

Greg Gibson  
Vice President, Regulatory Affairs

750 East Pratt Street, Suite 1600  
Baltimore, Maryland 21202



10 CFR 50.4  
10 CFR 52.79

January 27, 2011

UN#11-010

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Subject: UniStar Nuclear Energy, NRC Docket No. 52-016  
Calvert Cliffs Nuclear Power Plant, Unit 3  
Environmental Review Schedule

- References:
- 1) Nuclear Regulatory Commission (NRC) Letter from D. Matthews to G. Vanderheyden (UniStar Nuclear Energy), Status of Environmental Review for Calvert Cliffs Nuclear Power Plant, Unit 3, Combined License Application, dated January 20, 2011.
  - 2) NRC Letter from R. Schaaf (NRC) to G. Gibson (UniStar Nuclear Energy), Status of the Environmental Review for Calvert Cliffs Nuclear Power Plant, Unit 3, Combined License Application, dated November 24, 2010.

The purpose of this letter is to respond to the US Nuclear Regulatory Commission (NRC) letter to UniStar Nuclear Energy, LLC (UniStar), dated January 20, 2011 (Reference 1). While UniStar appreciates the work the NRC and U.S. Army Corps of Engineers (USACE) staffs have put forth in completing the Final Environmental Impact Statement (FEIS), UniStar notes that Reference 1 reported that UniStar had not provided needed data to the USACE as requested in Reference 2 (i.e., "...projected emissions specifically related to activities under Corps jurisdiction have not been provided").

UniStar respectfully clarifies the record that responses to the numerous USACE information requests have been provided in a timely manner, and follow-up discussions and clarifications were, in fact, submitted in writing and/or confirmed by e-mail to the USACE prior to Reference 1. To summarize the extensive and timely actions UniStar has taken to provide the USACE information needs, we have included an enclosure which summarizes the information submitted; including meetings held where NRC personnel were present, when the USACE staff stated they

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had received all necessary UniStar input information and were assessing it. The enclosure documents that four of the five USACE issues listed in Reference 2 are fully closed and UniStar was informed by the USACE that the air conformity issue has been fully responded to by UniStar and is under USACE review.

UniStar would also note that, as explicitly stated by a USACE member during a January 3, 2011 telephone call with the NRC and UniStar, the USACE had been working to a January 15 "target date" for submitting to NRC their FEIS inputs to support the February 18, 2011 scheduled FEIS publication date.

Based on the available information, UniStar concludes that the NRC moving the FEIS date to "TBD" (i.e., To Be Determined), and any subsequent actual delay in the publication of the FEIS beyond February 18, 2011, is not due to UniStar not having provided requested information to the USACE. UniStar understands that in significant Federal actions such as an FEIS, especially the first-of-a-kind implementation by the USACE Baltimore District of the NRC-USACE Memorandum of Understanding on FEIS, that intra-agency timing and communication-related delays such as this may occur.

We deeply appreciate that the NRC has been holding to the February 18, 2011 FEIS publication date; and to also expedite the publication process as stated in Reference 1. We commit to further update the NRC staff with USACE progress.

This response does not impact the Combined License Application content and does not contain any sensitive or proprietary information. This letter contains no new commitments.

If there are any questions regarding this transmittal, please contact me at (410) 470-4205, or Mr. Dimitri Lutchenkov at (410) 470-5524.

*I declare under penalty of perjury that the foregoing is true and correct.*

Executed on January 27, 2011

A handwritten signature in black ink, appearing to read 'Greg Gibson', with a long horizontal flourish extending to the right.

Greg Gibson

Enclosure: Summary of Calvert Unit 3 Items Listed as Open in NRC Letter dated November 24, 2010

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Page 3

cc: David Mathews, Director, Division of New Reactor Licensing, NRO  
Scott Flanders, Director, Division of Site and Environmental Reviews, NRO  
Joseph Colaccino, NRC Chief, U.S. EPR Projects Branch  
Surinder Arora, NRC Project Manager, U.S. EPR Projects Branch  
Laura Quinn, NRC Environmental Project Manager, U.S. EPR COL Application  
Getachew Tesfaye, NRC Project Manager, U.S. EPR DC Application (w/o enclosure)  
Charles Casto, Deputy Regional Administrator, NRC Region II (w/o enclosure)  
Silas Kennedy, U.S. NRC Resident Inspector, CCNPP, Units 1 and 2  
U.S. NRC Region I Office  
Susan Grey, State of Maryland DRP/PPRP

UN#11-010

**Enclosure**

**Summary of Calvert Unit 3 Items Listed as Open in NRC Letter dated November 24, 2010**

### **Submerged Cultural Resources**

This issue identified that the Maryland Historical Trust (MHT) had not yet responded to a consultation request regarding certain alterations in configuration at the water intake facility, outfall pipe, fish return system, and restoration of the barge dock.

The MHT responded to this issue by their letter dated November 29, 2010 (Attachment 1), five days after the NRC letter (Reference 1). MHT concluded that *"...no effects on cultural resources are expected as a result of proposed work associated with the Realigned CC3 Outfall Pipe and Sea Well, the CC3 Fish Return, or the CC3 Water Intake Facility..."* The NRC was copied on this letter.

The letter did identify two issues that required follow-up UniStar action, but it was not clear as to whether these actions were considered current open issues or were to be addressed prior to construction.

UniStar took proactive measures to discuss these issues with the US Army Corps of Engineers (USACE) and MHT. In an e-mail<sup>1</sup> dated January 7, 2011, the USACE identified in item 3 that the MOA between the parties (UniStar, MHT, and USACE) concerning cultural resources *"...provides certain stipulations for purposes of addressing these items raised by MHT..."* and *"Therefore, the statutory requirement has been met and the MOA governs the remainder of the process."* The NRC was copied on this e-mail.

At the request of UniStar, MHT followed up with an e-mail<sup>1</sup> dated January 12, 2011, concurring with the USACE conclusion and subsequently confirmed by MHT on January 19, 2011, at the state's Joint Evaluation Committee meeting at which NRC and USACE were present.

Therefore, UniStar believes this issue was successfully resolved with the USACE on January 7, 2011, and reconfirmed by e-mail on January 12, 2011, and in the meeting on January 19, 2011.

### **Air Conformity**

This issue identified that the USACE had requested air emission estimates from UniStar for developing the USACE's air conformity determination and that this information was needed for the USACE's National Environmental Policy Act (NEPA) review.

In an e-mail<sup>1</sup> dated January 3, 2011, UniStar provided the USACE the requested information. The e-mail<sup>1</sup> noted that the Calvert Cliffs Unit 3 Air Conformity Analysis report identified all construction-related emissions both "direct" and "indirect." As discussed with USACE staff on January 3, 2011, the specific emission amount (in tons) for USACE jurisdictional emissions would be the reported total emissions minus the reported emissions for NRC jurisdictional emissions.

On January 7, 2011, the USACE staff provided an e-mail (ML 110130257) which stated in part *"...we do not yet have closure on this item and we do not at present have a timeline for resolution."* Rather than reflect that the USACE required more time to evaluate information, Reference 1 stated in part, *"...the Corps has indicated to the NRC staff that it needs additional information beyond what UniStar provided on January 3, 2010, and that a request for more information is forthcoming."* (emphasis added)

<sup>1</sup>E-mail messages are generally considered protected communication and are therefore not included as an Attachment. Copies of e-mail messages are available for NRC inspection at the UniStar Nuclear Energy offices in Baltimore, Maryland.

To ensure complete communications and avoid any confusion over air conformity, in an e-mail<sup>1</sup> to the USACE dated January 18, 2011, UniStar listed the information in detail for USACE jurisdictional emissions. The information included the specific years related to USACE direct emissions and dredging-related emissions. The e-mail<sup>1</sup> stated in part:

“... all preconstruction activity emissions are considered to be the result of direct Corps action. Preconstruction emissions are the only direct emissions associated with Corps action. Emissions during the NRC-authorized construction period are indirect to the Corps action and are considered in the cumulative evaluation. VOC emissions during preconstruction and cumulatively for the project as a whole are below the de minimis thresholds. Annual NOX emissions during the two-years of preconstruction are **40.5** and **166.0 tons** per year with initial dredging (dredge boats, dump trucks, and associated equipment on land) comprising **13.5 tons** in the second year. Cumulative evaluation of total construction-related activities shows that NOX emissions for six of the nine years evaluated are above the de minimis threshold (UniStar 2010b). **Future maintenance dredging** within a 10 year period is estimated to require approximately ¼ of the original effort (**3.4 tons**) during any one year which corresponds to NOX emissions that will be below the de minimis threshold...” *(emphasis added)*

UniStar understands that each agency will make its' own determination and that both “direct” and “indirect” emissions need to be considered in those determinations. As such, the construction emissions identified in the Calvert Cliffs Air Conformity Analysis represent the total construction related emissions needed for either agency to complete their determinations.

On January 20, 2011, the NRC submitted Reference 1, stating that the USACE “...needs additional information beyond what UniStar provided on January 3, 2010.”

However, UniStar notes the information was provided to the USACE on January 3 and 18, 2011, and the current status appears to be that the USACE is continuing to evaluate the information provided and is working the intra-agency process.

### Tidal Mitigation

This issue identified that the USACE had not received UniStar's reply to comments and recommendations from the National Marine Fisheries Service (NMFS) concerning tidal mitigation.

UniStar met with NMFS, the USACE's resource agency, to identify the mitigation strategy for tidal impacts. Meeting minutes (Attachment 2) were reviewed and the conclusions concurred to by NMFS in an e-mail<sup>1</sup> dated December 22, 2010.

The USACE confirmed the concurrence with NMFS and in an e-mail<sup>1</sup> dated January 7, 2011 identified in item 1 that “...For purposes of the FEIS, we can now state what the tidal wetland component consists of and we will identify when we make our permit decision the specifics.” The NRC was copied on this e-mail. This was subsequently confirmed by NMFS on January 19, 2011, at the state's Joint Evaluation Committee meeting at which NRC and USACE were present.

<sup>1</sup>E-mail messages are generally considered protected communication and are therefore not included as an Attachment. Copies of e-mail messages are available for NRC inspection at the UniStar Nuclear Energy offices in Baltimore, Maryland.

Therefore, UniStar believes this issue was successfully resolved with the USACE on December 22, 2010, and reconfirmed by e-mail on January 7, 2011.

### **Nontidal Mitigation**

This issue identified that the timeframe for UniStar's submission of information needed for the summary document for the Phase II Mitigation Plan for Nontidal Wetlands and Streams had not been identified.

The USACE's initial request for summary of the Conceptual Phase II Non-Tidal Wetland and Stream Mitigation Plan was made by an e-mail<sup>1</sup> dated December 14, 2009, to support the December 2009 Draft Environmental Impact Statement (DEIS) writing session.

UniStar provided an initial draft of the summary by UniStar letter UN#09-524 dated December 17, 2009 (Attachment 3). However, it appears that this information was not incorporated into the DEIS.

Subsequently, at the request of the USACE, an updated summary was forwarded by UniStar letter UN#10-262 dated November 2, 2010 (Attachment 4) to support the December 2010 Final Environmental Impact Statement (FEIS) writing session. As of November 3, 2010, UniStar understood that the updated summary document was the only outstanding item identified to the NRC that USACE needed to support finalization of the FEIS.

After further USACE review and discussions with UniStar, UniStar was informed that the information provided in the summary document was complete but the USACE would like it presented in an alternative format more conducive to their needs.

In an e-mail<sup>1</sup> dated January 7, 2011, the USACE identified in item 2 that "*...the Corps has already agreed with the UniStar proposal concerning NTW mitigation. What remains to be completed is the summary table. Our goal is to have that wrapped up by 14 Jan.*"

Therefore, UniStar believes this issue was successfully resolved on November 2, 2010, and reconfirmed by e-mail on January 7, 2011.

### **Reply to Comments on DEIS from Ms. June Sevilla**

This issue identified that the USACE had not received UniStar's reply to comments dated July 9, 2010, from Ms. June Sevilla, Southern Maryland CARES.

UniStar had actually already responded to Ms. Sevilla's specific comments in UniStar letter UN#10-293 (Attachment 5) dated November 19, 2010. The NRC was copied on this letter.

In an e-mail<sup>1</sup> dated January 7, 2011, the USACE identified in item 4 that "*...the responses in the draft FEIS concerning those items raised by Ms Sevilla that are within the Corps regulatory purview have been addressed, therefore the Corps has no further comments for purposes of the FEIS. We will address Ms. Sevilla's comments in the Corps' ROD.*"

<sup>1</sup>E-mail messages are generally considered protected communication and are therefore not included as an Attachment. Copies of e-mail messages are available for NRC inspection at the UniStar Nuclear Energy offices in Baltimore, Maryland.

Therefore, UniStar believes this issue was successfully resolved on November 19, 2010, and reconfirmed by e-mail on January 7, 2011.

Reference:

1. NRC Letter from R. Schaaf (NRC) to G. Gibson (UniStar Nuclear Energy), Status of the Environmental Review for Calvert Cliffs Nuclear Power Plant, Unit 3, Combined License Application, dated November 24, 2010.
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**ATTACHMENT 1**

**Maryland Department of Planning Maryland Historical Trust Letter, from  
Troy J. Nowak (MHT) to Woody Francis, US Army Corps of Engineers, Request for  
Cultural Resources Consultation Calvert Cliffs Unit 3, Nuclear Power Plant Site,  
Lusby (Calvert County), Maryland, dated November 29, 2010**



**Maryland Department of Planning  
Maryland Historical Trust**

*Martin O'Malley*  
Governor  
*Anthony G. Brown*  
Lt. Governor

*Richard Eberhart Hall*  
Secretary  
*Matthew J. Power*  
Deputy Secretary

November 29, 2010

Woody Francis  
Regulatory Branch  
Baltimore District  
U.S. Army Corps of Engineers  
P.O. Box 1715  
Baltimore, MD 21203-1715

Re: Request for Cultural Resources Consultation Calvert Cliffs Unit 3, Nuclear Power Plant Site, Lusby (Calvert County), Maryland

Dear Mr. Francis:

In response to a request from UniStar Nuclear Energy, the Maryland Historical Trust (MHT) is reviewing modified and additional locations of certain structures and components related to the Calvert Cliffs Nuclear Power Plant Unit 3 (CC3) project to assess potential effects on historic properties in accordance with Section 106 of the National Historic Preservation Act and the Maryland Historical Trust Act, State Finance and Procurement Article §§ 5A-325 and 5A-326 of the Annotated Code of Maryland. We have reviewed the letter and enclosures submitted by Greg Gibson to the Maryland Historical Trust dated October 8, 2010. The above-mentioned structures and components include:

- Realigned CC3 Outfall Pipe and Sea Well
- CC3 Fish Return
- Restoration of Barge Unloading Facility (Maintenance and New Dredging)
- CC3 Water Intake Facility

Based on our review of the documents provided and *2009 Final Report, Submerged Cultural Resources Survey of a Proposed Outfall Pipe, Calvert Cliffs Nuclear Power Plant Unit 3 Construction, Calvert County, Maryland* prepared by Panamerican Consultants, Inc., no effects on cultural resources are expected as a result of proposed work associated with the Realigned CC3 Outfall Pipe and Sea Well, the CC3 Fish Return, or the CC3 Water Intake Facility provided that an unanticipated discoveries plan is implemented during all construction and dredging activities (see Stipulation V Unexpected Discovery of Historic Properties, *Memorandum of Agreement between the U.S. Army Corps of Engineers, the Maryland State Historic Preservation Officer and Calvert Cliffs 3 Nuclear Project, LLC, 2010*). However, new dredging related to the restoration of the Barge Unloading Facility will impact areas in the vicinity of unidentified high-amplitude magnetic anomalies (M03, M04, M05 and M06) recorded during the above-mentioned submerged cultural resources survey and a new area that has not been surveyed.

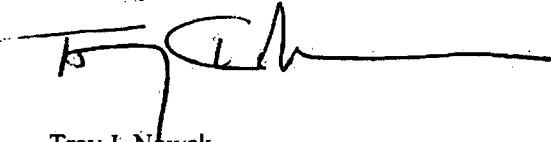
As a result, we recommend that a Phase I archeological survey (Identification) is conducted that both covers the area of the proposed Barge Unloading Facility that has not been surveyed and ascertains the sources of magnetic anomalies M03, M04, M05 and M06. These efforts should include electronic remote sensing and diving investigations and minimally result in the production of a technical report that follows the *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994). The consultant's team should include an underwater archeologist and the consultant

Woody Francis  
Request for Cultural Resources Consultation Calvert Cliffs Unit 3, Nuclear Power Plant Site, Lusby (Calvert County), Maryland  
November 29, 2010  
Page 2

should contact Dr. Susan Langley, Maryland State Underwater Archeologist, prior to the initiation of fieldwork to ensure that all work is performed in accordance with state standards and guidelines.

If you have questions or require further assistance, please contact me at [tnowak@mdp.state.md.us](mailto:tnowak@mdp.state.md.us) or (410) 514-7668, or Dr. Susan Langley at [slangley@mdp.state.md.us](mailto:slangley@mdp.state.md.us) or (410) 514-7662. Thank you for providing us this opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Nowak', with a long horizontal line extending to the right.

Troy J. Nowak  
Assistant State Underwater Archeologist  
Maryland Historical Trust

cc: Greg Gibson (UniStar)  
Dimitri Lutchenkov (Unistar)  
Susan Langley (State Underwater Archeologist, MHT)  
Yvonne F. Abernethy (Constellation Energy)  
Laura Quinn (NRC)  
Kristi Uunila (Calvert County)

**ATTACHMENT 2**

**Meeting Summary  
Tidal Wetland Mitigation; Calvert Cliffs Nuclear Power Plant Unit 3  
dated December 15, 2010**

## MEETING SUMMARY



**Meeting Date: December 15, 2010**

**Meeting Attendees:** John Nichols (NMFS), Dimitri Lutchenkov (UniStar), Jim Burkman (UniStar), Ed Miller (UniStar), Carla Logan (UniStar), Christine Papageorgis, Ph.D. (EA), Kaitlin McCormick (EA)

**Subject: Tidal Wetland Mitigation; Calvert Cliffs Nuclear Power Plant Unit 3**

### **Summary:**

Mr. Miller began the meeting by laying out the meeting objectives: 1) to discuss additional information regarding the tidal mitigation option recommended by Mr. Nichols at the November Joint Evaluation Committee (JE) meeting and 2) to discuss UniStar's proposed approach to provide tidal mitigation.

NMFS is seeking 4.5 acres (1:1 mitigation ratio) of sand/coarse substrate habitat in an oyster reef area to provide forage for fish. Initially, NMFS requested 9 acres (2:1 mitigation ratio) of mitigation via letter to the U.S. Army Corps of Engineers dated 20 August 2010, but the mitigation requested was been reduced to 4.5 acres after discussions at the September and November 2010 JE meetings. At the November JE meeting, Mr. Nichols recommended consideration of two areas identified by the Maryland Geological Survey (MGS) in their 2008 survey of NOB 19-2 as not having such substrate. MGS reported some evidence of anoxic conditions from grab samples in those areas and Mr. Nichols proposed placing material and bringing the area to a depth that would not have seasonal hypoxia.

Figure 1 (attached) shows the two areas (A and B) suggested by Mr. Nichols and a depth analysis completed by EA. Ms. McCormick explained that the depth in these areas is currently less than 25 feet, which is the depth at which MGS indicated areas would not be seasonally hypoxic or anoxic (MGS 2008). Ms. McCormick further explained that site bathymetry data (EA 2006) do not indicate any channels or depressions in areas A and B.

Figure 2 (attached) presents the MGS substrate data for areas outside A and B. MGS' data do not include mapped substrate type for areas A and B. A Maryland Department of Natural Resources (MDNR) dataset for areas A and B is shown on the figure. MDNR data indicate that area B currently has suitable substrates for benthic habitat and that at least a portion of area A also has suitable substrates. These two areas do not seem to be suitable for substrate enhancement projects. In addition to habitat conditions not warranting restoration, Mr. Miller

and Ms. Logan indicated that there were some operational concerns about placement of material near the intake channel and the potential for turbidity to affect operations of Units 1 and 2 at Calvert Cliffs.

As an alternative for potential restoration sites, Ms. McCormick then presented Figure 3 (attached), which shows MDNR substrate data for the remaining area of NOB 19-2. Ms. McCormick noted that there was a large area at the northern edge of the oyster bar that has degraded habitat (mud). Mr. Nichols indicated that the area is a potential restoration opportunity, but that he would want additional information on the site. Mr. Nichols indicated that UniStar should characterize the substrate of this area to determine if it would support the required material to create viable benthic habitat.

Mr. Miller pointed out to Mr. Nichols that coordination with Maryland Department of the Environment (MDE) had indicated that the dredged material from the project would not be suitable for placement. MDE's placement criteria for beneficial use of dredged material in an unconfined manner is that not more than 10 percent of the material can pass through a 100 point sieve. UniStar provided Mr. Nichols with a copy of the grain size results, which shows that 28 percent or more of the material, depending on the sample, would pass through a 100 point sieve. Mr. Nichols noted that he had also spoken to Jonathon Stewart at MDE and noted that this project is being held to Maryland's very high standard. From NMFS perspective, a material of 70 percent sand would be allowable for this use. Mr. Nichols would like to see the dredged material used, if possible, or suitable portions used and the rest disposed of in other areas. Mr. Miller noted that at this time the disposal site for the dredged material was on Calvert Cliffs Nuclear Power Plant property at Lake Davies.

Mr. Miller asked Mr. Nichols if he would be amenable to coarser material than sand being placed, such as gravel. Mr. Nichols noted that this would be better material than sand, if the substrate in the area would support it. Mr. Miller asked if it was possible to place less than 3 feet of material, because of the high cost of material from an upland source. Mr. Nichols stated that he would be willing to allow 1 foot of placement, if coarser material, such as gravel was used, and the underlying substrate was suitable (e.g., hard pan clay). Mr. Nichols would like to see:

- More specific identification of an area, based on site investigations
- Field investigations of the specific site, including:
  - Substrate characterization
  - Bathymetry
  - If areas are near or below -20 feet mean sea level (MSL), seasonal oxygen monitoring data

Mr. Nichols indicated that he did not want to see a net loss of hard bottom with suitable benthic substrate on oyster bars. He indicated that scoured hard pan clay would be an ideal substrate to improve. He wants to make sure that substrate enhancement occurs in an area that is suitable for the enhancement and that monitoring is critical. If there is not at least one foot of material left during the monitoring period, Mr. Nichols would want material to be augmented to allow a permanent substrate change.

Ms. McCormick explained that UniStar is also willing to look at other sites on oyster bars and had mapped MDNR substrate data over oyster bars in the region, shown on Figure 4 (attached). Ms. McCormick also confirmed that Mr. Nichols would be amenable to work on an area of NOB 19-2 that did not currently have substrate mapping, if sufficient data were collected to verify the suitability of the site. He also noted that if a project was done in shallower areas (<20 ft), then seasonal oxygen studies would not be needed.

Mr. Nichols noted that his understanding is that he and the Corps of Engineers are requesting 4.5 acres of benthic mitigation, rather than the 9.0 acres originally contemplated in the 20 August 2010 NMFS letter to satisfy the tidal mitigation requirements of the project. He would want monitoring a period of 5 years, and corrective actions as needed to ensure that the site met the tidal mitigation goals.

Mr. Miller noted that UniStar's goal is to meet the requirements, but that the identification of a specific area with supporting investigations could not be completed in time to meet the current timing requirements of the Final Environmental Impact Statement (FEIS) for the project and for the Corps permit decision. He inquired as to whether or not there was a way to come to an understanding of a conceptual tidal mitigation plan and process that would allow for development of a sound detailed plan and would meet the permitting and approvals schedule. Mr. Lutchenkov further noted that resolution of tidal mitigation was the critical path for finalizing the FEIS. Mr. Lutchenkov then asked whether or not it would be possible for the permit to be worded to allow 4.5 acres of substrate enhancement to be completed with the mitigation site to be finalized, based on NMFS approval, after studies were completed. Mr. Nichols noted that there have been several cases where the permit conditions have identified a process or a project to be completed with some flexibility based on project development process, funding processes, and other needs. Mr. Miller indicated that this is what UniStar was hoping for, because it is willing to commit to a concept plan, but the time to complete the studies does not support the current FEIS schedule. He also noted that it is not in NMFS or UniStar's interest to have an unsuccessful tidal mitigation project that would require substantial corrective management or development of a new project.

Mr. Nichols agreed that a description of the mitigation concept and outline of steps to finalize the design and implement the project would satisfy the current needs of the permitting process. UniStar agreed to develop a meeting summary for Mr. Nichols' review and comment or concurrence that could be forwarded onto the Corps and other project stakeholders summarizing the next steps. Further, both Mr. Burkman and Mr. Nichols will follow up with Mr. Woody Francis of the Corps to make him aware of the discussions.

UniStar and Mr. Nichols agreed upon the following process to identify a suitable mitigation site for placing coarse substrate on mud/silt bottom or scoured hardpan clays:

1. Determine the suitability of the dredged material from the project for use in the substrate enhancement project. It must be technically feasible and cost effective to use the on-site material or material from an upland source will be used.
2. Complete substrate and bottom mapping of the proposed mitigation site

- a. Complete a desktop study of available data to select one or more potential sites
  - b. Complete field investigations to confirm the substrate suitability to support sand/gravel/dredged material
  - c. Complete a bathymetric survey
3. Complete seasonal studies of dissolved oxygen to determine viability of habitat at the proposed mitigation site if a site with depths greater than 20 feet is proposed.
  4. Develop a project schedule to complete the surveys and studies for site identification and mitigation project implementation.

These tasks will be included in the concept plan.

Ms. McCormick asked how Mr. Nichols would want material placed. Mr. Nichols indicated that bottom dumping of the material from a scow was acceptable to him and that he did not think additional grading would be required, because the material would settle into place with the water currents.

Mr. Miller and Ms. Logan asked whether Mr. Nichols believes a silt curtain would be required during placement if coarse material, such as gravel, was placed. Mr. Nichols indicated that placement of coarse material would not necessarily require silt curtains and noted that silt curtains were not as successful in open water conditions as in more sheltered areas. However, since the action would occur on an oyster bar, silt curtains could be required especially if placement were within 500 yards of cultch. Mr. Nichols also noted that there may be time-of-year (TOY) restrictions for oysters. Mr. Nichols stated that both the winter and summer TOY periods would likely be implemented, but that a waiver could be requested from the state and Corps.

Mr. Burkman inquired as to whether or not this mitigation could potentially conflict with any submerged aquatic vegetation (SAV) habitat. Mr. Nichols indicated that the depths for oyster bars were greater than the 2 meter depths that would support SAV.

Mr. Lutchenkov requested confirmation that this approach and creation of 4.5 acres of benthic habitat (coarse substrate one foot deep) would meet NMFS requirement for tidal mitigation. Mr. Nichols indicated that this would satisfy the NMFS tidal mitigation requirement.



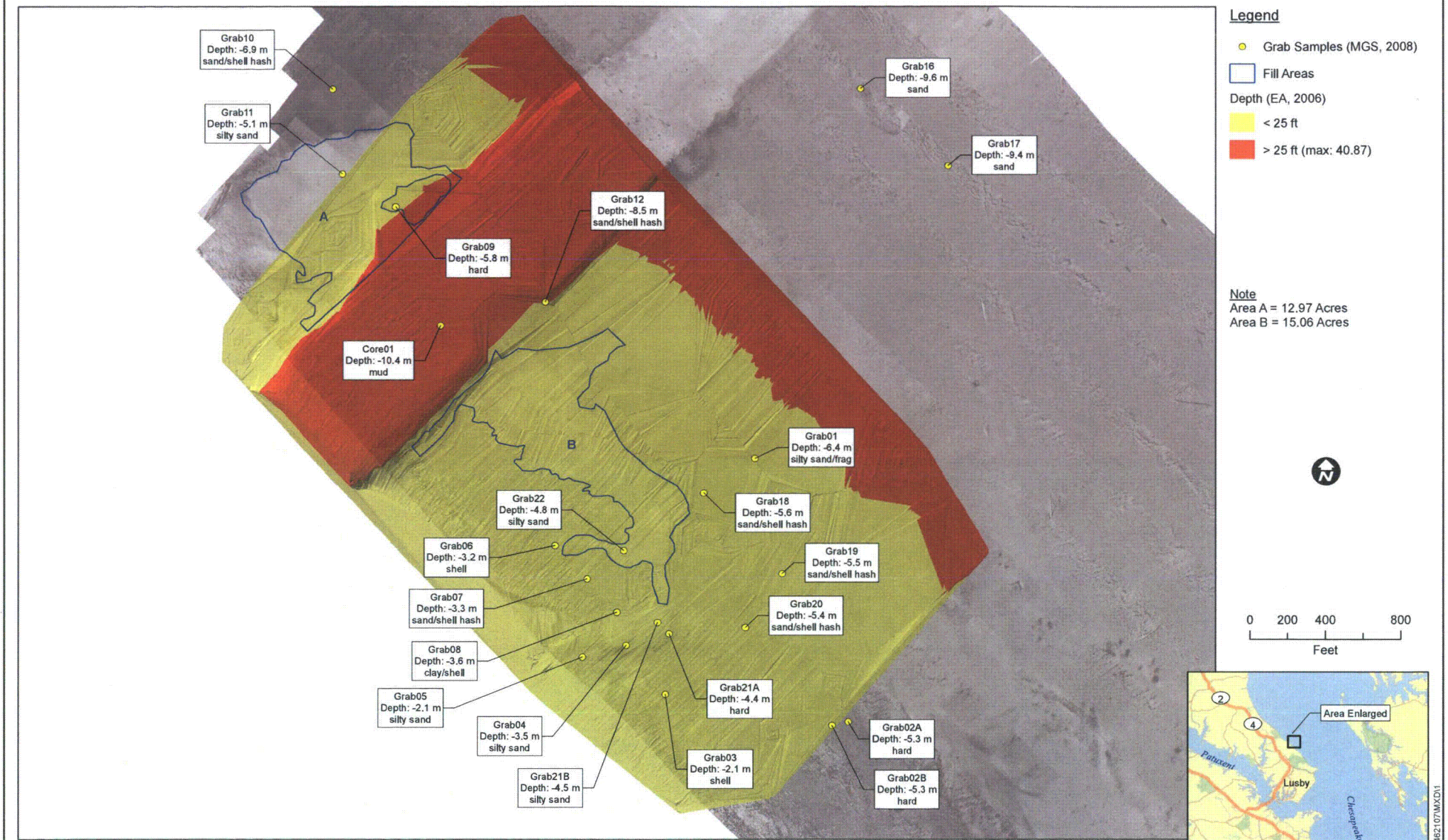


Figure 1  
Depth Analysis based on MGS 2008 Grab Samples and Side Scan Sonar and EA's 2006 Bathymetric Survey

Calvert Cliffs Nuclear Power Plant  
Sediment Characterization  
2010



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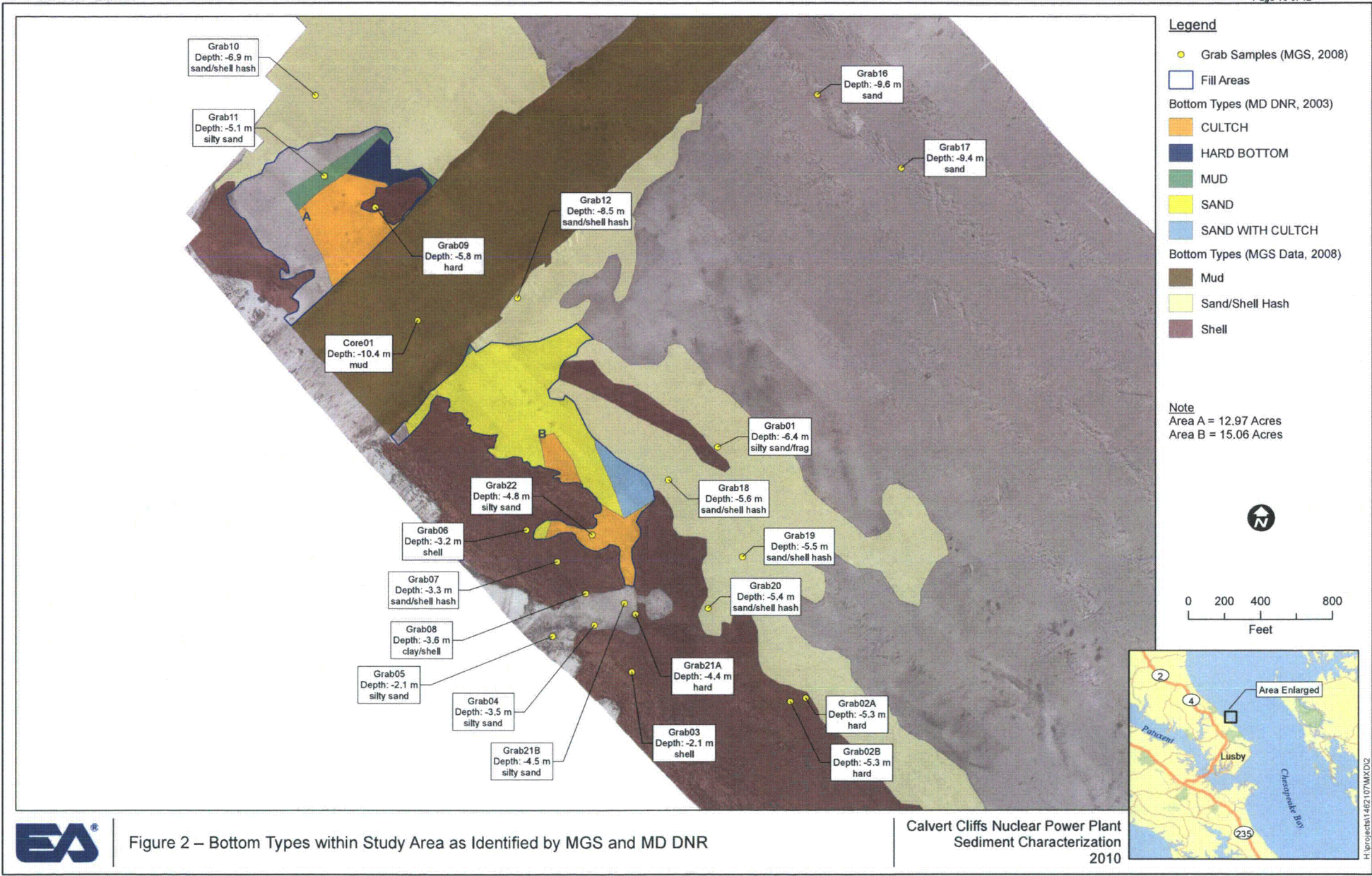


Figure 2 – Bottom Types within Study Area as Identified by MGS and MD DNR

Calvert Cliffs Nuclear Power Plant  
 Sediment Characterization  
 2010



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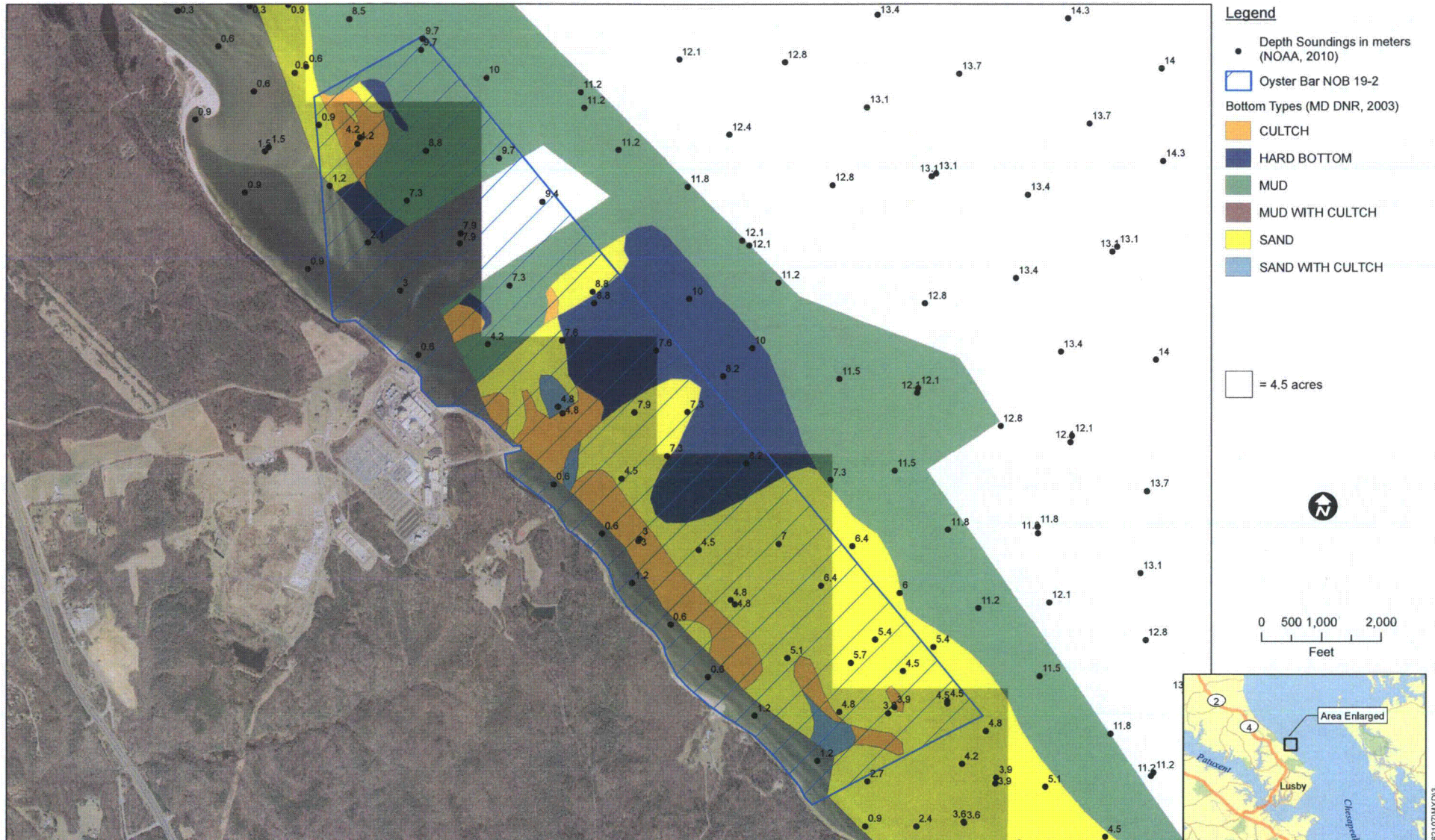
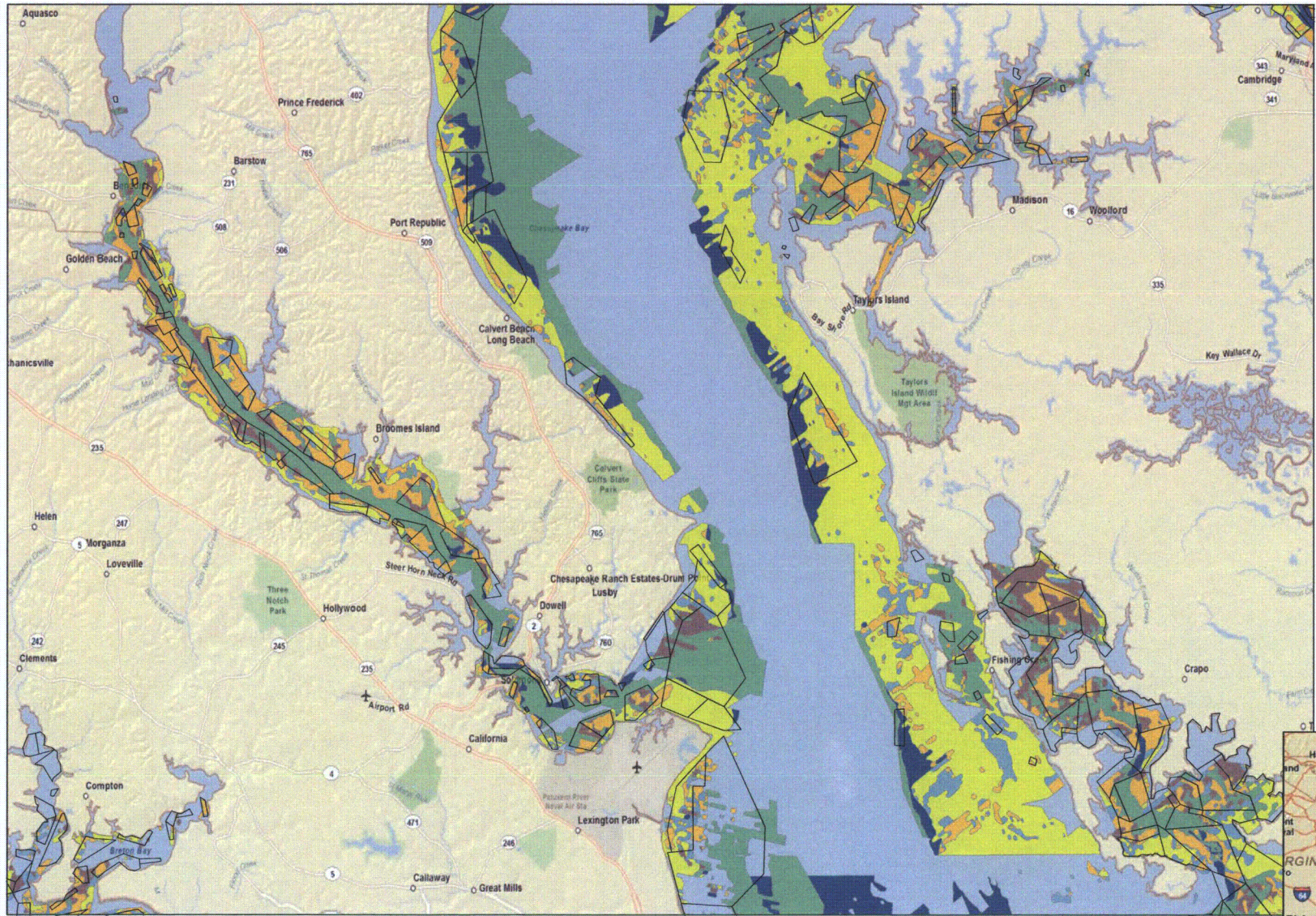


Figure 3 – Bottom Types within Oyster Bar NOB 19-2 as Identified by MD DNR

Calvert Cliffs Nuclear Power Plant  
Sediment Characterization  
2010

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- Legend**
- Oyster Bars (MD DNR, 2003)
  - Bottom Types (MD DNR, 2003)**
  - CULTCH
  - HARD BOTTOM
  - MUD
  - MUD WITH CULTCH
  - SAND
  - SAND WITH CULTCH

○ = 4.5 acres

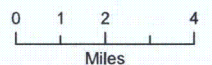


Figure 4 – Bottom Types within the Vicinity of the Patuxent River as Identified by MD DNR

Calvert Cliffs Nuclear Power Plant  
Sediment Characterization  
2010

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**ATTACHMENT 3**

**UniStar Nuclear Energy Letter UN#09-524, from Greg Gibson (UNE) to Kathy Anderson, US Army Corps of Engineers, Summary - Conceptual Phase II Non-Tidal Wetland and Stream Mitigation Plan for Calvert Cliffs Nuclear Power Plant, Unit 3 in Calvert County, Maryland, MDE Project Number 08-WL-1462 (T), 09-NT-0191 (NT), USACE Tracking No. NAB-2007 -08123-M05, dated December 17, 2009**

Greg Gibson  
Vice President, Regulatory Affairs

750 East Pratt Street, Suite 1600  
Baltimore, Maryland 21202



December 17, 2009

UN#09-524

Kathy Anderson, Section Chief  
Maryland Section Southern  
U.S. Army Corps of Engineers  
Baltimore District Operations Division Regulatory Branch  
10 S. Howard Street  
Baltimore, Maryland 21201

**Subject:** Summary - Conceptual Phase II Non-Tidal Wetland and Stream Mitigation Plan for Calvert Cliffs Nuclear Power Plant, Unit 3 in Calvert County, Maryland, MDE Project Number 08-WL-1462 (T), 09-NT-0191 (NT), USACE Tracking No. NAB-2007-08123-M05

Per your request, enclosed please find a summary of the Conceptual Phase II Non-Tidal Wetland and Stream Mitigation Plan dated December 2009, for the proposed Calvert Cliffs Nuclear Power Plant, Unit 3 in Calvert County, Maryland.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Greg Gibson". The signature is fluid and cursive, with a long horizontal line extending to the right.

Greg Gibson

Enclosure – Summary - Conceptual Phase II Non-Tidal Wetland and Stream Mitigation Plan for the Calvert Cliffs Nuclear Power Plant, Unit 3, Calvert County, Maryland, December 2009

UN#11-010 - Enclosure  
UN#09-524  
December 17, 2009  
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cc: Amanda Sigillito – MDE (w/enclosure)  
Laura Quinn – NRC Project Manager, Environmental Projects Branch 2 (w/enclosure)  
Susan Gray – Power Plant Research Program (w/enclosure)

GTG/KAB/mdf

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**Enclosure**

**Summary - Conceptual Phase II Non-Tidal Wetland and Stream Mitigation Plan  
for the  
Calvert Cliffs Nuclear Power Plant, Unit 3  
Calvert County, Maryland  
December 2009**

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**Summary – Conceptual Phase II Nontidal Wetland and Stream Mitigation Plan  
Calvert Cliffs Nuclear Power Plant, Unit 3  
December 2009**

The Conceptual Phase II Nontidal Wetland and Stream Mitigation Plan for the Calvert Cliffs Nuclear Power Plant, Unit 3 (CCNPP) has been prepared in accordance with the Final Compensatory Mitigation Rule issued by the USACE and the Environmental Protection Agency (EPA), published April 10, 2008. The Conceptual Phase II Mitigation Plan has been refined from the Phase I Mitigation Plan (MACTEC, 2009) which was approved by the USACE on July 30, 2009 and the Maryland Department of the Environment (MDE) on March 30, 2009.

The limit of disturbance for the construction of the CCNPP Unit 3 facility has been designed to avoid and minimize impacts to natural resources to the greatest extent practical while still meeting the project needs. However, the construction of the project would not be possible without permanently impacting Waters of the United States, including federally regulated wetlands and streams. Therefore, the mitigation strategy chosen for the CCNPP Unit 3 project is onsite, in-kind mitigation.

The previously submitted permit application for the project proposes no more than 8,350 linear feet of stream impacts and impacts to no more than 11.72 acres of jurisdictional wetlands and open water ponds. A comprehensive description of the impact sites has been provided in the previously submitted wetland delineation report dated May 2007 and the Joint Permit Application (JPA) submitted on May 16, 2008. The overall goal of the Conceptual Phase II Mitigation Plan is to replace functions and values lost due to proposed development.

#### Nontidal Wetland Mitigation

To meet a “no net loss” goal of nontidal wetland mitigation, the nontidal wetland impacts caused by the construction of the proposed project must be mitigated by creating, restoring, or enhancing an equal area of nontidal wetlands. The Conceptual Phase II Mitigation Plan for the Calvert Cliffs Unit 3 project includes the creation of new wetland areas onsite as well as enhancing existing wetlands. The wetland creation areas will include creation of both forested and emergent wetlands. A portion of open water creation is also proposed in order to replace functions and values lost from the impacted areas, as well as create a wetland mosaic within the mitigation area.

The following is a list of the proposed wetland creation and wetland enhancement areas proposed to meet the mitigation requirements.

- WC-1 – Creation of an approximate 2.20-acre forested head water wetland system at the head of Woodland Branch, near the open field north of the old visitor’s center.
  - WC-2 – The creation of approximately 1.61 acres of emergent wetland and approximately 7.22 acres of forested wetland within the middle man-made sediment basin of the Lake Davies
-

*Summary - Conceptual Phase II Nontidal Wetland & Stream Mitigation Plan  
Calvert Cliffs Nuclear Power Plant, Unit 3  
December 2009*

Dredged Material Disposal Area. In addition, this design will include the creation of approximately 0.90 acres of open water habitat.

- WE-1 – The enhancement of approximately 2.53 acres of existing wetland located within a smaller man-made, abandoned, sediment basin within the Lake Davies Area.
- WC-3 – The creation of two small forested wetland areas (0.5 acres) adjacent to WE-1.
- WE-2 – The enhancement of approximately 15.89 acres of existing wetlands located along portions of Johns Creek and a linear drainage way extension occurring to the south of the Lake Davies Area.
- WE-3 and WC-4 – The creation of approximately 1.33 acres of forested wetland and the enhancement of approximately 1.08 acres of forested wetlands in the location of the old open water ponds situated below Camp Conoy Pond.
- WE-4, WC-5, and WC-6 – The creation of approximately 1.12 acres and enhancement of approximately 0.09 acres of forested wetlands along Johns Creek, in the area of two proposed stormwater management (SWM) outfalls.

The following mitigation credit ratios are proposed for the Conceptual Phase II Mitigation Plan:

- Forested Wetland Creation = 2:1 credit ratio
- Wetland Enhancement = 4:1 credit ratio
- Emergent Wetland Creation = 1:1 credit ratio

Wetland enhancement will consist of the removal and control of common reed (*Phragmites australis*, commonly referred to as Phragmites), along with planting of native bottomland hardwood species within existing wetlands. Based on comments received by MDE on December 2, 2009, it has been determined that this technique will yield mitigation credits at a 4:1 ratio. Please note that this determination of the 4:1 credit ratio was established after the submittal of the Conceptual Phase II Mitigation Plan to the agencies for review, and this change from the 3:1 credit ratio proposed in the Phase I Mitigation Plan will be addressed in the next level of the design plans. This revision to the mitigation credit ratio will not alter the proposed mitigation design.

**Wetland Mitigation Credit Summary**

Mitigation Type	Mitigation Amount (acres)	Mitigation Ratio	Mitigation Credit (acres)
Forested Creation	12.37	2:1	6.19
Emergent Creation	1.61	1:1	1.61
Forested Enhancement	19.59	4:1	4.90
<b>Total Credit Amount = 12.70 acres</b>			

*Summary - Conceptual Phase II Nontidal Wetland & Stream Mitigation Plan  
Calvert Cliffs Nuclear Power Plant, Unit 3  
December 2009*

The proposed wetland creation and enhancement areas will be planted with native hydrophytic vegetation after excavation for the establishment of bottom elevations. The plant material selected to be installed will predominantly be representative of the species composition of the wetlands within the CCNPP property and native to the region. In addition, the plant material will include species that have been identified as suitable for installation on wetland mitigation projects by the Chesapeake Bay Critical Area Commission.

Dense stands of Phragmites have been observed in the sediment basins of the Lake Davies Dredged Material Disposal Area, Johns Creek, and other forested wetland areas on the CCNPP Unit 3 site. The control of Phragmites through herbicide application, mowing practices, and flooding of the sediment basins is proposed under the compensatory mitigation plan for the wetland creation and enhancement areas presently containing the invasive species. Reducing Phragmites populations will replace the existing impacted plant community with a more diverse community through the planting and natural regeneration of more desirable native plant species.

#### Stream Mitigation

Stream mitigation credits will be achieved through restoration, enhancement, and preservation techniques with the goal of protecting and improving aquatic resource functions and returning natural/historic functions to degraded aquatic resources. The Conceptual Phase II Mitigation Plan includes 9,688 linear feet of stream restoration and 2,538 linear feet of stream preservation in order to obtain the required stream mitigation credits. Furthermore, the Conceptual Phase II Mitigation plan is also designed to reduce secondary impacts from the proposed development and promote habitat and the establishment of American eel populations on-site.

**Stream Mitigation Credit Summary**

<b>Mitigation Type</b>	<b>Mitigation Amount (linear feet)</b>	<b>Mitigation Ratio</b>	<b>Mitigation Credit (linear feet)</b>
Stream Restoration	9,688	1:1	9,688
Stream Preservation	2,538	1:1	2,538
<b>Total Credit Amount = 12,226 linear feet</b>			

Stream mitigation work is designed to meet the goals and objectives of this Conceptual Phase II Mitigation Plan in accordance with the guidance of regulating entities. In-channel work will be performed in intermittent channels during periods of little or no base flow, and work will be performed in accordance with an approved Erosion and Sediment Control Plan. The Conceptual Phase II Mitigation Plan proposes to utilize restoration and preservation techniques to meet the mitigation objectives and goals. Restoration practices throughout the project include Priority 1 restoration by introducing flow into abandoned floodplain channels, planting of riparian wetland species throughout the stream reaches, and the placement of log and root structures in an effort to raise groundwater elevations in some reaches and

reduce the entrenchment of existing reaches of stream. A similar technique to Regenerative Stormwater Conveyance (RSC) will be utilized in some stream restoration reaches. RSC is an infiltration practice that uses a series of open channel, sand seepage step pools, and riffle weirs, through which stormwater flows are conveyed. The purpose of these systems is to reduce the commonly seen erosion in ordinary stormwater conveyances and convert stormwater to groundwater, mitigating nutrient pollution and thermal impacts to the receiving waters. This approach is similar to a Priority 1 stream restoration, which replaces an incised channel with a re-dimensioned channel at a higher elevation. Priority 1 restoration techniques are employed in this restoration plan, usually in re-establishing flow in an abandoned floodplain channel which meets the pattern and dimension criteria appropriate for the reach.

The Conceptual Phase II Mitigation Plan includes the creation and enhancement of nontidal wetlands, as well as the restoration, enhancement, and preservation of nontidal stream channels. The compensatory mitigation is proposed to be onsite and shall be protected in perpetuity through the use of a Conservation Easement or a Declaration of Restrictions.

After the onsite wetland creation and enhancement activities are complete, a 5-year annual monitoring program will be implemented in accordance with the *Maryland Compensatory Mitigation Guidance* (IMTF, 1994), and the guidance provided in RGL No. 08-03 (USACE, October 2008). Performance standards for the wetland mitigation monitoring program will be conducted in accordance with the MDE guidelines and with consideration of other permitting agencies as mandated by the State of Maryland.

Monitoring of the stream channels proposed within the mitigation plan will be performed in an effort to compare post-construction conditions to pre-construction baseline data, for the purpose of assessing the success of the mitigation in relation to the mitigation goals, and determine the degree of success the mitigation project has achieved in meeting the objectives of providing proper channel function and increased habitat quality. Monitoring data based on success criteria established in the Monitoring and Performance Plan will be gathered annually to document the success of the proposed mitigation. Monitoring reports will be submitted in accordance with the wetland mitigation monitoring requirements.

The Conceptual Phase II Mitigation Plan anticipates 12.70 acres of wetland credits and 12,226 linear feet of stream credits, creating a surplus of 0.98 acres of wetland credits and 3,876 linear feet of stream credits. UniStar Nuclear Energy has elected to include the additional mitigation areas into this Conceptual Phase II Mitigation Plan in an effort to create a reserve of mitigation credits for potential future use for impacts that may arise for future projects on-site.

**ATTACHEMENT 4**

**UniStar Nuclear Energy Letter UN#10-262, from Greg Gibson (UNE) to Amanda Sigillito,  
Maryland Department of the Environment, Draft Final Phase II Nontidal Wetland and  
Stream Mitigation Plan for Calvert Cliffs Nuclear Power Plant, Unit 3 in Calvert County,  
Maryland, MDE Project Number 08-WL-1462 (T), 09-NT-0191 (NT), USACE Tracking No.  
NAB-2007-08123-M05, dated November 2, 2010  
(Enclosure 1 not included)**

**Greg Gibson**  
Vice President, Regulatory Affairs

750 East Pratt Street, Suite 1600  
Baltimore, Maryland 21202



November 2, 2010

UN#10-262

Amanda Sigillito, Chief  
Non-Tidal Wetlands and Waterways Division  
Maryland Department of the Environment  
Water Management Administration  
1800 Washington Boulevard  
Baltimore, Maryland 21230

Woody Francis, Project Manager  
U.S. Army Corps of Engineers – Baltimore District  
10 S. Howard Street  
Baltimore, Maryland 21201

**Subject:** Draft Final Phase II Nontidal Wetland and Stream Mitigation Plan for Calvert Cliffs Nuclear Power Plant, Unit 3 in Calvert County, Maryland, MDE Project Number 08-WL-1462 (T), 09-NT-0191 (NT), USACE Tracking No. NAB-2007-08123-M05

- References:**
- 1) UN#10-037, Phase II Non-Tidal Wetlands and Stream Concept Plan and Tidal Wetlands Impacts for Calvert Cliffs Nuclear Power Plant, Unit 3, in Calvert County, Maryland, MDE Project Number 08-WL-1462 (T), 09-NT-0191 (NT), USACE Tracking No. NAB-2007-08123-M05, Dated March 18, 2010
  - 2) UN#09-524, Summary - Conceptual Phase II Non-Tidal Wetland and Stream Mitigation Plan for Calvert Cliffs Nuclear Power Plant, Unit 3 in Calvert County, Maryland, MDE Project Number 08-WL-1462 (T), 09-NT-0191 (NT), USACE Tracking No. NAB-2007-08123-M05, dated December 17, 2009.

Enclosed for review and approval please find the Draft Final Phase II Nontidal Wetland and Stream Mitigation Plan dated October 2010, for the proposed Calvert Cliffs Nuclear Power Plant, Unit 3 in Calvert County, Maryland (Enclosure 1). The Draft Final Phase II Nontidal Wetland and Stream Mitigation Plan ("Draft Final Plan") incorporates the philosophy of the Phase II Non-Tidal Wetlands and Stream Concept Plan ("Conceptual Plan") forwarded by Reference 1 and provides the details for implementing/constructing the Conceptual Plan. As such, the Draft Final Plan makes up the complete Phase II Nontidal Wetland and Stream Mitigation Plan by presenting the objective/scope/goal of the plan and the implementation (construction detail) aspect of the plan. The enclosed Draft Final Plan incorporates comments received from the Maryland Department of the Environment (MDE).

UN#10-262

Page 2

Enclosure 2 provides an update to the summary of the Phase II Non-Tidal Wetland and Stream Mitigation Plan originally forwarded by Reference 2. UniStar understands that this summary document was the only outstanding item identified to the NRC that USACE needed to support the Final Environmental Impact Statement writing session scheduled for mid-November.

If you have any questions concerning the attached document, please call Mr. Jim Burkman at (410) 787-5130.

Sincerely,



Greg Gibson

- Enclosures –
- 1) Calvert Cliffs Nuclear Power Plant, Unit 3 Draft Final Phase II Nontidal Wetland and Stream Mitigation Plan, October 2010
  - 2) Calvert Cliffs Nuclear Power Plant, Unit 3 Summary – Draft Final Phase II Nontidal Wetland and Stream Mitigation Plan, October 2010

cc: Laura Quinn – NRC Project Manager, Environmental Projects Branch 2 (w/enclosure)  
Susan Gray – Power Plant Research Program (w/enclosure)  
Cheryl Kerr – MDE (w/enclosure)  
Kelly Neff – MDE (w/enclosure)

**Enclosure 1**

**Calvert Cliffs Nuclear Power Plant, Unit 3  
Draft Final Phase II Nontidal Wetland and Stream Mitigation Plan  
October 2010**



**Enclosure 2**

**Calvert Cliffs Nuclear Power Plant, Unit 3  
Summary – Draft Final Phase II Nontidal Wetland and Stream Mitigation Plan  
October 2010**



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**Summary – Draft Final Phase II Nontidal Wetland and Stream Mitigation Plan  
Calvert Cliffs Nuclear Power Plant, Unit 3  
October 2010**

The Draft Final Phase II Nontidal Wetland and Stream Mitigation Plan (henceforth referred to as the “Phase II Mitigation Plan”) for the Calvert Cliffs Nuclear Power Plant (CCNPP), Unit 3 has been prepared in accordance with the Final Compensatory Mitigation Rule issued by the United States Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA), published 10 April 2008. This updated Phase II Mitigation Plan has been refined, in regard to expanding to provide more detail, from the Conceptual Phase II Mitigation Plan submitted to USACE and the Maryland Department of the Environment (MDE) in December 2009. The site vicinity is depicted in Figure 1.

The Phase II Mitigation Plan has been prepared in accordance with the Maryland Compensatory Mitigation Guidance (Interagency Mitigation Task Force [IMTF], 1994) and USACE Regulatory Guidance Letter (RGL) No. 08-03, dated 10 October 2008. The Plan addresses the 12 critical elements required by the Final Compensatory Mitigation Rule. The overall goal of the Phase II Mitigation Plan is to replace functions and values lost resulting from the proposed development, as well as to protect existing stream and wetland resources from potential impacts associated with changing land use from the Unit 3 expansion.

#### Nontidal Wetland Mitigation

The project proposes no more than 8,350 linear feet of stream impacts and no more than 11.72 acres of jurisdictional wetland and open water pond impacts. A comprehensive description of the impact sites has been provided in the wetland delineation report dated May 2007, Joint Permit Application (JPA) submitted on 16 May 2008, and subsequent revisions and addendums.

The limit of disturbance for the construction of the CCNPP Unit 3 facility has been designed to avoid and minimize impacts to natural resources to the greatest extent possible while still meeting the project needs. However, the construction of the project would not be possible without permanently impacting federally regulated wetlands and streams. To meet a “no net loss” goal for nontidal wetland mitigation, the mitigation strategy chosen for the CCNPP Unit 3 project proposes onsite, in-kind mitigation. This is accomplished through the creation or enhancement of several sites, depicted on Figure 2.

The proposed wetland creation and enhancement areas will be planted with native hydrophytic vegetation after excavation to final grades. The proposed species composition will be largely representative of the wetlands within the CCNPP property and native to the region. In addition, the plant material will include species that have been identified as suitable for installation on wetland mitigation projects by the Chesapeake Bay Critical Area Commission.

Dense stands of Phragmites have been observed in the sediment basins of the Lake Davies Dredged Material Disposal Area, Johns Creek, and other forested wetland areas on the CCNPP Unit 3 site. The control of Phragmites through herbicide application, mowing practices, and flooding of the sediment basins is proposed for the wetland creation and enhancement areas presently containing the invasive species. The following mitigation credit ratios and proposed total credits are proposed for the Phase II Mitigation Plan:

#### Wetland Mitigation Credit Summary

Mitigation Type	Mitigation Amount (acres)	Mitigation Ratio	Mitigation Credit (acres)
Forested Creation	12.26	1:2	6.13
Emergent Creation	1.61	1:1	1.61
Wetland Enhancement	19.62	1:4	4.91
<b>Total Impact Amount = 11.72 acres</b>		<b>Total Credit Amount = 12.65 acres</b>	

#### Stream Mitigation

Stream mitigation credits will be achieved through various restoration and preservation techniques with the goal of protecting and improving aquatic resource functions and returning natural/historic functions to degraded aquatic resources. The Phase II Mitigation Plan includes 10,236 linear feet of stream restoration and 930 linear feet of stream preservation in order to obtain the required stream mitigation credits. This is measured based on valley distance and not sinuous length of channel. The Phase II Mitigation Plan is designed to reduce the potential of secondary impacts from proposed development and promote habitat and establishment of an American eel (*Anguilla rostrata*) population onsite. Stream impacts/credits are detailed below:

### Stream Mitigation Credit Summary

Mitigation Type	Mitigation Amount (linear feet)	Mitigation Ratio	Mitigation Credit (linear feet)
Stream Restoration	10,236	1:1	10,236
Stream Preservation	930	1:2	465
<b>Total Impact Length = 8,350 linear feet</b>		<b>Total Credit Amount = 10,701 linear feet</b>	

Stream mitigation work is designed to meet the goals and objectives of this Phase II Mitigation Plan in accordance with the guidance provided by the regulatory and resource agencies. Several sites are proposed and depicted on Figure 2. In-channel work will be performed in accordance with an approved Erosion and Sediment Control Plan and performed by a qualified contractor, experienced in the field of stream and wetland restoration. Work will be performed with sufficient construction oversight to ensure the specifications of the design are met, disturbance is minimized, and any in-field changes which may occur are conducted and documented appropriately. The supervisory aspects of the design will include an onsite engineer working in coordination with a biologist/ecologist, providing oversight of the contractor on a day-to-day basis to ensure the design approaches are field-fit according to changing existing conditions while limiting disturbance to existing vegetation and natural resources.

The restoration design on the project site utilizes a combination of natural channel design (NCD) and regenerative stormwater conveyance (RSC) principles. NCD techniques, as pioneered by Dr. David Rosgen, are utilized to ensure that the riffle grade control techniques of RSC, thalweg grading, and low flow water surface facet creation are coordinated with stable reference systems onsite. Additionally, the reference criteria provide a basis for judging the success of the proposed dynamic sand-bedded systems.

RSC is a groundwater recharge, storage, floodplain reconnection, and infiltration practice that use a series of open channel, sand seepage step pools and riffle grade controls, through which stormwater flows are conveyed. The silty sand soils on this site are particularly suited to allow lateral infiltration from RSC storage and maximize floodplain contact, storage, and runoff quantity and quality attenuation. The purpose of these systems is to reduce the commonly seen erosion in ordinary stormwater conveyances and convert stormwater to shallow groundwater, mitigating nutrient pollution and thermal impacts to the receiving waters. The riffle grade controls within RSC systems are sized to resist transport of their underlying material in the 100-

year storm, accreting sediment over top of them at lower discharges, and flushing at higher discharges without transporting the underlying grade control material.

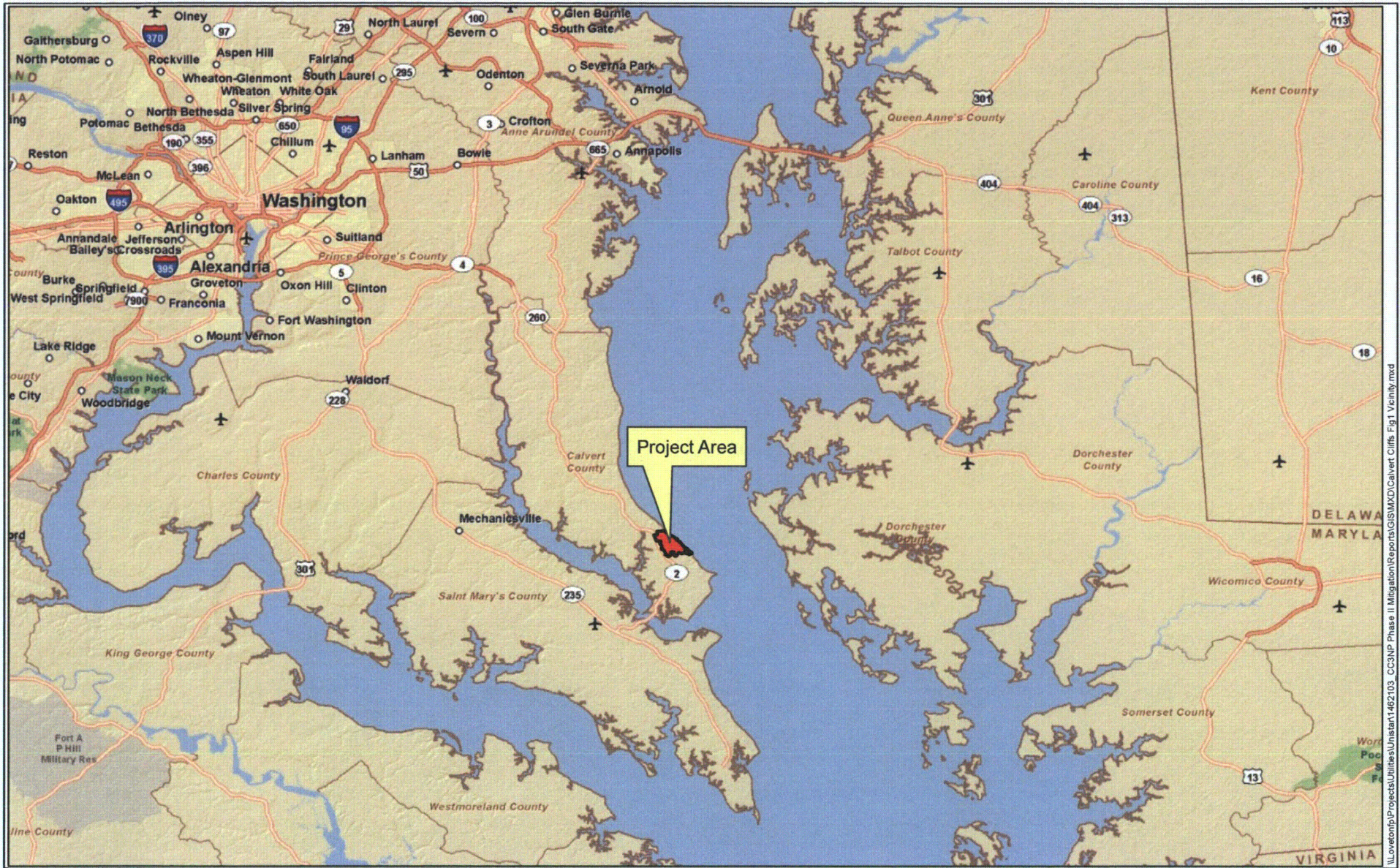
To ensure that the stream-wetland system is successful and diverse into the future, with fresh sources of woody debris, the mitigation design does not propose the removal or management of beaver, nor is a timber management plan proposed. In this way, it is intended that the stream system receives a diverse mix of large and small woody debris and leaf litter without the channel destabilizing and becoming entrenched.

#### Site Maintenance and Protection

The Phase II Mitigation Plan includes the creation and enhancement of nontidal wetlands, as well as the restoration and enhancement/preservation of nontidal stream channels. The compensatory mitigation is proposed to be onsite and areas where mitigation efforts have taken place on the property shall be protected long-term protections in perpetuity through the use of a Declaration of Restrictive Covenants, following the conclusion of the Site Maintenance and Monitoring program and regulatory agency sign-off on the mitigation efforts compliance with the permit requirements.

After the onsite wetland creation and enhancement activities are complete, a 5-year annual monitoring program will be implemented in accordance with the Maryland Compensatory Mitigation Guidance (IMTF, 1994), and the guidance provided in RGL No. 08-03 (USACE, October 2008). Performance standards for monitoring will be within accepted guidelines.

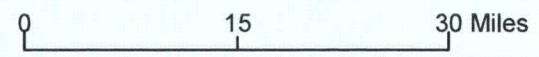
Monitoring of the stream channels proposed within the mitigation plan will be performed in an effort to compare post-construction conditions to pre-construction baseline data and within the specifications set forth in the plan and by regulating agencies.

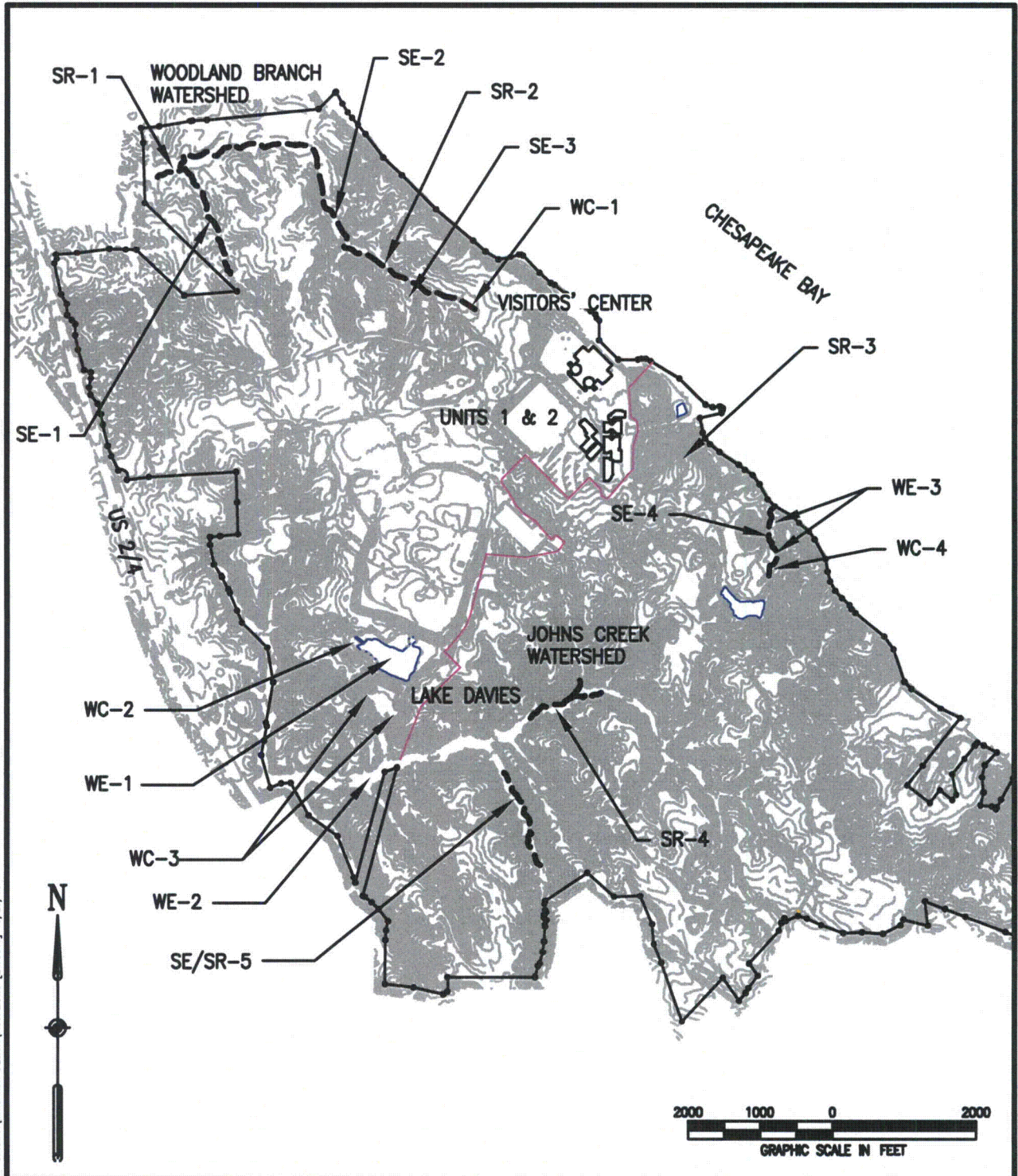


\\lovetonp\Projects\Utilities\Unstar1462103\_CC3NP\_Phase II Mitigation\Reports\GIS\MXD\Calvert Cliffs\_Fig1 Vicinity.mxd



**Figure 1. Vicinity Map**  
Calvert Cliffs Nuclear Power Plant Wetland Delineation Addendum





FILE PATH: Q:\PROJECTS\1462103 - UNSTAR\MITIGATION DESIGN\FIGURE.DWG [LAYOUT] 10/29/10



**EA ENGINEERING,  
SCIENCE, AND  
TECHNOLOGY**

**UNSTAR NUCLEAR ENERGY  
CALVERT CLIFFS NUCLEAR POWER  
PLANT  
LUSBY, MARYLAND**

**FIGURE 2 - MITIGATION AREAS**

PROJECT MGR <b>RP</b>	DESIGNED BY <b>JJM/CJS</b>	DRAWN BY <b>CJS</b>	CHECKED BY <b>GAT</b>	SCALE <b>1"=2000'</b>	DATE <b>OCT. 2010</b>	PROJECT NO <b>1462103</b>	FIGURE <b>2</b>
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**Attachment 5**

**UniStar Nuclear Energy Letter UN#10-293, from Greg Gibson (UNE) to Document Control Desk, U.S. NRC, UniStar Response to Selected Comments on the Calvert Cliffs Nuclear Power Plant, Unit 3 Draft Environmental Impact Statement (EIS), dated November 19, 2010**



Greg Gibson  
Vice President, Regulatory Affairs

750 East Pratt Street, Suite 1600  
Baltimore, Maryland 21202



November 19, 2010

UN#10-293

Woody Francis, Project Manager  
U.S. Army Corps of Engineers – Baltimore District  
10 S. Howard Street  
Baltimore, Maryland 21201

Subject: UniStar Response to Selected Comments on the Calvert Cliffs Nuclear Power Plant, Unit 3 Draft Environmental Impact Statement (EIS)

The purpose of this letter is to respond to selected comments submitted to the Nuclear Regulatory Commission (NRC) and the U.S. Army Corps of Engineers (ACOE) relating to the Calvert Cliffs Nuclear Power Plant (CCNPP), Unit 3, Draft Environmental Impact Statement (Draft EIS) published by the NRC in April, 2010.

#### Geologic

A comment was submitted that Dr. Susan Kidwell and Dr. Thomas Vogt suggest that additional geologic studies should have been performed. This comment is apparently related to the Safety Evaluation Report (SER) portion of the Combined License Application (COLA) and not to the Environmental Report (ER) portion of the COLA. As such, the comment is not related to environmental impacts of either the issuance of a Combined Operating License or a Wetlands Permit. Rather, the comment is a "safety" comment as addressed by the Nuclear Regulatory Commission as stated in the Draft EIS, Sect. 2.8:

*'Considering the geological characteristics of the site and vicinity are essential to the safe design and operation of the plant, but building and operating the plant does not have a significant environmental impact on geological resources. . . .'*

*Draft EIS, § 2.8 at 2-131.*

Notwithstanding the above, UniStar notes that the statements of both Dr. Kidwell and Dr. Vogt were that the geologic study could have been broader in scope. UniStar notes that the site characterizations performed met or exceeded all requirements in applicable Federal requirements, including NRC Regulatory Guide, 1.206 and the NRC Standard Review Plan, NUREG-0800.

As stated in the Draft EIS, a detailed description of the geological, seismological and geotechnical conditions at the CCNPP site was provided in Section 2.5 of the UniStar Final Safety Analysis Report (FSAR) (Draft EIS, Sect. 2.8). As stated in the FSAR, as part of the

UN#10-293

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comprehensive site investigations performed, UniStar engaged Bechtel to conduct a review of previously published reports on geology and seismology with respect to the Calvert Cliffs site, including published geologic literature which updates the existing geological and seismological information and unpublished geologic literature, studies and projects identified through the U.S. Geological Survey.

UniStar also engaged the nationally respected William Lettis and Associates to conduct field investigations of regional and site tectonics and structural geology, which included field reconnaissance of the site and within a 25 mile radius. Geologists in teams of two or more visited the site in late summer and autumn 2006 and focused on exposed portions of the Calvert Cliffs, other cliff exposures along the west shore of the Chesapeake Bay and roads traversing the site within a 5 mile radius. Aerial reconnaissance within a 25 mile radius of the site was conducted by two geologists in 2007, to determine the geomorphology of the Chesapeake Bay area and to target numerous previously mapped geologic features and potential seismic sources within a 200 mile radius of the CCNPP site (e.g., Mountain Run fault zone, Stafford fault system, Brandywine fault zone, Port Royal fault zone and Skinkers Neck anticline). *FSAR, Sect. 2.5, at 2-1051 - 1052.*

Dr. Kidwell was interviewed by John Baldwin of William Lettis and Associates, during which she discussed her theory of "the postulated fault at Moran Landing and possible structural control of drainage patters in Southern Maryland." [emphasis added] (*Testimony of Dr. Susan Kidwell, Maryland Public Service Commission, Case No. 9218, April 19, 2010, p. 103 (line 15) – p. 104 (line 21)*). Accordingly, input from Dr. Kidwell and Dr. Vogt was formally evaluated and considered by William Lettis and Associates and Bechtel during the investigative and analytical phases of the site characterizations. However, no confirmatory evidence of a postulated fault was identified from the detailed site reconnaissance, despite repeated attempts.

In summary, UniStar concludes the Draft EIS is complete and accurate, and appropriately concludes that the construction and operation of CCNPP Unit 3 will not impact geological resources.

### Water Resources

A concern apparently has been made that authorization by the Maryland Public Service Commission (MPSC) to utilize groundwater from the Aquia aquifer could cause residential wells to "run dry" and that excessive draw down of the aquifer could exacerbate the arsenic levels that have been detected in the aquifer. UniStar conducted detailed utilization studies of groundwater which were evaluated in depth during the original MPSC proceedings, and resulted in the MPSC issuing a Certificate of Public Convenience and Necessity (CPCN) specifically authorizing groundwater withdrawal.

Under Maryland law, the MPSC has exclusive authority to authorize groundwater use by proposed electric generating stations, but it does so in consultation with the Power Plant Research Program (PPRP) of the Maryland Department of Natural Resources and the Maryland Department of the Environment. *Md. Code, Public Utilities Commission § Art. 7-208(h)(1); See also Env't. Art. 5-502(e); Nat. Res. 3-306(a).*

The Environmental Review Document submitted in the MPSC proceedings by PPRP specifically concluded that UniStar's proposed withdrawal will result in very small drawdown amounts (15 – 17.3 feet at distances up to 3.5 miles, 5 years into usage) as compared to the available drawdown calculated pursuant to Maryland regulations (254 feet). On that basis, the state authorities concluded that "the drawdown in the Aquia will not cause an unreasonable impact to

the nearby users for the limited five year period of construction for Unit 3." Environmental Review Document at 6-23, MPSC Case No. 9127, July 2008.

On the basis of the minimal projected drawdown, UniStar agrees with the NRC conclusion in the Draft Environmental Impact Statement that UniStar's use of groundwater would have no significant impact. *Draft EIS*, § 5.2.2.2 at 5-5, and § 5.2.3.2 at 5-7.

#### Air Impacts

Comments have apparently been made that water from the Chesapeake Bay has been tested for salinity and at times had Total Dissolved Solids (TDS) (primarily salt) at levels as high as 20,000 ppm, but the annual emissions of particulates were based on an assumed salinity level of 17,500 ppm. As PPRP pointed out in its Environmental Review Document submitted in the original proceedings, and relied upon by the MPSC in its issuance of a Certificate of Public Convenience and Necessity, salinity will be controlled by UniStar by controlling the "cycles of concentration" of the intake water.

The final conditions of the CPCN allow up to 35,000 ppm TDS, which would result if the intake water contained 17,500 ppm of TDS and went through two cycles, thus becoming doubly concentrated with TDS. If the TDS concentration of the intake water were lower, more cycles of concentration could potentially occur without exceeding the 35,000 ppm TDS level. Similarly, if the intake water had a higher concentration than the assumed 17,500, UniStar could control the final concentration by managing the cycles of concentration. Thus, it does not matter whether the Chesapeake Bay water sometimes has TDS concentrations higher than 17,500 ppm so long as the emissions limit is met by managing the cycles of concentration.

Importantly, an emission limit is set in CPCN Condition 77, which establishes maximum daily and annual emissions of particulate matter (PM, PM10 and PM 2.5). The CPCN does not set a maximum TDS concentration, but rather allows UniStar to manage to the concentration that assures the PM limit is met.

UniStar notes the MPSC has exclusive authority to issue air emissions approvals pursuant to the Federal Clean Air Act, Prevention of Significant Deterioration (PSD) permit program. *Baltimore Gas and Electric Co. v. Dept. of Health and Mental Hygiene*, 284 Md. 216, 231 (1979) ("The overall [regulatory scheme] is for the Public Service Commission to be vested with the sole power and authority to approve on behalf of the State of Maryland the erection of electric generating stations. This approval includes all matters involving or concerned with environmental impact.")(emphasis added). The CPCN statute provides that the grant of a CPCN "constitutes . . . registration and a permit to construct, as required under Title 2, Subtitle 4 of the Environment Article." *Md. PUC Art. 7-208(h)(2)*. Accordingly, the CPCN serves also as the construction permit required under the Federal New Source Review program. 47 *Fed. Reg.* 7834, *Approval of Revision of the Maryland State Implementation Plan (February 23, 1982)*. PSD approvals have been determined to be the "functional equivalent" of National Environmental Policy Act (NEPA) review by the federal courts. *Portland Cement Association v. Ruckelshaus*, 486 F.2d 375 (DC Cir. 1973). Thus, in the DEIS the NRC relied on the extensive review of the air quality impacts of operation of the proposed Unit 3 that were conducted by PPRP to conclude that the air impacts from operation of Unit 3 would be minimal.

## Noise

Comments have apparently been made regarding UniStar noise studies because they considered a "leaf off" scenario, but not a "cleared" scenario, and because the study centered around the cooling tower for the plant.

UniStar conducted significant studies of projected noise from the Project. The studies were conducted by a noise specialist, Hessler Associates. The noise assessment consisted of measuring and documenting baseline or existing conditions, predicting noise emissions from the existing and planned facilities, assessing any potential impact during construction and operation of the planned expansion and demonstrating compliance with the state regulatory limits for noise. The studies considered seven potentially sensitive residential receptor locations.

Hessler predicted operational noise emissions on the basis of computer noise modeling for the plume-abated cooling tower, which it determined would be the major acoustic source from the planned Project. Hessler concluded that the project at the Calvert Cliffs site can and will be acoustically designed to comply with the requirements of Maryland law regulating industrial noise emissions. Further, construction and operational noise from the project will meet all applicable regulations without restrictions or exceptions. Preliminary Environmental Noise Assessment, Hessler Associates, Inc. May 2008. See MPSC Case No. 9127, Technical Report, Appendix A, Volume 8, July 2008.

On the basis of the above studies, the Power Plant Research Program determined that the Project would meet applicable noise requirements. UniStar agrees with the PPRP conclusion because the "leaf off" scenario is comparable to a "cleared scenario" and because, in noise studies, the dominant noise source controls the projected noise level. Therefore, not modeling the smaller, less significant sources of noise besides the cooling tower, is unlikely to affect the outcome. As the PPRP explained in its Environmental Review Document, Section 3.6.1, filed in the MPSC proceedings:

*'Because sound levels are expressed as relative intensities, multiple sound sources are not directly additive. Rather, the total noise is primarily a result of the source of highest intensity. For example, two sources, each having a noise rating of 50 dBA, will together be heard as 53 dBA; a source of 65 dBA combined with a source of 85 dBA will result in a noise level of 85.1 dBA. As the intensity difference between the two sources increases, the effects of the lower sound sources become negligible.'*

In addition, PPRP conducted an independent analysis of potential noise impacts from both construction and operation of the proposed Calvert Cliffs Unit 3 and concluded that regulatory requirements for noise would be met. Specifically, Section 7.4 of the Environmental Review Document states:

*'There is a large buffer distance available between the areas of disturbance during construction and the property boundaries where potential noise receptors are located. As a result, the construction noise is projected to comply with State regulatory limits for allowable noise at the site boundary, and no adverse impacts to the community are anticipated.'*

*Continuous noise at the facility during operation will be significantly less than during peak construction. The primary noise source will be the hybrid mechanical cooling tower, but due to the distance buffer between the noise*

*source and the nearest receptors, the cooling tower is projected to comply with all applicable noise limits. To ensure that noise impacts from the cooling tower are acceptable, PPRP is recommending a licensing condition that requires UniStar to conduct noise monitoring after the plant becomes operational, at the plant boundaries in locations of closest proximity to residentially zoned land.'*

In addition, UniStar will be required by Condition 55 of the final CPCN to conduct post-construction noise testing to demonstrate compliance with State regulatory limits.

### Summary

UniStar is pleased to provide this discussion of the facts and circumstances of selected concerns about the Draft EIS to the U.S. Army Corps of Engineers – Baltimore District. UniStar has diligently met the regulatory requirements and guidance for carefully and thoroughly characterizing and evaluating all aspects of the proposed project, including but not limited to, the geological, seismic, hydrological, water quality, air emissions, and noise impacts. UniStar supports and concurs with the independent evaluation and conclusions of the U.S. Nuclear Regulatory Commission in the Draft EIS.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Greg Gibson', with a long horizontal line extending to the right.

Greg Gibson

cc: Susan Gray – Power Plant Research Program  
Laura Quinn – NRC