organisms, and how this design comports with 316 (b).

10 e) The DEP accepted a fee for entrapment and impingement and damage, but did not require Exelon remediate the impact it caused by the approved EPU.

How has the fee mitigated the impacts of entrapment and impingement? Please provide documentation.

Follow-up Request 11:

The NRC has “generically” determined that the “effects from discharge of chlorine or other biocides, as well as accumulation of contaminants in sediments or biota, would be small for continued operations during a renewed license period at all plants as discussed in Section 4.5.1.1, “Surface Water Resources, Discharge of Biocides, Sanitary Wastes, and Minor Chemical Spills,” of the “Generic Environmental Impact Statement for License Renewal of Nuclear Plants,” NUREG–1437, Volume 1, Revision 1, dated June 2013.” (ADAMS Accession No. ML 13106A241). (FR, p. 18076)

11 a) The NRC should specify what plan(s) are in place to confirm and monitor what and how much “chemical effluents [are] discharged”.

11 b) How is the NRC going to monitor the changes or quantify the discharges?

Follow-up Request 12:

The DEP and the NRC failed quantify site-specific aquatic challenges, and invasive species challenges based on the documented challenges that currently exist in the Susquehanna River.

Please quantify site-specific aquatic challenges and invasive species challenges based on documented challenges that currently exist in the Susquehanna River.

Follow-up Request 13:

The DEP confirmed that zebra mussel adults and juveniles have been found in Goodyear Lake, the first major impoundment on the Susquehanna River's main stem below Canadarago Lake in New York. Zebra mussels are an invasive species posing a serious ecological and economic threat to the water resources and water users downstream in the river and Chesapeake Bay. On June 19, 2007, zebra mussels were discovered in Cowanesque Lake, Tioga County. This marks the first time zebra mussels have been discovered in the area.

In 2002, the first report of zebra mussel populations in the Chesapeake Bay Watershed were reported from Eaton Reservoir in the headwaters of the Chenango River, a major tributary to the Susquehanna River in New York. A short time later, zebra mussels also were found in Canadarago Lake, a lake further east in the Susquehanna main stem headwaters. Now, through DEP's Zebra Mussel Monitoring Network, reports were received that both zebra mussel adults and juveniles, called veligers, have made their way down to the Susquehanna main stem headwaters.

(Pa DEP, *Update*, July 16, 2004)

Zebra mussels, like Asiatic clams, shad and other biological fouling, can invade the Peach Bottom Atomic Power Station from the Chesapeake Bay or Susquehanna River.

Zebra mussels have been discovered at the Susquehanna Steam Electric Station's fail-safe water supply in Cowanesque Lake and noted: "There is no evidence zebra mussels have been found anywhere in the vicinity of the SSES..." But the NRC acknowledges the SRBC requirement that the SSES compensate consumptive water use during river low-flow conditions by sharing the costs of the Cowanesque Lake Reservoir, which provides river flow augmentation source.

The NRC was silent on this issue.

How does the NRC plan to monitor and track Zebra mussels, Asiatic clams, shad and other biological fouling challenging the Peach Bottom Atomic Power Station Peach Bottom.

Follow-up Request 14:

In recent years, algae blooms recently "caused continuous clogging of multiple strainers of all pumps in TMI the intake structure; including: the two safety related DR pumps, all three safety related NR pumps, and all three non-safety related secondary river pumps." (NRC IR 05000289/2006004, p. 7.)

The NRC was silent on this in regard to the EPU at Peach Bottom.

How does the NRC plan to monitor and track algae blooms at the Peach Bottom Atomic Power Station?

Follow-up Request 15:

Neither DEP, NRC or SRBC addressed health, safety and structural challenges caused by micro fouling versus macro fouling, micro biologically influenced corrosion, algae blooms, biofilm's disease-causing bacteria such as Legionella and listeria, the difficulty in eliminating established biofilms, oxidizing versus non-oxidizing biocides, chlorine versus bleach, alkaline versus non-alkaline environments, possible decomposition into carcinogens, and the eastward migration of Asiatic clams, zebra mussels and the anticipated arrival of quagga mussels.

How does the NRC plan to monitor and track micro and macro fouling challenges at the Peach Bottom Atomic Power Station?

Follow-up Request 16:

NRC staff noted the limitation of the inspection protocol and "requested that licensees establish a routine inspection and maintenance program to ensure that corrosion, erosion, protective coating failure, silting, and biofouling/tube plugging cannot degrade the performance of the safety-related systems supplied by service water. These issues relate to the evaluation of safety-related heat exchangers using service water and whether they have the potential for fouling, thereby causing degradation in performance, and the mandate that there exist a permanent plant test and inspection program to accomplish and maintain this evaluation."

How does the NRC plan to monitor and track issues identified above from the 2014 EPU review?

Follow-up Request 16:

“The regulations in 10 CFR 50.36, set forth NRC requirements related to the content of TSs. Pursuant to 10 CFR 50.36, TSs are required to include items in the following five specific categories: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls. **The regulation does not specify the particular requirements to be included in a plant’s TSs.** (NRC, “Peach Bottom Atomic Power Station, Unit 2 & 3, Issuance of Amendment Re: Revise Normal Heat Sink Operability Requirement”, Tag Nos. M9805 & M98906, June 5, 2014).

How does the NRC plan to monitor and track issues identified above in the 2014 EPU review?

Follow-up Request 17:

The NRC identified the need for biological and thermal studies.

17 a) When are the biological and thermal studies going to be completed? Please provide the analyses and the results.

17 b) Why would the NRC approve relicensing prior to the completion of the studies?

17 c) Please provide the results of the NPDES compliance review which was delayed until after the EPU was approved in 2014.

VI: Recommendations:

Power generation, cooling and safety are inherently connected. There is no fence between generation and safety. And there should be no regulatory moat created by artificial safety definitions erected by nuclear generators. The lack of regulatory coordination establishes a deleterious precedent, and constitutes *de facto* approval of grandfathered and outdated regulations.

Even more baffling are the regulatory moats that federal and state agencies erect to protect rigid and exclusive zones of interest. This type of laissez-faire regulatory behavior gives rise to undesired corporate behaviors such as “grandfathering” and “back fits,” deterioration of monitoring equipment, time delays causing avoidable leaks, and waivers for monitoring wells.”

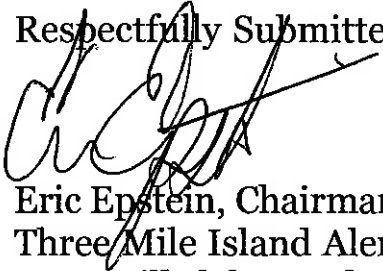
Populations along the Susquehanna River are potentially impacted by contaminated water, liquid-release exposure pathways, irrigated crops and external exposure during recreational activities.

1) The NRC staff should investigate TMI Alert’s four Requests for Investigation., and incorporate the data, findings and modifications in the Final Environmental Impact Statement.

2) The NRC staff should respond to TMI Alert’s 17 Follow-Up Requests; and incorporate the data, findings and modifications in the Final Environmental Impact Statement.

3) The NRC staff must also review dated and delayed submissions, reconcile “grandfathered” regulations, and clarify general and vague assumptions.

Respectfully Submitted,



Eric Epstein, Chairman
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