pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Patrick D. Navin
Plant Manager
Exelon Generation Company LLC
1848 Lay Road
Delta, PA 17314-9032

Re: Response to Final Report for Post-EPU Thermal and Biological Monitoring
and Notice of Planned Measurement Uncertainty Recapture Uprate
Peach Bottom Atomic Power Station (PBAPS)
NPDES Permit No. PA0009733
Peach Bottom Township, York County

Dear Mr. Navin:

This letter is in reference to the final report for Post-EPU Thermal and Biological Monitoring and notice of Planned Measurement Uncertainty Recapture Uprate recently submitted by Exelon Generation Company LLC (Exelon) to support compliance with the existing permit requirements developed under Section 316(a) of the Clean Water Act (CWA). The Department of Environmental Protection (DEP) has reviewed these documents and would like to provide the following comments:

Final Report for Post-EPU Thermal and Biological Monitoring

In accordance with Part C.I of the above-referenced NPDES permit reissued in 2014, a study plan was developed to perform one-year biological and thermal monitoring[1] in order to evaluate the impact on the fish and macroinvertebrate populations in the Susquehanna River as a result of thermal component of the discharge from the above-referenced facility following implementation of the extended power uprate (EPU) which was completed in 2016. The study was also determined to be necessary to compare post-EPU conditions with predictions, such as the characteristics of the plume, made in the previous monitoring study performed during the period from 2010 through 2013 (i.e., demonstration study; *finalized in 2013*). A review of the submitted final report for 2016 Post-EPU Thermal and Biological Monitoring revealed that Exelon has adequately implemented the monitoring plan through this one-year study and has addressed all of the components of this study in the final report. DEP has therefore determined that Exelon has achieved compliance with the existing permits requirements and continuation of CWA Section 316(a) thermal variance is still warranted for the current NPDES permit term.

DEP appreciates Exelon's efforts to collect extensive physical and biological data to support the monitoring requirements. While continuation of the thermal variance is warranted for the

[1] Temperature monitoring from May 1 through September 30 of 2016, Dissolved Oxygen monitoring from July 1 through August 31 of 2016, Biological monitoring May 1 through September 30 of 2016.

remainder of current permit cycle, DEP strongly recommends that Exelon consider operation of the cooling tower(s) until the end of September of each year. No cooling towers were operated in September 2016 as it was not required by the permit. For many of the downstream monitoring stations, several year-to-year analyses in the final report show that daily average water temperatures in September 2016 were warmer than temperatures measured in September of previous years. Furthermore, temperature differences from the intake to the downstream monitoring station 214 in September were mostly higher than those calculated for any of the months within the 2016 monitoring period. For macroinvertebrate community, Exelon concluded, along with other findings, that a temporary impact, in terms of lower IBI scores, was observed at two (2) downstream monitoring stations in September. All of above-mentioned items were identified during the monitoring period presumably due to the unusual ambient river conditions observed in September 2016 that were repeatedly mentioned in the final report (i.e., very low-flow with high ambient water temperatures). However, the final report indicates that the average temperature rise from the intake to the head of discharge canal in September 2016 was higher than previously predicted in the demonstration study (i.e., 22.5°F v. 22.4°F; Table 3-5 of the final report). As a result, higher water temperatures were observed at the downstream monitoring stations not only because of unusual river conditions occurred in September but possibly because of additional thermal load potentially generated from the facility. In order to protect the aquatic community, the operation of the cooling tower(s) may be necessary during any of naturally-occurring high temperature periods to additionally "balance" the thermal load generated from PBAPS. Exelon observed during the monitoring period that the per tower discharge canal cooling was higher than previously expected in the demonstration study (i.e., 2.2°F v. 1.6°F); therefore, using the cooling tower(s) additionally in September will further mitigate potential impacts on the fish and macroinvertebrate populations in the Susquehanna River as a result of thermal component of the discharge.

This final report as well as any relevant information provided by Exelon will be considered in developing appropriate permit requirements for the subsequent NPDES permit renewal.

Notice of Planned Measurement Uncertainty Recapture Uprate

As per reporting requirements set forth in Part A.III.C.2.b of the above-referenced NPDES permit reissued in 2014, Exelon has indicated via a letter dated February 17, 2017 that additional thermal loading is expected as a result of a Measurement Uncertainty Recapture (MUR) uprate of PBAPS Units 2 and 3. The MUR uprate, in which the license amendment is scheduled to be submitted to the NRC by the end of February 2017 according to the February 17, 2017 letter, will increase the station's licensed power level from 3951 MWth (megawatt thermal) to 4016 MWth. It is expected that this change will ultimately result in a plant intake to discharge temperature (Δt) increase of up to 0.4°F over current conditions[2] and the net temperature increase at the near field temperature stations downstream of the plant would range from 0.02°F and 0.06°F over the EPU model. Based on the given information, DEP has determined that the MUR uprate is not expected to significantly

[2] The February 17, 2017 letter documented that the net increase projected for MUR will be only 0.1 °F as the actual maximum net temperature under EPU conditions was determined to be 22.1 °F as opposed to 22.4 °F which is the value predicted during the Section 316(a) demonstration study.

contribute to additional thermal impacts on the Susquehanna River. Consequently, no NPDES permit amendment is required at this time. However, because the expected Δt value was determined solely based on assumptions determined through the application of EPU model, DEP requests that temperature monitoring be conducted following implementation of the uprate to validate such assumptions. Given that the uprate is scheduled for April, 2018 according to the February 17, 2017 letter, DEP is requesting that Exelon to submit the one-year monitoring data with the subsequent NPDES permit renewal application which is due by April, 2019.

Section 316(a) Thermal Variance Request

Pursuant to 40 CFR §122.21(l)(6), a request for a variance under CWA Section 316(a) for the thermal component of the discharge must be filed with a timely NPDES permit renewal application. If such request will be submitted with the NPDES permit renewal application, please contact DEP to discuss any additional information that may be necessary for DEP to evaluate continuation of CWA Section 316(a) thermal variance for PBAPS during the subsequent NPDES permit renewal application review process.

If you have any questions, please contact me at 717.705.4795 or mbebenek@pa.gov.

Sincerely,

Maria D. Bebenek, P.E.
Environmental Program Manager
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