SRBC input – Maryland 401 Water Quality Certificate for Conowingo Dam

The Conowingo Dam is one of the most prominent features on the Susquehanna River. SRBC was very active in the FERC licensing processes of 1984 and 2014 based on the determination that the dam met the criteria of the Susquehanna River Basin Compact as a significant interstate project and is thus subject to Commission oversight, including the expectation that its operations comply with the goals and objectives enumerated in the *Comprehensive Plan for the Water Resources of the Susquehanna River Basin*.

The capacity of the dam's turbines and gates, in concert with its location on the lower River, provide Exelon complete control over delivery of freshwater flow to the lower River and upper Bay for a significant range of flows typically observed on the lower River. This capability presents serious concerns during fish migration and during low flow periods and has important implications for water supply intakes, aquatic habitat and water quality immediately downstream of the dam.

The Commission, in cooperation with The Nature Conservancy and partner agencies, has expended considerable effort developing standards and recommendations for an improved flow management plan at Conowingo Dam intended to strike a balance between the use of the Basin's water resources for economic development and the propagation of beneficial aquatic habitats downstream of the dam. These standards and expectations are applied throughout the watershed and are critical in assuring that flows reaching Maryland are sufficient in quantity to support power generation, public water supply and ecological functions of the aquatic habitat of the lower River. It is the Commission's position that Exelon should be held to these same standards.

Generally, the multi-agency recommendations for flow management include minimum outflow requirements, maximum outflow limitations, and constraints on the rates of change between minimum and maximum operations. The attached table summarizes the recommendations.

Justification of recommended minimum flows, maximum flows and rate of change limitations

The monthly flow recommendations and rate of change constraints were developed in consultation with experts from many jurisdictions, disciplines and agencies. The best available data, models and literature show that existing Conowingo operations have significant adverse impacts on populations and habitat for fish, mussels, endangered species, submerged aquatic vegetation and macroinvertebrates. Flow requirements proposed by Exelon and FERC differ very little from existing requirements, which were imposed at a time when the operational goal was simply avoidance of complete extinction of species, not a reasonable balance between facility preferences and ecological and societal priorities. The multi-agency proposal provides for increases in persistent and useable habitat during migration and all life stages of fish and macroinvertebrates as well as providing sustained conditions that will promote water quality enhancing processes such as vegetation establishment and growth and propagation of mussel species.

Any flow management proposal must consider that Conowingo operations have the capacity and capability to exert complete control over the delivery of freshwater from the lower Susquehanna River to the Chesapeake Bay. Exelon is able to transform average river flow conditions into

extreme low flow and high flow conditions within the same 24-hour period. Exelon should not be permitted to unilaterally manipulate delivery of water that the remainder of the watershed sends downstream for support of the lower River and upper Bay.

Curiously, the FERC and Exelon flow proposal contains contradictory flow requirements. In some of the most critical low flow months (May through September), the draft license imposes the most protective of standards, calling for maintenance of the 92nd percentile flow on a monthly basis. However, in the other months of the year when water is generally much more abundant, the draft license would allow minimum flows at rates that rarely, and in some cases never, occur naturally. The agency proposal would simply impose the same percentile flow rate across all months, recognizing that there are important ecological functions occurring year-round.

A chief argument by Exelon against the agency proposal is concern for the impact to project revenues. Internal corporate assessments may have been conducted to demonstrate this conclusion, but the agency proposal was not among the alternatives formally assessed by FERC. The consensus among the agencies is that impact to revenues is likely to be insignificant for the reasons that 1) proposed minimum and maximum flows represent only slight deviations from existing rates (akin to nibbling around the edges); 2) Exelon would retain a great deal of flexibility in how and when to operate at such flows, in order to continue to optimize revenues; and 3) the proposal allows for a tiered approach for imposing minimum flows such that expectations are more favorable to Exelon's revenue during drier flow conditions. If nothing else, formal and transparent cost assessments should be conducted before any element of the agency proposal is deemed economically infeasible.

Another missing and related element of the FERC/Exelon proposal is an assessment of economic benefits of operating under the agency flow management proposal. The agencies contend that there are water quality and recreational benefits to operating within the recommended constraints, which will offer economic benefits to Maryland in the form of decreased costs associated with meeting Chesapeake Bay TMDL requirements and increased recreation-based revenues.

Finally, the issue of rate of change from peaking operations to minimum flows, and vice versa, is based on the interest in ensuring that aquatic habitats, and the denizens they support, are not subjected to rapid fluctuations that threaten habitat persistence and long-term survival. This consideration may be especially critical for federal and state listed endangered species such as the Atlantic and shortnose sturgeons and the map turtle.

Other considerations

Because of the critical importance of Conowingo operations on the functions in the lower River and upper Bay, as well as ensuring availability of water for power production and public water supply, it will be vital that active oversight and management continue beyond issuance of the Water Quality Certificate and FERC license and throughout the 46-year license term. The Commission has developed and maintains a hydrologic model to assist in making and implementing management recommendations for the resources of the lower Susquehanna River. In the interest of enhancing modeling capabilities and beneficial oversight, Commission staff

proposes to conduct in partnership with Exelon and our state member jurisdictions the following activities following issuance of the Water Quality Certificate:

- conduct an annual drought exercise with resource agencies and major facilities operating on and along the lower Susquehanna River to gain a better understanding of potential drought impacts and evaluate optimal operations for ensured sustainability of societal and ecological flow needs during times of drought;
- conduct flow assessments on larger ungaged tributary streams contributing to the reservoir to improve hydrologic modeling and predictive capabilities;
- measure/monitor flow and water quality entering Conowingo Reservoir from the Holtwood hydroelectric facility, to enhance modeling and management expectations and capabilities;
- conduct periodic targeted bathymetric mapping after scour events to assess and understand sediment distribution and movement;

Within the context of Chesapeake Bay TMDL pollutant reduction goals, the Commission would be supportive of a requirement for Exelon to make an annual contribution towards addressing the additional load reductions necessary within the Lower Susquehanna Subbasin as a result of the loss of trapping capacity behind the dam. As part of any such requirement, the Commission would be willing to conduct, or coordinate, monitoring and BMP implementation activities in support of meeting TMDL goals.

City of Baltimore considerations:

- The City has requested to increase its approval to withdraw from the River, which as a diversion constitutes a consumptive use (CU) under Commission rules.
- The City's SRBC Docket states that CU mitigation is required for increased withdrawals.
    - mitigation requirement is currently satisfied through reduction of withdrawal to pre-1971 drought maximums plus an additional quantity evaluated through the Conowingo Pond study.
- Commission policy allows for satisfaction of mitigation requirement through sustained releases of appropriate quantities from reservoirs during low flow periods; future operation of Conowingo Dam under the Water Quality Certificate could be assessed against Commission policy and management goals to determine if it satisfies Commission mitigation requirements and absolves the City from seeking additional mitigation measures.