



SUSQUEHANNA RIVER  
BASIN COMMISSION

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NY ■ PA ■ MD ■ USA

August 23, 2017

Mr. Elder Ghigiarelli, Jr.  
Deputy Program Administrator  
Wetlands and Waterways Program  
Water Management Administration  
Maryland Department of the Environment  
1800 Washington Boulevard, Suite 430  
Baltimore, MD 21230

Re: Section 401 Water Quality Certification Application  
Conowingo Hydroelectric Project (FERC Project No. 405)

Dear Mr. Ghigiarelli:

The Susquehanna River Basin Commission (SRBC) appreciates the opportunity to provide comments as part of Maryland Department of the Environment's (MDE) process regarding the Proposed Conowingo Hydroelectric Project Water Quality Certification Application under the Clean Water Act.

Concurrent with FERC's jurisdiction, SRBC regulates hydroelectric projects pursuant to Article 3, Section 3.10, and Article 10, Section 10.1, of the Susquehanna River Basin Compact, P.L. 91-575, 84 Stat. 1509 et seq., and SRBC Regulations 18 CFR Parts 801, 806, 807, and 808. SRBC authorizes hydroelectric projects in accordance with the "Comprehensive Plan for the Water Resources of the Susquehanna River Basin" (Comprehensive Plan), dated December 2013, and as mandated by Article 14 of the Susquehanna River Basin Compact.

### **GENERAL COMMENTS**

Operation of the Conowingo Hydroelectric Project results in significant hydrologic alteration to the lower Susquehanna River and upper Chesapeake Bay. As such, SRBC has a strong interest with its management considering the operations have the ability to strip any benefits related to upstream management actions implemented by either SRBC or its member jurisdiction agencies, including the state of Maryland. Additionally, SRBC is not convinced the Final Environmental Impact Statement meets the water quality components of our own Comprehensive Plan, and that flow considerations outlined in our following comments are a significant component in rectifying that shortfall.

## COMMENTS REGARDING INSTREAM FLOWS

- The existing Conowingo Hydroelectric Project intra-daily peaking operations create a severely altered flow regime in which conditions routinely fluctuate rapidly between drought (minimum flow) and flood (generation flow) conditions in a single day.
- Rapidly fluctuating flow conditions resulting from Conowingo Hydroelectric Project operations significantly impact persistent suitable habitat, hydrologic cues of resident and migratory fishes, and stranding and mortality of various aquatic organisms.
- The existing minimum flow requirements for the Conowingo Hydroelectric Project range from as high as the monthly 85th percent exceedance flow (August) to as low as below record minimum flows (December through June) recorded at the United States Geologic Survey (USGS) Susquehanna River at Marietta, Pennsylvania stream gage. Furthermore, the existing minimum flow requirements for the months of December through February are intermittent, permitting a 6-hour on/off condition where no minimum streamflows are maintained downstream.
- While the flow regime proposed in the Conowingo Hydroelectric Project Water Quality Certification Application reflects an elimination of the intermittent minimum flow requirements for the months of December through February and an increase in minimum flows for most months, most notably for April and May, there are also decreases in minimum flows for August and the first half of September, which are critical low flow months when the aquatic ecosystem is most prone to stress during drought events.
- The percentage of maximum weighted usable area habitat for the proposed minimum flow regime cited in the Conowingo Hydroelectric Project Water Quality Certification Application reflects values less than 60 percent for several key target species and their life stages, including American shad, striped bass, and smallmouth bass. Furthermore, these data are not entirely applicable given Conowingo Hydroelectric Project peaking operations where conditions routinely fluctuate rapidly between drought (minimum flow) and flood (generation flow) conditions in a single day. In these settings, persistent habitat is a more suitable metric for assessing the impact of Conowingo Hydroelectric Project operations on target species.
- The SRBC's Low Flow Protection Policy is utilized to establish limitations or conditions on approvals issued by the Commission for withdrawals from streams or impoundments to ensure that any flow alteration related to such withdrawals does not cause significant adverse impacts to the downstream water resources, or to support a denial of any such application request where such standards cannot be met. For a water use project as significant as Conowingo Hydroelectric Project, and located on an impounded Aquatic Resource Class 6 mainstem river, the minimally protective standard for such withdrawals is the calculated monthly 95<sup>th</sup> percent exceedance conservation release. Conservation releases are intended to prevent water quality degradation and adverse lowering of streamflow levels downstream of the impoundment, thereby protecting aquatic resources

and other water uses. Because SRBC's Low Flow Protection Policy would typically allow no flow alteration below the monthly 95<sup>th</sup> percent exceedance flow, we are concerned that both the existing and proposed minimum flow requirements for the Conowingo Hydroelectric Project provide *less* than the 95<sup>th</sup> percent exceedance flow values below the dam for the months of October through July. It is important to note that SRBC would not likely issue an approval with similar conditions, which for a significant project such as the Conowingo Hydroelectric Project would be considered to provide less than the minimally protective downstream flow.

- Despite numerous agency and stakeholder comments submitted throughout the Federal Energy Regulatory Commission (FERC) relicensing process, none of the other agency/stakeholder-formulated flow management alternatives modeled by Exelon, which subsequently provided detailed hydrologic and habitat output data analyzed by the agency/stakeholder group, were considered and fully analyzed as complete action alternatives. Nonetheless, the Conowingo Hydroelectric Project Water Quality Certification Application states that the proposed minimum flow regime “adequately mitigates the impacts of the Project’s regulation of flow in the lower Susquehanna River, and protects suitable habitats and key natural processes”, despite the lack of a detailed examination of the environmental and financial benefits and trade-offs associated with a suite of operational alternatives and their specific components that is integral to striking a proper balance between the benefits of power generation and the economic and ecologic benefits of adequate instream flows in the lower Susquehanna River and upper Chesapeake Bay.
- In 2013, an agency/stakeholder group focused on flow management issues associated with FERC relicensing of Conowingo Hydroelectric Project submitted a flow management proposal intended to balance operational, economic and ecosystem needs, recognizing that the Conowingo Hydroelectric Project is an important electric generation asset and the lower Susquehanna River and upper Chesapeake Bay are irreplaceable ecological assets that also provide economic and social benefits. The flow management proposal was based on detailed analysis of hydrology, operations and habitat availability associated with the nine OASIS model runs the agency/stakeholder group submitted to Exelon in 2012. It also took into account settlement discussions between the agencies/stakeholders and Exelon. The proposal addressed three main flow management components, which include minimum flow, maximum up- and down-ramping rates, and maximum flow. The flow management proposal is attached herein.

## CONCLUSION

Based on the unresolved comments presented above, SRBC respectfully submits the following considerations.

1. For the benefit of downstream aquatic habitat, water quality, water availability, and freshwater inflows to the Bay, SRBC recommends employing a two tiered monthly

minimum flow requirement predicated on inflow conditions measured at the USGS Susquehanna River at Marietta, Pennsylvania stream gage:

- i. The required minimum flows for above normal flow conditions (greater than monthly 50<sup>th</sup> percent exceedance flow) in March through November should be based on monthly 75<sup>th</sup> percent exceedance flows. For December, January, and February, the required minimum flows should be based on the monthly 92<sup>nd</sup> percent exceedance flows.
  - ii. For below normal streamflow conditions (less than monthly 50<sup>th</sup> percent exceedance flow) required minimum flows should be based on monthly 92<sup>nd</sup> percent exceedance flows. For December, January and February, the required minimum flows should be the minimum of inflow or the monthly 92<sup>nd</sup> percent exceedance flow.
2. SRBC recommends seasonal maximum ramping rate requirements to improve persistent habitat for target species downstream and to avoid stranding and mortality of a variety of aquatic organisms, as well as to improve fish passage. Again as outlined in the attached flow proposal, for October through June, the maximum down ramping rate should be set at 20,000 cubic feet per second / hour (cfs/hr). For July through September, the maximum down ramping rate should be governed by two triggers using the Marietta gage, with measured flows less than 30,000 cfs and less than 86,000 cfs setting the rate at 10,000 cfs/hr and 20,000 cfs/hr, respectively.

Again, SRBC appreciates the opportunity to provide these comments as part of MDE's water quality certification process. Should you have any questions regarding SRBC's review comments, please feel free to contact me at (717) 238-0423, extension 1221, or via e-mail at [adehoff@srbc.net](mailto:adehoff@srbc.net).

Sincerely,



Andrew D. Dehoff, P.E.  
Executive Director