

August 18, 2008

Paul O. Swartz  
Executive Director  
Susquehanna River Basin Commission  
1721 North Front Street  
Harrisburg, PA 17102-2391

Attention: Ava Stoops

**Three Mile Island Alert, Inc.'s Comments on the  
Susquehanna River Basin Commission's  
Draft Comprehensive Plan for the  
Water Resources of the Susquehanna River Basin**

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Dear Mr. Swartz:

Enclosed please find an original copy of "Three Mile Island Alert Inc.'s Comments on the Susquehanna River Basin Commission's Draft Comprehensive Plan for the Water Resources of the Susquehanna River Basin."

Respectfully submitted,

Eric Joseph Epstein, Chairman  
Three Mile Island Alert, Inc.  
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I hereby certify that on August 18, 2008 a copy of Three Mile Island Alert Inc.'s "Comments on the Susquehanna River Basin Commission's Draft Comprehensive Plan for the Water Resources of the Susquehanna River Basin" via electronic mail and by the United States Postal Service to:

Richard A. Cairo, Esquire  
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DEP - RCSOB  
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16th Floor  
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Attn: Rulemaking and Adjudications Staff

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## I. Background

Eric Joseph Epstein's filings ("Epstein" or "Mr. Epstein") at the Susquehanna River Basin Commission and Nuclear Regulatory Commission ("NRC") relating to the relicensing and uprate of the Susquehanna Steam Electric Station ("SSES") have sought to refine and define, clarify and coordinate, and address issues that have fallen through the regulatory gaps.

The SRBC and the NRC ignored most of the technical issues relating to water use, water chemistry and public health and safety raised by Mr. Epstein, and discounted their merit as being "outside the scope" of an uprate or relicensing proceeding. (1)

Mr. Epstein's experiences at the Susquehanna River Basin Commission's ("the SRBC" or the Commission") has informed "Three Mile Island Alert, Inc.'s ("TMIA" or "TMI Alert") Comments on the Susquehanna River Basin Commission's Draft Comprehensive Plan for the Water Resources of the Susquehanna River Basin." (2)

The NRC and SRBC continues to view water use, water chemistry and aquatic challenges as outside the scope of the NRC's uprate or relicensing proceedings. Please refer to *the NRC Staff's Brief in Opposition to Mr. Epstein's Appeal of LBP--07-10* (August 16, 2007), and *PPL Susquehanna's Brief in Opposition to Appeal of Eric Joseph Epstein*. (August 16, 2007)

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1 Three Mile Island Alert, Inc. is a safe-energy organization based in Harrisburg, Pennsylvania and founded in 1977. TMIA monitors Peach Bottom, Susquehanna, and Three Mile Island nuclear generating stations. <http://www.tmia.com>

2 U.S. NRC Atomic Safety & Licensing Board Panel, Memorandum & Order, In the Matter of the PPL Susquehanna LLC, (Susquehanna Steam Electric Station, Units 1 and 2), Docket Nos. 50-387 and 50-388-OLA, ASLBP No. 07854-01-BD01, July 27, 2007: Judge G. Paul Bollwerk, II, Memorandum and Order. III. Conclusion.)

All parties can agree that unintentionally destabilizing a sensitive and important aquatic asset is not in the public interest, and all sensible and proactive measures should be deployed to mitigate against this scenario. The “merits” of a collaborative endeavor are immeasurable, and present no hardship to licensees and future applicants. Additional value is derived from diverse and informed stake holders participating in an engaged, informed, and constructive dialogue.

Any infection to the River’s body, can infect the parts as well as the sum of the region’s inhabitants. Central Pennsylvania is already under siege from regulations and mandates resulting from the deterioration of the Chesapeake Bay.

TMI-Alert is asking the Susquehanna River Basin Commission to complete a full administrative record when considering surface water withdrawals and consumptive use increases for nuclear generating stations. To date, both the SRBC and the NRC have selectively evaluated nuclear permitting, and failed to consider water use and water safety issues based on a perceived and nebulous concepts of “regulatory creep.”

### **III. Three Mile Island Alert, Inc. Comments on the Susquehanna River Basin Commission's Draft Comprehensive Plan for the Water Resource of the Susquehanna River Basin**

#### **TMIA Comment 1:**

#### **Part IV: "Priority management Areas" B) Water Supply**

***"Support and coordinate the efforts of the Commission's member jurisdictions in managing the basin's water quality"***

(p. 43, pp. 63-64 & and pp. 108-110)

Mr. Epstein began raising interagency issues with the SRBC's knowledge dating back to a hearing held by the NRC in Berwick on November 15, 2006 Berwick. Rani Franovich, Chief of the Environmental Branch that manages the Staff's environmental review of the uprate, was introduced to representatives of the Susquehanna River Basin Commission by Mr. Epstein. (3) Ms. Franovich acknowledged to Mr. Epstein she was unaware of the SRBC's charge.

The NRC ignored most of the substantive issues relating to water use, water chemistry and public health and safety raised by Mr. Epstein, and discounted their merit as being "outside the scope" of an uprate proceeding. (4)

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3 Mr. Epstein identified the legitimate and peculiar interests of the Susquehanna River Basin Commission, and introduced representatives from the NRC-NRR's, Division of License Renewal Chief, Environmental Branch to members of the SRBC in attendance."

4 U.S. NRC Atomic Safety & Licensing Board Panel, Memorandum & Order, In the Matter of the PPL Susquehanna LLC, (Susquehanna Steam Electric Station, Units 1 and 2), Docket Nos. 50-387 and 50-388-OLA, ASLBP No. 07854-01-BD01, July 27, 2007: Judge G. Paul Bollwerk, II, Memorandum and Order. III. Conclusion.) Beginning on June 5, 2007, PPL and NRC filed Responses in opposition to Mr. Epstein's Contentions at the Nuclear Regulatory Commission. NRC staff alleged that Mr. Epstein's contention (T-1) is "outside of the scope" and "not material" to this proceeding, and that there is not enough information to establish a "genuine dispute." (NRC Staff, p. 8) The NRC staff and PPL argued the issues raised before the NRC as outside the cope of the NRC's uprate proceeding. Please refer to *the NRC Staff's Brief in Opposition to Mr. Epstein's Appeal of LBP--07-10* (August 16, 2007), and *PPL Susquehanna's Brief in Opposition to Appeal of Eric Joseph Epstein*. (August 16, 2007)

The process employed by the Susquehanna River Basin Commission during the review and approval of PPL's Application uncovered substantive and procedural gaps. The process remains adrift and concealed in a bureaucratic maze.

"PPL Susquehanna, LLC's Application for Surface Water Withdrawal Request to Modify Application" (19950301-EPU-0572) application **should not inform future nuclear uprate and relicensing requests** that will come before the Commission from the Peach Bottom Atomic Power Station, Three Mile Island, and the Susquehanna Steam Electric Station, as well as Early Site Permits and Letters of Interest for the construction of new nuclear power generation stations on the Susquehanna River.

The fragmentation of "regulatory oversight" or the segmentation of a large or cumulative project into smaller components in order to avoid designating the project a major federal action has been held to be unlawful.

*City of Rochester v. United States Postal Serv.*, 541 F.2d 967, 972 (2d Cir. 1976) ("To permit noncomprehensive consideration of a project divisible into smaller parts, each of which taken alone does not have a significant impact but which taken as a whole has cumulative significant impact, would provide a clear loophole to NEPA."); *Scientists' Inst. for Pub. Information, Inc. v. AEC*, 156 U.S. App. D.C. 395, 481 F.2d 1079, 1086 n.29, 1086-89 (D.C.Cir. 1973) (statement required for overall project where individual actions are related logically or geographically). See generally W. Rodgers, *Environmental Law* §§ 7.7, 7.9 (1977) (discussing problems arising from scope and timing of environmental impact statements). The Supreme Court, however, has made clear that there is no affirmative obligation to regionalize a proposal under NEPA; a project of genuinely small scope of course would not be an impermissible segmentation. See *Kleppe v. Sierra Club*, 427 U.S. 390, 399-402, 96 S. Ct. 2718, 2725-2726, 49 L. Ed. 2d 576 (1976) (no obligation to prepare impact statement as to regional effects where no regional action proposed).

Repeated omissions based on statutory presumptions is not sound regulation or prudent public policy.

TMIA recognizes that the SRBC has limited resources and can not “drill down” on each and every request and application before the Commission. However, in the absence of milestones, markers and criteria that establish and identify a clear system of engagement, the import and exegesis of major surface water withdrawals and consumptive use allocations should not be diluted by Applicants.

The current process allows for a procedural platform that is not focused or localized, and fails to encourage openness, transparency and inclusiveness. These are not fatal deficiencies built into the system, but repairable gaps and chasms that can be remedied. The Susquehanna River Basin Commission should not allow Applicants to play a regulatory shell game.

**Remedy:** The Susquehanna River Basin Commission should execute a Memorandum of Understanding (“MOU”) with the Nuclear Regulatory Commission relating to the conduct of “respective reviews in a cooperative, coordinated manner.” (5)

Consistent with SRBC statute, the Commission has the authority to initiate, coordinate, and execute a MOU with the Nuclear Regulatory Commission to clarify, delineate, and establish mutual zones of interest.

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5 “Timing of SRBC Project Approvals Vis-à-Vis Signatory Approvals,” Policy No. 9501, May 11, 1995, and § 806.7 Concurrent project review by member jurisdictions, Federal Register, December 29, 2006, p. 78583).

## **TMIA Comment 2:**

### **Part V: “Areas of Special Interest” C) Consumptive Use Mitigation (pp. 75-76)**

On June 16, 2007 the Department of Environmental Protection (“DEP” or the DEP”) advertised that the Susquehanna River Basin Commission was proposing comprehensive revisions to its regulations governing water withdrawal and consumptive use projects. (6) The proposed changes include, *but are not limited to*:

- Require sponsors of consumptive use projects involving ground or surface water withdrawals to request approvals for both the consumptive use and the withdrawal. (Consumptive use is when water is not returned to the Susquehanna basin, including through evaporation, out-of-basin diversions, use in products, etc.)
- Require sponsors of projects withdrawing 100,000 gallons per day or more from any combination of ground and surface water to request approval of the withdrawals.
- End the recognition of “pre-compact” or “grandfathered” consumptive uses or withdrawals upon a change of ownership, and no longer allow the transfer of project approvals when a change of ownership occurs. Exceptions are contained in the definition of the term “change of ownership” for projects involving transfers between family members, transfers of agricultural land for so long as it continues to be used for agricultural purposes, and corporate reorganizations.
- Reduce the duration of consumptive use and withdrawal approvals from 25 years to 15.
- Incorporate standards for inter basin diversions, which are currently effective as policy.
- Establish an administrative appeal procedure for parties aggrieved by an SRBC decision.

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6 Proposed Rules [Federal Register: October 1, 2007 (Volume 72, Number 189) [Page 55711-55712] PART 808--HEARINGS AND ENFORCEMENT ACTIONS Dated: September 21, 2007. Paul O. Swartz, Executive Director.



**Remedy:** The Susquehanna River Basin Commission should adopt all of the above-stated, proposed rule-changes in their entirety.

**TMIA Comment 3:**

**Part V: “Areas of Special Interest”**  
**D) Drought Coordination & Economic Development and Recreation and Other Public Values.**

(pp. 76-81)

When it comes to water consumption, fish kills, thermal inversion and effluent discharges, power plants are sometimes viewed as a benign monster. During the 2002 drought, water shortages on the Lower Susquehanna reached critical levels, yet these power plants were exempted from water conservation efforts.

A sample of the magnitude of the amount of water used at nuclear power plants is readily evidenced at PPL’s Susquehanna Steam Electric Station (SSES) located on the Susquehanna River in Luzerne County.

The plant draws 40.86 million gallons per day from the Susquehanna River. For each unit, 14.93 million gallons per day are lost as vapor out of the cooling tower stack while 11 million gallons per day are returned to the River as cooling tower basin blow down. On average, 29.86 million gallons per day are taken from the Susquehanna River and not returned. This data is public information, and can be easily referenced by reviewing PPL’s Pennsylvania Environmental Permit Report. The plant returns much smaller portions of the back wash into the river at elevated temperatures. Last fall, 53 Pennsylvania counties were placed on "drought watch," including Luzerne County where the station is moored. Yet nuclear power plants are exempted from water conservation efforts.

These consumption levels are achieved at the SSES with a closed-cycle cooling system which recycles intake water; thereby, reducing the volume of water taken into the plant. Peach Bottom does not use a closed-cooling system, while TMI vaporizes large quantities of coolant and also discharges water as blow down.

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 per day.

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, and departures from normal precipitation range included 0.0 inches in York County. Peach Bottom is located in Lancaster and York Counties while Three Mile Island is situated in Dauphin and Lancaster Counties. (7)

Peach Bottom did not “conserve” water until the plant was forced close to address a massive fish kill. On August 30, 2002, high differential pressures on the circulating water intake screens forced the manual shut down 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.” (8)

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7 Source: Pennsylvania Department of Environmental Protection, *Drought Report and Drought Conditions Summary*, August-September, 2002).

8 Source: Nuclear Regulatory Commission, IR-50-277/02-05; 50-278/02-05).

Peach Bottom-2 & 3 were documented last summer returning water to the River at temperatures in **excess of 110 degrees**. Communities and ecosystems that depend on limited water resources are also adversely affected by exiting nuclear stations.

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. But any time you have a man-induced impact on top of what nature is doing, you're affecting the ecosystem, Young said (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).

## **Remedies:**

1) The SRBC should eliminate 'drought exemptions' for nuclear generating stations.

2) During the summer of 2002 drought, most of Peach Bottom and TMI's electricity were shipped out of the River Basin and out of state. The amount of water used proportioned to the % of the energy generated and shipped out of the Basin by a nuclear generating station should be assessed a reconciliation tariff.

3) The SRBC should access nuclear generators a fair market value for the difference between water consumed but not returned to the River.

4) The SRBC should require an Environmental Impact Statement to assess the following impacts as a result of uprates and license extensions:

a) Quantify and qualify the impact nuclear plants have on sport and commercial fishing, and access an annual reconciliation tariff to offset financial losses.

b) Quantify and qualify fish (game and consumable), fish eggs, shellfish and other organisms will be harmed or killed annually by nuclear generating stations, and access an annual reconciliation tariff to offset financial losses.

c) Quantify and qualify the impact nuclear plants have on shad ladders, and access an annual reconciliation tariff to offset financial losses.

#### **TMLA Comment 4:**

### **Part V: “Areas of Special Interest”**

#### **F) Emerging Contaminants**

(pp. 81-82)

Tritium is a radioactive isotope of the element hydrogen. It is naturally produced in the upper atmosphere when cosmic rays strike air molecules and as a byproduct in nuclear reactors that produce electricity.

Over the span of a decade, at least seven events have occurred at U.S. nuclear facilities where water contaminated with radioactivity leaked into the ground. “These leaks were initially undetected and remained undetected for as long as 12 years. In at least one case, the leak was not detected until after an underground plume of several million gallons of contaminated water traveled

beyond the nuclear facility's site into drinking wells. In most cases, the leak was finally detected more by happenstance than by rigorous monitoring.” (9)

On June 27, 2006 , Exelon, owners and operators of Three Mile Island, repaired leaks from the condensate storage tank. The leaks followed a telephone conduit and flooding manholes/man ways 100's of feet away from the tank. The only reason TMI even started looking for a leak was because water was flowing out of the top of one man way cover (far away from the plant), and Exelon sampled it and found tritium. They pumped all the water out of the man ways and dumped it to their industrial waste treatment system which eventually goes to the river. TMI had no idea the storage tank was leaking, how much, or for how long.

Similarly, PPL was unable to provide well logs for TW-1 and TW-2, (10) yet the SRBC “grandfathered” them into compliance. These wells are used to “supply sanitary water for the facility, to produce demineralized water, to maintain pumps seals, and for miscellaneous uses...” (11), and may (or may **not**) be included in the Company's tritium monitoring program according to recent documents submitted to the NRC which indicate “quarterly sampling of four wells.” (12)

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9 Source: Paul Gunter Director, Nuclear Information and Resource Service and David Lochbaum, Nuclear Safety Project Union of Concerned Scientists.

10 SRBC & PPL Settlement, p. 3.

11 PPL Susquehanna, LLC, Susquehanna Steam Electric Station, Units 1 and 2; Draft Environmental Assessment and Finding of No Significant Impact Related to the Proposed License Amendment To Increase the Maximum Reactor Power Level, “Liquid Radioactive Waste and Offsite Doses [Federal Register: August 21, 2007 (Volume 72, Number 161)] [Notices] [Page 46670-46680].

12 Letter to the NRC, “Susquehanna Steam Electric Station Groundwater Protection - Data Collection Questionnaire,” PLA 6086, Britt T. McKinney, Sr. Vice President & Chief Nuclear Officer, July 20, 2006.

This is information the public (and the SRBC) have a Right-to-Know given the tritium leaks that have occurred at numerous nuclear plants across the nation, and PPL's prior identification of "inadvertent releases of radioactive liquids" in December 1983, April, 1988, July, 1991, and February, 1995. The Company also reported 15 pollution incidents onsite from 1980 through 1995." (GEIS, 2-23).

Federal regulations seek to protect public health and safety from harm by limiting how much of these radioactive materials can be released from a nuclear facility to the water (and air) during both routine operation and under accident conditions.

Three Mile Island Alert is extremely disappointed that the Nuclear Regulatory Commission has thus far treated these leaks as isolated events and ignored their generic implications. The NRC has not issued correspondence to other licensees requiring them to verify there are no similar leaks ongoing at their facilities. The NRC has not met with licensees to discuss the situation and develop genuine basis for believing the problem is confined to these few facilities. The NRC has not taken steps necessary to ensure that members of the public are not now being exposed to radiation from undetected leaks.

### **Remedies:**

The Susquehanna River Basin Commission needs to condition all nuclear-related applications, uprates, license extensions, withdraws and consumption increases on answers to the following impacts:

What are the systems and components at your licensed facility that contain radioactively contaminated water?

What methods are being used to monitor leakage of radioactively contaminated water from the systems and components?

What is the largest leak rate that can remain undetected by the monitoring methods?

What methods are being used to monitor the grounds around the facility for potential leakage of radioactively contaminated water from the systems and components?

What assurance is there against a leak of radioactively contaminated water into the ground around your licensed facility from remaining undetected long enough to permit migration offsite in quantities exceeding federal regulations?

**TMIA Comment 5:**

**Part V: “Areas of Special Interest”**

**G) Energy production**

(pp. 83-85)

Power plants use millions of gallons daily for coolant and to perform normal industrial applications. There are three nuclear generation stations on the Susquehanna River. Two plants, with three units, are located on the Lower Susquehanna, have the capacity to draw in as much as half the flow of a River in a day. The Three Mile Island Nuclear Generating Station (TMI-1) and the Peach Bottom Atomic Power Stations are large consumers of water on the Lower Susquehanna and began operating in 1974.

According to the California Energy Commission, conventional power plants consume the following amounts of water (through evaporative loss, not including water that is recaptured and treated for further use):

**Water Consumption: Fossil Power Plants**

<b>Technology</b>	<b>gallons/kWh</b>	<b>liters/kWh</b>
Nuclear	0.62	2.30
Coal	0.49	1.90
Oil	0.43	1.60
Combined Cycle Gas	0.25	0.95

Water use and 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 River and the local community.

Power generation, cooling and safety are inherently connected. There is no separate imaginary fence between generation and safety. And there should be no regulatory moat created by artificial safety definitions erected by nuclear generators.

Seasonal flow, Act 220, and the competing demands for limited water resources may make the amount of power for generation unreliable. (13) 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 uprate clearly has the potential to create safety challenges by abruptly scrambling the plant or forcing power reductions to accommodate a water use budget.

We need to tear down the fictional fence that SRBC and the NRC have erected between power generation and safety. Mr. Epstein has established the nexus between safety and generation, and defeated the NRC's argument, that "...Mr. Epstein provides no basis to assume that SSES' surface water withdrawals will be restricted or that possibility is material to the licensing." (NRC Staff, NRC-ASLBP), June 5, p.17) However, PPL can not produce any evidence that water use or consumption **will not be restricted**, and PPL acknowledged an "increase in consumptive water use" (PPL, June 5, NRC-ASLBP p. 18) will **be required**.

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13 Act 220 of 2002 mandates that the Department of Environmental Protection update the state water plan by 2008. "The Environmental Quality board will adopt regulations addressing water use registration, period reporting and record keeping (Section 3118), and the DEP is authorized "to enforce the Act." It also "establishes the duty of any person to proceed diligently in complying with orders of the DEP." (Section 3133)



The SRBC must investigate the impact of the Environmental Protection Agency' (EPA) 316 (a) and 316 (b) compliance milestones on applications from nuclear power plants. To date, nuclear generating station have not established compliance milestones for EPA's Act 316 (a) or 316 (b).

The most current decision relating to 316 (a) and 316 (b) in regard to nuclear power production is the Nuclear Regulatory Commission's reversal of Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc. (Vermont Yankee Nuclear Power Station), LBP-06-20, 64 NRC 131 (2006) CLI-07-16, 65 NRC \_\_\_ (Apr 11, 2007)(ADAMS Ascension No. MLO71010217).

The 2nd Circuit's Opinion in the Vermont Yankee case is instructive, and focuses on alternative thermal effluent limitations. (14) This specific issue was never raised by Mr. Epstein because the SSES is a closed-cycle plant. The Vermont Yankee decision supports Mr. Epstein's argument that nuclear plants cannot subvert existing state regulations, and they will have to comply with 316 (a) and 316 (b) regardless of the timing, and the majority decision does not preclude the application of a site-specific scoping brush from being applied to nuclear water withdrawal applications.

The Court's ruling supports Mr. Epstein's argument that nuclear operators can not subvert or "attack" existing state regulations (Act 220) or federal statutes (of the Susquehanna River Basin Commission) or assume compliance based on timing or lack of a firm time frame.

Moreover, this ruling doesn't mean that 316 has disappeared or nuclear generating stations will not have to be complaint with a federal mandate. Only the timing for compliance has changed. While the NRC begs off evaluation of these critical issues, it does not announce how these issues, which the Agency placed outside it's "scope," (15) should be cured or approached:

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14 Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc. (Vermont Yankee Nuclear Power Station), LBP-06-20, 64 NRC 131 (2006) CLI-07-16, 65 NRC \_\_\_ (Apr 11, 2007)(ADAMS Ascension No. MLO71010217).

Additionally, as the Commission has made apparent in other contexts, see Hydro Resources, CLI-98-16, 48 NRC 119, 121-122, absent some need for resolution to meet the agency's statutory responsibilities, the agency's adjudicatory process is not the forum for litigation matters that are primarily responsible of other federal or state/local agencies.

The NRC is content to let a regulatory wall catch fire in the naive hope that it will not spread to other walls that may (or may not) be its responsibility; while at the same time, acknowledging the potential harm:

To be sure, the EPU request will have implications in terms of increased water consumption, entrainment and impingement, and thermal and liquid effluent discharges, all of which are evaluated in the ER accompanying the PPL application that has not been the subject of Epstein's contentions. (16)

## **Remedies:**

1) The SRBC must review the impact and timing of the Peach Bottom Atomic Power Station, the Susquehanna Steam Electric Station and Three Mile Nuclear Generating Station's compliance with 316 (a) and 316 (b) based on the duration of license extensions and the impact of power uprates.

2) The Commission must order the above nuclear generating stations to submit to the SRBC for review and approval plans and strategies for implementing EPA's 316 (a) and 316 (b) based on the impact to the Susquehanna River as a result of power uprates and 20 year license extensions.

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16 U.S. NRC Atomic Safety & Licensing Board Panel, Memorandum & Order, In the Matter of the PPL Susquehanna LLC, (Susquehanna Steam Electric Station, Units 1 and 2), Docket Nos. 50-387 and 50-388-OLA, ASLBP No. 07854-01-BD01, July 27, 2007: Judge G. Paul Bollwerk, III, Chairman

## TMIA Comment 6:

### Part V: “Areas of Special Interest”

#### I) Invasive Species

(pp. 87-89)

The SRBC should **require or investigate site-specific aquatic challenges** (17) and review **outdated, and “grandfathered” data** submissions.

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. (18) Zebra mussels, like Asiatic clams, shad and other biological fouling, (19) can invade the SSES from the Susquehanna River.

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17 PPL Susquehanna, LLC, Susquehanna Steam Electric , Units 1 and 2; Draft EIS and Finding of No Significant Impact Related to the Proposed License Amendment to Increase the Maximum Reactor Power Level, Federal Register: August 21, 2007 (Volume 72, Number 161, pp. 46670-46680.)

18 “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)

19 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)

Zebra mussels were recently discovered at PPL' fail-safe water supply in Cowanesque Lake and noted: "There is no evidence zebra mussels have been found in 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.

Neither SRBC or the NRC addressed health, safety and structural challenges caused by micro fouling versus macro foiling, micro biologically influenced corrosion, 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 quagga mussels.

## **Remedies:**

The SRBC is not restricted by the artificial limitations and narrow scope the NRC imposed on itself. The SRBC should **require or investigate site-specific aquatic challenges**, and review **outdated and "grandfathered" data** submissions.

The SRBC should compel nuclear generating stations to physically inspect the intake pipes at nuclear generating stations, and operators to submit an plan to defeat health, safety and structural challenges that include but are not limited to: micro fouling, macro foiling, micro biologically influenced corrosion, biofilm disease causing bacteria such as Legionella and listeria, and the eastward migration of Asiatic clams, zebra mussels and the anticipated arrival quagga mussels.

## IV. Conclusion

Mr. Swartz stated in the proposed rule change, “As the demand for water continues to increase for domestic supplies and economic development, the Commission’s goal is to manage and support that growth, while we protect the environment and existing water users at the same time. We believe these proposed regulatory changes will enhance the Commission’s ability to do just that.”

Even more baffling are the regulatory moats that federal and state agencies erect to protect rigid and exclusive zones of interest that have been established without a collaborative framework. This type of regulatory behavior gives rise to undesired corporate behaviors such as “grandfathering” and “back fits,” e.g., unapproved “uprates,” passive deterioration of monitoring equipment, “immature” and inadequate scale model testing,” time delays causing avoidable leaks, and waivers for monitoring wells.” (Epstein Appeal, p. 12 and Epstein, Amended Appeal p. 14)

Lack of regulatory coordination establishes a deleterious precedent, and could constitute *de facto* approval of grandfathered consumptive use and surface water withdrawal permits.