



Before the Susquehanna River Basin Commission
Testimony of Eric J. Epstein,
December 11, 2020

Nuclear plants use millions of gallons of water daily for coolant and to perform normal industrial applications. There are five nuclear power plants on the Susquehanna River. Two plants, with three units, are located on the Lower Susquehanna; they have the capacity to draw in as much as half the flow of the river in a day.

Millions of fish (game and consumable), fish eggs, shellfish and other organisms are sucked out of the Susquehanna River and killed by nuclear power plants annually. It is hard to know just what the impact on fisheries is, because water intakes have been under the radar screen compared to some types of pollution.

The Lower Susquehanna is an ideal location for fossil and nuclear power plants which require large volumes of water for cooling. Water use for electric power generation in the lower Susquehanna River includes five hydroelectric projects: York Haven, Safe Harbor, Holtwood, Muddy Run, and Conowingo. Two nuclear plants in the same region include three units: Peach Bottom Atomic Power Station (“PBAPS” or “Peach Bottom”), and Three Mile Island Nuclear Generating Station (“TMI”). The nuclear plants accounted for almost 55% percent (3,628 MW) of the generation capacity on the lower Susquehanna River prior to the closure of Three Mile Island (“TMI”) Unit-1.

Peach Bottom requires about 2,230 million gallons daily (“mgd”) or 3,450 cubic feet per second (“cfs) at full power operation for its two boiling water reactors. Three Mile Island is a pressurized water reactor. The daily consumptive use was significant prior to the transition from operational status to decommissioning mode, i.e., 21 million gallons daily or 32.5 million cfs.

Both Peach Bottom and Three Mile Island increased their generating capacity through an Extended Power Uprates (“EPU”). Uprates require a nuclear plant to increase the amount of water drawn from the Susquehanna River. The Susquehanna River Basin Commission (“SRBC” or “Commission”) controls water withdrawals within the Susquehanna River basin in Pennsylvania, New York and Maryland to ensure that adequate supplies are available to all users. The SRBC’s rules require companies like Exelon to seek the Commission's approval for any change in processes that requires them to increase water usage by 100,000 gallons a day.

All of Pennsylvania’s nuclear reactors have increased capacity through power uprates dating back to 1988. Uprates require millions of gallons of additional water every day from the Susquehanna River. For example, Susquehanna’s Electric Steam Station’s Extended Power Uprate increased water consumption from the Susquehanna River from 61 to 70 million gallons per day. (1)

1 The Nuclear Regulatory Commission, Environmental Impact Statement, April, 2008.

In December, 2006, Exelon was fined \$640,000 by Susquehanna River Basin Commission for water violations at Peach Bottom related to the unauthorized uprate withdrawals. (2) On October 22, 2009, Exelon met with the Nuclear Regulatory Commission and detailed plans for uprates at Peach Bottom in 2011-2012 and 2013-2014, and Three Mile Island in 2013-2014. (3)

Susquehanna River water is a limited and valuable commodity, and should be managed accordingly.

Water in the Susquehanna River Basin is used for hydropower production and cooling for fossil and nuclear power plants, as well as for municipal and private water supplies, agricultural production, and recreation. Consumptive water use in the basin is largely for public water supply diversion and utility power generation, with smaller uses for recreation, manufacturing, mining, and educational facilities (figure 3-7). The maximum approved daily consumptive water use in the Susquehanna River Basin is 563.1 million gallons per day (mgd), and the majority of the use occurs in the lower basin. (4)

TMI-Alert submitted testimony to the SRBC on February 6, 2020. We stated that TMI-1's license was no longer operational. TMI-1 is now a Possession Only Licensee. Michael Gallagher, Vice President, License Renewal and Decommissioning, Exelon Generation Company, LLC, wrote to the NRC on April 5, 2019: "TMI-1 will permanently cease operation no

2 Susquehanna River Basin Commission, Docket #, 20061209.

3 Nuclear Regulatory Commission, DAMS, ML: 092940052.

4 Federal Energy Regulatory Commission, Final Multi-Project Environmental Impact Statement, March 2015, FERC/FEIS-0255F, p. 93.

later than September 30, 2019." (5) TMIA requested the status of Exelon's water use rights with the Susquehanna River Basin Commission, and received the following responses on April 27, 2020.

TMIA: "What are the consumptive and surface withdrawal parameters for Three Mile Island Unit-1 when the plant was licensed to operate?"

SRBC: "TMI Unit 1 is approved by SRBC to withdraw up to 122.8 million [sic] gallons per day (mgd) from the Susquehanna River and approved to consume up to 19.2 mgd."

TMIA: "What is the duration of TMI's contract for water use with the SRBC?"

SRBC: "The SRBC approvals were issued with [the] expiration date of April 19, 2034, which coincides with the expiration of the US NRC operating license. The contract between SRBC and TMI for consumptive use mitigation water storage is effective for so long as they comply with the provisions of the contract."

TMIA: "What are the parameters of consumptive and surface withdrawal permits at Three Mile Island now that that the Nuclear Regulatory Commission has placed TMI into non-operating status?"

SRBC: "The consumptive use and surface withdrawal approvals from SRBC have not changed yet as a result of the non-operating status. Commission staff is working with TMI operators to determine future operating parameters, and will modify the permits as appropriate."

On December 4, 2020, TMIA renewed previous requests based on the cessation of operations at TMI which includes a reduction in Emergency Planning, and a request to eliminate property taxation. (5)

Both plants at Three Mile Island are officially and permanently shut down. (6) Daily water use has substantially decreased, but will likely produce contaminated wastewater. TMI-Alert is requesting the Commission compel Exelon and FirstEnergy to reduce their excess water capacity. Three Mile Island's water use contracts are antiquated, and require modification and the adoption of revised “triggers” that reflect: 1) Used and useful life of plant, 2) Operational or deactivated status of power plants; and, 3) Termination contract with firm dates. In addition, the SRBC should determine the amount of water needed on a daily basis - and returned to the river - for decontaminating and decommissioning TMI’s reactors.

5 “A year after the facility was de-activated, Exelon Generation Co. is seeking a massive property tax cut for its Three Mile Island nuclear power station.”

“In fact, the company is arguing in an appeal filed in Dauphin County Court that it shouldn’t have to pay any real estate taxes on the hulking dead plant along the Susquehanna River in Londonderry Township.” (Penn Live, December 2, 2020).

6 Three Mile Island Granted Emergency Planning Exemptions, <https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML20244A291>.

This filing certified the end of nuclear power operations at Three Mile Island, and allows for reduced emergency planning and staffing cuts .

Respectfully submitted,

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cc: Service List