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UN#09-391

Ms. Beth Bachur
Acting Chief, Maryland Section Southern, Regulatory Branch
U.S. Army Corps of Engineers – Baltimore District
10 S. Howard Street
Baltimore, MD 21201

Subject: Summary of Phase I Compensatory Mitigation Plan for Non-Tidal Wetland and Stream Impacts, Calvert Cliffs Nuclear Power Plant Unit 3, Calvert County, Maryland

Reference: Dimitri Lutchenkov (UniStar Nuclear Energy) to Amanda Sigillito (MDE) letter UN#09-139, "Phase I Compensatory Mitigation Plan for Calvert Cliffs 3 Nuclear Project, LLC and UniStar Nuclear Operating Services, LLC, Calvert Cliffs Nuclear Power Plant Site, Lusby, Calvert County, Maryland, USACE Tracking No. NAB-2007-08123-M05 MDE Project Number 08-WL-1462 (T), 08-NT-0191 (NT)", dated 2/18/09."

Enclosed please find the final version of the Summary of Phase I Compensatory Mitigation Plan for Non-Tidal Wetland and Stream Impacts requested to support the Joint Permit Application for Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3. The referenced letter served to transmit the Phase I Compensatory Mitigation Plan for non-tidal and stream impacts associated with CCNPP Unit 3, dated February 18, 2009, to the Maryland Department of the Environment. The locations/sites mentioned in the enclosed summary can be located in the Phase I Compensatory Mitigation Plan.

If you have any questions concerning the attached document, please call Mr. Dimitri Lutchenkov at (410) 470-5524.

Sincerely,

for Greg Gibson

Enclosures – 1) Summary of Phase I Compensatory Mitigation Plan for Non-Tidal Wetland and Stream Impacts Associated With Calvert Cliffs Unit 3

cc: Kathy Anderson – US Army Corps of Engineers (w/enclosures)
Marianne E. Dise, Critical Area Commission (w/o enclosures)
Susan Gray – Power Plant Research Program (w/enclosures)
Brent Hare - Maryland Energy Administration (w/o enclosures)
Laura Quinn – NRC Project Manager, Environmental Projects Branch 2 (w/enclosures)

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Enclosure 1

SUMMARY OF PHASE I COMPENSATORY MITIGATION PLAN FOR NON-TIDAL WETLAND AND STREAM IMPACTS ASSOCIATED WITH CALVERT CLIFFS UNIT 3

SUMMARY OF PHASE I COMPENSATORY MITIGATION PLAN FOR NON-TIDAL WETLAND AND STREAM IMPACTS ASSOCIATED WITH CALVERT CLIFFS UNIT 3

The proposed compensatory "in kind" mitigation for the scheduled impacts to wetlands and surface waters of the CCNPP Unit 3 project is intended to meet the mitigation requirements of the USACE Baltimore District, and includes the creation and enhancement of wetlands and streams to conditions more suitable for use by wildlife species native to the region. Appropriate and practicable steps to minimize adverse impacts were conducted through analysis of multiple site development plan concepts. The mitigation areas were chosen following a mitigation site selection process. Four general mitigation strategies were initially identified: 1) on-site and in-kind; 2) on-site and not in-kind; 3) off-site and in-kind; and 4) off-site and not in-kind. The mitigation strategy chosen for the CCNPP Unit 3 project provides for on-site and in-kind mitigation, as this strategy, or mitigation action, would replace nontidal wetland acreage and functional losses more effectively than the other three strategies. The project was designed to adhere to the Code of Maryland Regulations (COMAR), Subsection 26.23.04.03.

This work includes the enhancement of one man-made, abandoned sediment basin within the Lake Davies Disposal Area; the enhancement of portions of Johns Creek; the creation of forested and herbaceous wetland habitat within the largest man-made, abandoned, sediment basin on the Lake Davies disposal area; creation of forested wetland habitat within the Camp Conoy area; stream restoration; and stream enhancement. The wetland mitigation proposes to create an approximate 0.9 acre area of open water pond habitat; 1.3 acres of freshwater marsh; 7.2 acres of bottomland hardwood forest; eradication of invasive vegetation and enhancement of approximately 2.4 acres of bottomland hardwood forest; enhancement of wetlands abutting Johns Creek by eradication of invasive vegetation and enhancement of approximately 15.7 acres of bottomland hardwood forest; and creation of approximately 4.6 acres of forested wetland habitat. The stream mitigation proposes to restore stream functions along approximately 6,292 linear feet of stream portions by employing treatments such as in-stream habitat structures (cover logs, lateral/longitudinal diversity and root wads); bank stabilization (vegetative and bioengineering solutions); and riparian wetland enhancements (hydraulic and vegetative). The stream mitigation also proposes to enhance a total of approximately 4,146 linear feet of specific stream portions by improving aquatic habitat, constructing bank stabilization and planting native riparian vegetation. These projects will be monitored for a 5-year period and shall be protected in perpetuity through establishment of a legally binding protection mechanism.

WETLAND MITIGATION

Compensatory mitigation for unavoidable impacts to approximately 11.72 acres of jurisdictional, nontidal forested wetlands, emergent (herbaceous) wetlands, and surface waters (including Camp Conoy Fishing Pond) (USACE and/or MDE jurisdictional) and 8,350 linear feet of stream will be required to satisfy Clean Water Act Section 404 standards and obtain regulatory authorization for CCNPP Unit 3 construction. After field reconnaissance and site walk-through of the CCNPP property in 2007 and 2008, including the CCNPP Unit 3 project area, specific locations were identified as having ecological lift potential for wetland enhancement, or as being suitable for the creation of wetland communities from upland landscape.

Among the group of wetlands that will not be impacted by development of the CCNPP Unit 3 facility, specific sites were selected that would benefit from mitigation providing for an increase in wetland values and functions. The wetland mitigation actions include creation and enhancement within the Lake Davies Disposal Area (former sediment settling basins), the portion of Johns Creek to the south of the sediment basins, and an upland grassed field at the Camp Conoy area (wetland creation site). Phragmites (*Phragmites communis*) is found throughout the entire site, especially within the wetland sites proposed for mitigation. By eradicating Phragmites, the wetlands infested with this invasive nuisance species will have uplift for wildlife habitat and other important wetland functions. Increased diversification of native plant species is also provided by planting these mitigation sites with native bottomland hardwood tree species and/or shrubs. Finally, by removing the Phragmites from the degraded wetlands, a more normal hydrologic regime will be established.

The wetland mitigation component of the compensatory mitigation plan includes the following proposed activities:

- The creation of forested wetland habitat within the Camp Conoy area that lies within the Chesapeake Bay Critical Area (CBCA) (Mitigation Site WC-1);
- The creation of palustrine forested and emergent wetland habitat within the middle man-made, abandoned, sediment basin of the Lake Davies Disposal Area (Mitigation Site WC-2);
- The enhancement of a smaller man-made, abandoned, sediment basin within the Lake Davies Disposal Area (Mitigation Site WE-1);
- The enhancement of a portion of Johns Creek and a linear drainageway extension occurring to the south of the Lake Davies Disposal Area (Mitigation Site WE-2);
- The eradication of Phragmites through herbicide application and establishment of a native vegetation community (Mitigation Sites WC-2, WE-1, and WE-2);
- The use of soil material from impacted on-site wetland areas that do not contain phragmites as a supplemental growth medium within wetland creation sites (Mitigation Sites WC-1 and WC-2).

Following the on-site wetland creation and wetland enhancement activities for the CCNPP Unit 3 project, a five-year annual monitoring program will be implemented in accordance with the requirements of the *Mitigation and Monitoring Guidelines* (USACE) and the protocols in the *Maryland Compensatory Mitigation Guidance* (IMTF). Furthermore, the monitoring program will be conducted pursuant to the Maryland Department of the Environment, Water Management Administration (MDEWMA) mitigation monitoring guidelines and protocols.

Mitigation credit ratios for activities designed to replace impacted forested wetlands functions and values are 2:1 for creation and 3:1 for enhancement. The use of a 3:1 mitigation credit ratio for enhancement is based on controlling Phragmites coupled with the planting of native bottomland hardwood species. The credit ratio for the mitigation activity to replace impacted emergent wetlands functions and values is 1:1 for creation.

STREAM MITIGATION

The CCNPP Unit 3 site contains five proposed stream restoration reaches and five proposed stream enhancement reaches (perennial and intermittent) on site. The stream reaches proposed for mitigation activities are primarily contained within the Woodland Branch and Johns Creek watershed, and secondarily in the Camp Conoy area that lies within the CBCA.

The stream mitigation component of the compensatory mitigation plan includes the following proposed activities:

- The restoration of stream channel corridor within the on-site portion of upper and lower Woodland Branch;
- The enhancement of stream channel within the middle reach of Woodland Branch and two un-named tributaries;
- The restoration of the stream channel within an un-named tributary to and a portion of the mainstem of Johns Creek;
- The enhancement of the stream channel within an additional un-named tributary to Johns Creek; and
- The restoration and enhancement of the stream channel within un-named tributaries of the Camp Conoy area.

The proposed stream restoration and stream enhancement measures are intended to compensate for the unavoidable, direct loss of physical, biological and/or riparian function of impacted streams. Stream restoration will take advantage of opportunities to reconnect channels to their historic flow paths and restore active connection to wooded floodplains. Areas where degraded channels are abandoned will be designed to function as pockets of seasonal wetlands, ephemeral ponds, and oxbow lakes in the riparian zone. Stream enhancement activities, intended to improve existing stream physical and ecological functions within the channel's current flow path, include bank grading operations and floodplain creation at lower elevations, bank treatments, and native plantings.

The stream restoration and enhancement mitigation opportunities, combined with the proposed stormwater management plan, will offset losses to watershed functions by increasing the ability to provide floodwater storage, naturally recharge local aquifers, improve water quality, and maintain stream and riparian functions that support corresponding ecology.

The amount of stream mitigation proposed is based on a mitigation ratio of 1:1 for stream restoration and 2:1 for stream enhancement impacts.