Attachment 2

Response to RAI ENV-20 Question 5.3.2-3 and RAI ENV-21 Question 2.4.1-9
(Redacted)

RAI ENV-20
Question 5.3.2-3

ESRP Section 2.3.1 directs that the staff describe water use that could affect or be affected by construction and operation of the plant. ESRP Section 2.4.2 directs that the staff describe the aquatic environment and biota at and in the vicinity of the Bell Bend site and other areas likely to be affected by the construction, maintenance, or operation of the proposed project. ESRP 5.2.1 directs that the staff identify, describe, and analyze hydrologic alterations resulting from plant operation. ESRP 5.2.2 directs that the staff analyze and assess predicted impacts of plant operation on water use. The staff should analyze and evaluate the impacts resulting from hydrological alterations and water quality changes that could affect water use and should analyze and evaluate proposed practices to minimize or avoid these impacts.

The applicant and the Susquehanna River Basin Commission (SBRC) have informed the NRC staff that during low flow periods supplemental water would need to be obtained by the applicant to continue operation of the proposed Bell Bend Nuclear Power Plant (BBNPP). The NRC staff needs to evaluate the ecological effects of the potential addition of up to 28 million gallons per day of supplemental water on local aquatic ecosystems. The applicant has not disclosed how it plans to obtain and deliver this supplemental water to the Susquehanna River. To determine the ecological effects of supplemental water use, the NRC staff requests that the applicant provide information on the options for flow supplementation that are available, the locations of the discharge points for each option, and the likely frequency and amount of supplementation water that would be discharged.

Name and describe the waterbody into which the supplemental water would be discharged, indicate the point on that waterbody at which the water would be discharged, describe the current flow and ecological conditions of that waterbody at and downstream of the discharge point. Also describe the potential ecological effects of adding supplemental water to the water body at and downstream of the discharge point for each water source location and source type, such as impacts to habitat and aquatic species including important species as defined in Table 2.4.1-1 of the ESRP, such as ecological, commercial, and recreational species.

Acceptance Criteria:
ESRP Sections 2.3.1, 2.4.2, 5.2.1, and 5.2.2

Response

Request 1: "To determine the ecological effects of supplemental water use, the NRC staff requests that the applicant provide information on the options for flow supplementation that are available, the locations of the discharge points for each option, and the likely frequency and amount of supplementation water that would be discharged."

Please refer to Response 3 and Enclosure 1 of PPL Bell Bend, LLC's response to NRC RAI ENV-019, provided with letter BNP-2012-281, dated December 4, 2012[4], for the discussion of supplemental water use. The SRBC will specify project requirements for meeting their consumptive use regulation and passby flow policy by the end of December 2012.

Request 2: "Name and describe the waterbody into which the supplemental water would be discharged, indicate the point on that waterbody at which the water would be discharged, describe the current flow and ecological conditions of that waterbody at and downstream of the discharge point."

[4] BNP-2012-281, R. R. Sgarro (PPL Bell Bend, LLC) to U.S. NRC Document Control Desk, "Response to RAI ENV-19," dated December 4, 2012

[redacted]

Request 3 "...describe the potential ecological effects of adding supplemental water to the water body at and downstream of the discharge point for each water source location and source type, such as impacts to habitat and aquatic species including important species as defined in Table 2.4.1-1 of the ESRP, such as ecological, commercial, and recreational species."

The Bell Bend Nuclear Power Plant Combined License Application, Part 3, Environmental Report (ER) Sections 4.2 and 4.3 deal with water-related and ecological impacts from the construction of the Bell Bend Plant. ER Section 5.2 deals with the water-related impacts of plant operation. The impacts of low flows such as 7Q10 occur infrequently and for short periods of time. Adding supplemental water to maintain levels above this threshold are expected to maintain habitat and reduce impacts on aquatic species as they will seek out deeper, cooler water. [redacted]

[redacted]

[redacted]

COLA Impact

The BBNPP COLA will not be revised as a result of this response.

Table 1
FLOW (cfs)

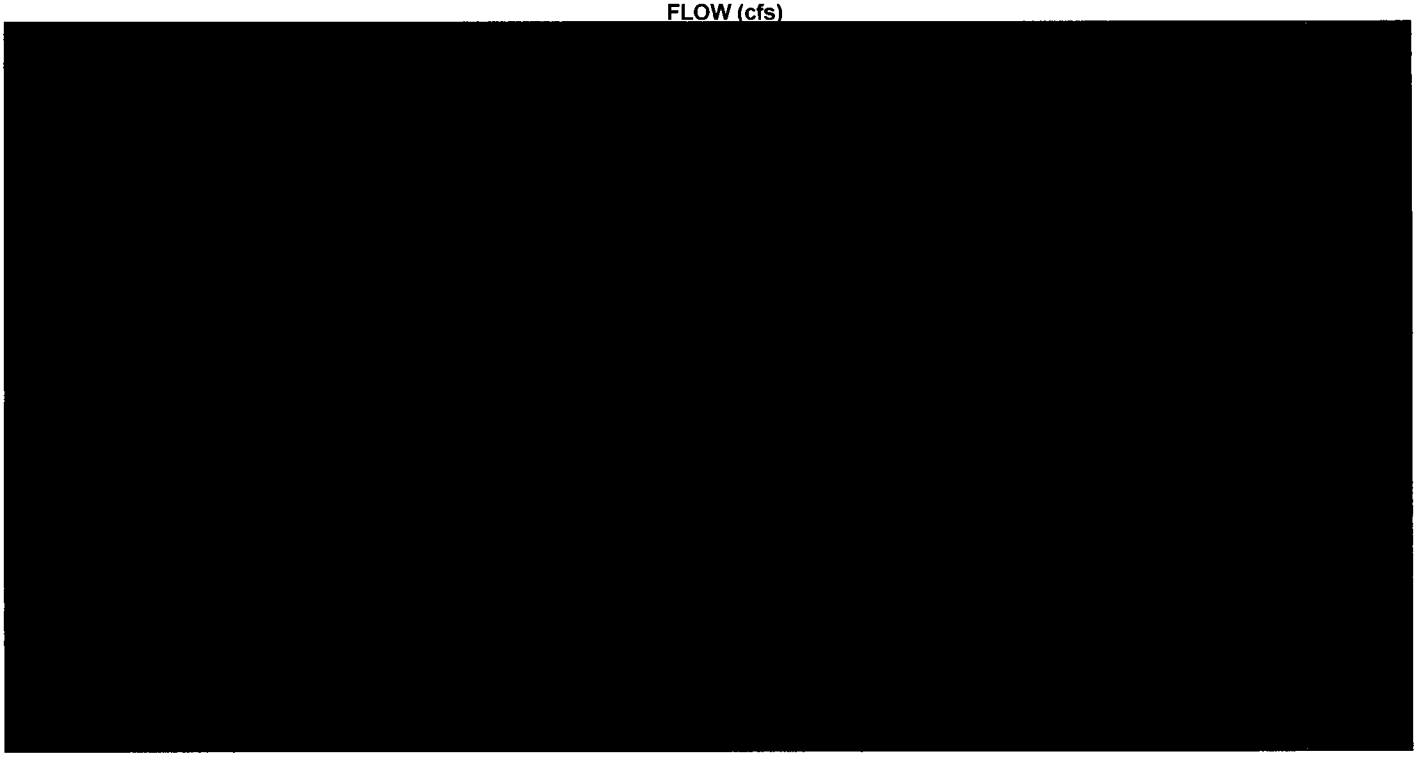

Table 2
FLOW (cfs)

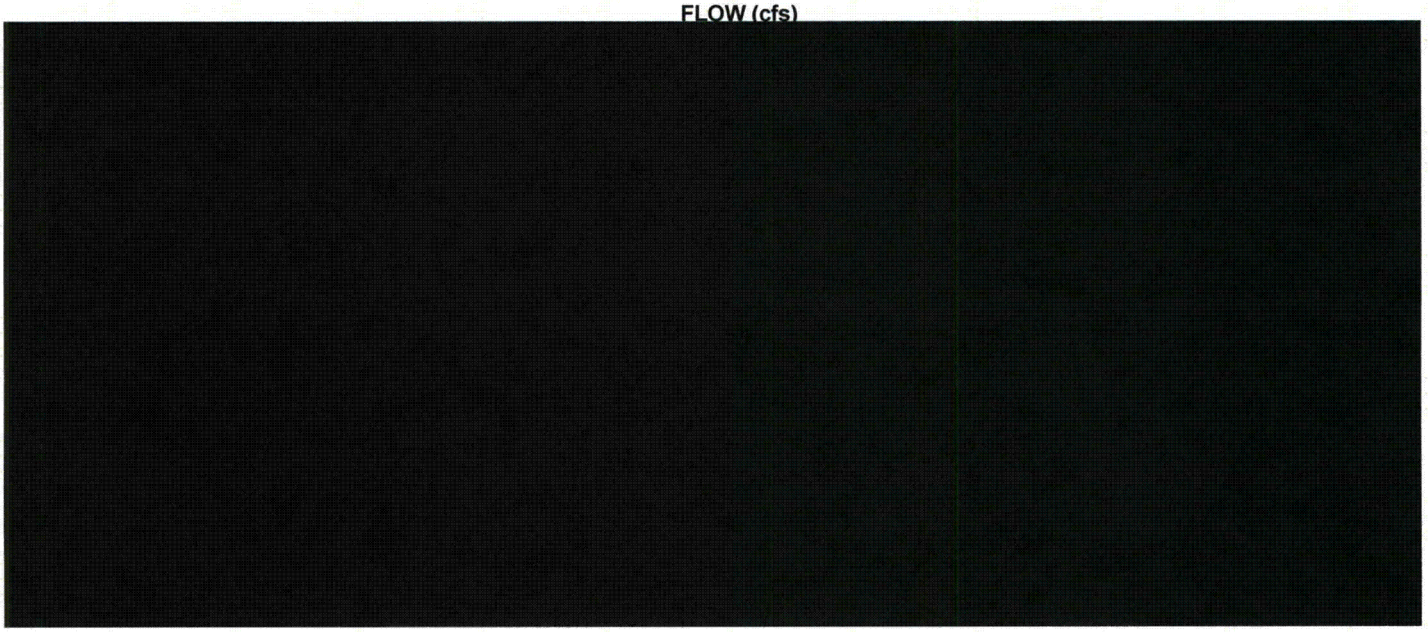

Figure 1

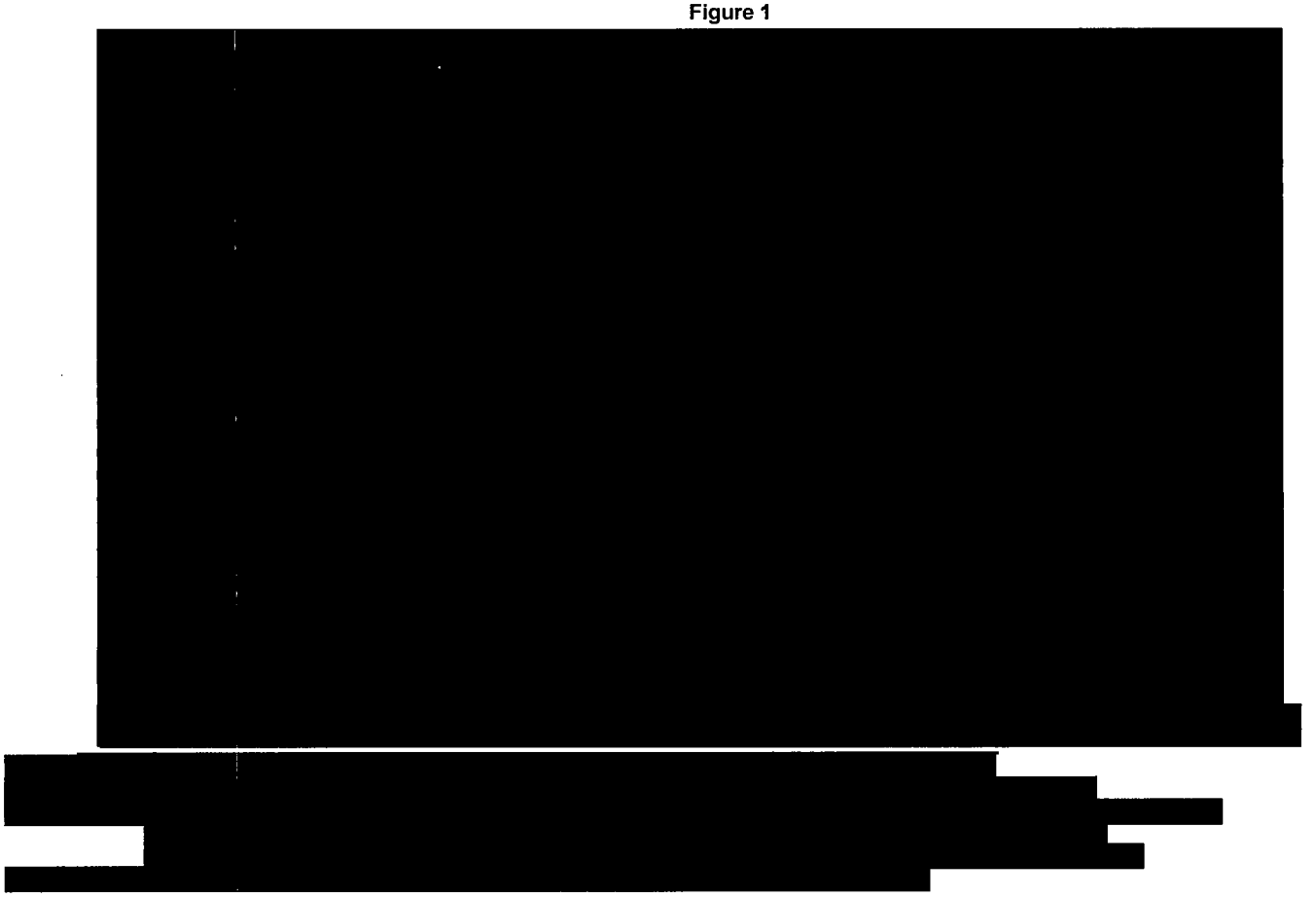

Figure 2

RAI ENV-21
Question EIS 2.4.1-9

The NRC staff, in its environmental impact statement as required by the National Environmental Policy Act (NEPA), needs to evaluate the ecological effects on wetlands and floodplains from the potential addition of up to 28 million gallons per day of supplemental water for consumptive use, which will be required by the Susquehanna River Basin Commission.

The ESRP 2.4.1 directs that the Staff identify and describe wetland and floodplain resources in the vicinity of the Bell Bend site that could be impacted by construction or operation of the plant. ESRP 5.3.3.2 directs that the Staff identify and evaluate the impacts to terrestrial ecosystems, including wetlands and floodplains, due to the operation of heat dissipation systems, the cooling towers, and cooling ponds.

To determine the ecological effects from the addition of this supplemental water on wetlands, floodplains, and associated habitats and wildlife species, the NRC staff requests information on the available options the applicant will use for flow supplementation, the approximate locations of the water withdrawal, routes of conveyance (e.g., streams, rivers that would carry the supplemental water), discharge points for each supplemental water option, and the approximate frequency of use and amount of supplementation water for each available option.

Provide a description of wetlands and floodplains associated with the water source, conveyance routes, and receiving waterbodies for the plant's supplemental water. It is acceptable to reference publicly available data from the U.S. Fish and Wildlife Service National Wetlands Inventory and Federal Emergency Management Agency National Flood Insurance Program flood maps. Describe in qualitative terms to what extent (e.g., areal extent and depth) and for how long wetlands and floodplains might be affected by supplemental water withdrawal (potential dewatering) and conveyance and discharge (potential flooding). Describe the possible associated potential impacts to wetland and floodplain vegetation and associated wildlife, based on the magnitude and duration of recurring dewatering or flooding events. Describe the process and estimate the time that may be required for such affected resources to return to pre-dewatering or pre- flooding conditions.

Acceptance Criteria:
ESRP Sections 2.4.1 and 5.3.3.2; 10 CFR 51.75

Response

Request 1: ..."the NRC staff requests information on the available options the applicant will use for flow supplementation, the approximate locations of the water withdrawal, routes of conveyance (e.g., streams, rivers that would carry the supplemental water), discharge points for each supplemental water option, and the approximate frequency of use and amount of supplementation water for each available option."

Please refer to Response 3 and Enclosure 1 of PPL Bell Bend, LLC's response to NRC RAI ENV-019, provided with letter BNP-2012-281, dated December 4, 2012[6], for the discussion of supplemental water use. The Susquehanna River Basin Commission (SRBC) will specify project requirements for meeting their consumptive use regulation and passby flow policy by the end of December 2012.

[6] BNP-2012-281, R. R. Sgarro (PPL Bell Bend, LLC) to U.S. NRC Document Control Desk, "Response to RAI ENV-19," dated December 4, 2012

Request 2: "Provide a description of wetlands and floodplains associated with the water source, conveyance routes, and receiving waterbodies for the plant's supplemental water."

[redacted]

Request 3: "Describe in qualitative terms to what extent (e.g., areal extent and depth) and for how long wetlands and floodplains might be affected by supplemental water withdrawal (potential dewatering) and conveyance and discharge (potential flooding)."

[redacted]

Request 4: "Describe the possible associated potential impacts to wetland and floodplain vegetation and associated wildlife, based on the magnitude and duration of recurring dewatering or flooding events."

Since dewatering or flooding is not expected to result from supplemental water withdrawal or release; impacts to wetlands, floodplain vegetation, and associated wildlife are expected to mimic naturally occurring cycles.

Request 5: "Describe the process and estimate the time that may be required for such affected resources to return to pre-dewatering or pre- flooding conditions."

[redacted]