



MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Joseph P. Gill, Deputy Secretary

July 2, 2010

Chief, Rules and Directives Branch
Division of Administrative Services
Office of Administration
Mailstop TWB-05-B01M
Washington, DC 20555-0001

4/21/2010
75FR 20867
①

RECEIVED

2010 JUL - 7 PM 2:56

RULES AND DIRECTIVES
BRANCH
USAFRC

Dear Sir or Madam:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement for the proposed Calvert Cliffs Nuclear Power Plant Unit 3. Our comments are attached. If you have any questions, please give me a call at 410-260-8661.

Sincerely,

Susan T. Gray
Manager, Nuclear Programs
Power Plant Assessment Division
Maryland Department of Natural Resources

SONSI Better Complete
Template = ADM-013

ERIDS = ADM-03
Call = L. Quinn
(LMBI)

S. Imboden (SKF)

**Comments on Draft Environmental Impact Statement (DEIS) for the
Combined License (COL) for Calvert Cliffs Nuclear Power Plant Unit 3
(NUREG-1936), dated April 2010**

Prepared by Maryland DNR, Power Plant Research Program (PPRP)

General Comments:

- Although UniStar's plans and evaluations continue to evolve, the NRC team "froze" the UniStar application about the time of the State's original CPCN hearings (Maryland PSC Case No. 9127), and based its evaluation on the proposed facility configuration and planned equipment at that time. While this is understandable for the purposes of document production, it has resulted in NRC's project description being out of date in several areas. To avoid confusing interested parties who may be reviewing both the NRC and the State of Maryland documents, PPRP's comments below identify the major differences in project description.

- For the most part, the NRC DEIS appropriately references the State's Certificate of Public Convenience and Necessity (CPCN) conditions from Case No. 9127, and notes that UniStar's compliance with the State's air quality and water appropriations permits will minimize impacts to those resources. Any substantive inconsistencies between the CPCN conditions and the evaluation or conclusions in the NRC DEIS are discussed in the specific comments below. Case 9127 final conditions are available as Appendix II under Item #114 at www.psc.state.md.us (enter "9127" in the Case search box) or go directly to http://webapp.psc.state.md.us/Intranet/CaseNum/submit.cfm?DirPath=C:\Casenum\9100-9199\9127\Item_114&CaseN=9127\Item_114. In addition, In November 2009, UniStar submitted an application to modify the Calvert Cliffs Unit 3 (CCU3) project that was licensed in Case 9127. In the application, being handled via Maryland Public Service Commission (PSC) Case 9218, UniStar is proposing minor changes to the design of previously approved sources and the addition of two types of new minor air emission sources. This request for a modification to the CCU3 CPCN affects only air quality; there were no proposed changes to the project that affect water, wastewater, terrestrial, noise, or socioeconomic resources or impacts. The State's Case 9218 proposed conditions are available as Item #28 www.psc.state.md.us (enter "9218" in the Case search box) or go directly to http://webapp.psc.state.md.us/Intranet/CaseNum/submit.cfm?DirPath=C:\Casenum\9200-9299\9218\Item_28&CaseN=9218\Item_28.

Specific Comments:

Document Reference	Comment
PROJECT DESCRIPTION	
Page 3-30	The project description indicates that a fifth, non-safety-related cooling tower would be constructed along with the four Essential Service Water System (ESWS) cooling towers. We understand that this is no longer part of UniStar's project design.
Page 3-30	The project description is inconsistent with DEIS Section 5.7, which describes the air quality impact analysis. Specifically, page 3-30 states that "Unit 3

	would have six standby diesel generators and two Station Blackout diesel generators," when actually there will be 4 emergency diesel generators and 2 station blackout diesel generators, for a total of 6 units (as described on page 5-46 of the DEIS).
Pages 5-46 and 5-47	<p>The list of regulated air emission sources and emission rates does not reflect the current design as we understand it. PPRP's most current information regarding the relevant parameters is included as <u>Attachment A</u> to these comments.</p> <p>To avoid confusion on the part of individuals who may be reviewing both the NRC's and the State's evaluation, we would request that either (a) the final EIS be revised to reflect updated information, or (b) the final EIS include notations in appropriate parts of Sections 3, 4 and 5 to reflect the fact that some design parameters have changed.</p>
Section 9.4	In the System Design Alternatives section of the DEIS, there is some confusion regarding the type of cooling system incorporated within the UniStar design. On page 9-161, the DEIS states that the proposed system is a mechanical draft cooling tower with plume abatement. However, UniStar's original cooling tower design study recommended a hybrid wet-dry mechanical cooling tower with plume abatement, and this is the description that the State used in its review documentation as part of the CPCN process. George Vanderheyden of UniStar confirmed the hybrid wet-dry design in his comments during the scoping process (see Appendix D of the DEIS, page D-39, lines 6 and 16). The NRC should clarify this point with UniStar and revise the relevant portions of Sections 3 and 9 appropriately.
TRANSPORTATION	
Section 4.4.4.1	We believe that the DEIS understates the potential impact of construction worker traffic on Calvert County. The Maryland State Highway Administration has not yet agreed to an acceptable Traffic Management Plan for mitigating impacts.
RECREATION	
Page 4-6	The DEIS concludes that construction and operation of Calvert Cliffs Unit 3 (CCU3) would have a small impact on recreational resources, including the Captain John Smith National Historic Trail. While PPRP does not necessarily disagree with the conclusion, it is difficult to determine the degree to which the trail would be affected in the absence of the National Park Service's (NPS) comprehensive management plan for the resource. This plan is currently under development and is scheduled to be released this year. During the State's CPCN evaluation process, NPS expressed concerns about proposed Unit 3 and we concluded that additional consultations between UniStar and NPS are necessary to ensure that the project's effects on the trail are understood and mitigated to the extent possible. This should be referenced in the DEIS as well.
FISCAL IMPACTS	
Page 5-35	There is a significant difference between the property tax revenue stream estimated by UniStar (and stated in the DEIS), and PPRP's estimate of the same. The property tax revenue stream stated in the DEIS amounts to \$57.1 million in the first year of operation, declining over 15 years to \$42.8 million. The property tax revenue stream is based on a capital cost of \$5,000/kW, as estimated by UniStar in a response to a request for additional information (RAI), dated November 16, 2009. However, in the CPCN Case 9127 evaluation, PPRP estimated the total to be approximately \$20 million in new tax revenues in the first year of operation. PPRP's estimate was based on a

	Calvert County analysis of the proposed 50%, 15-year tax credit to Constellation Energy Group LLC (August 2006). This does not change the conclusion that CCU3 will result in a large positive benefit in property tax revenue to Calvert County. The NRC may want to note in the final EIS the fact that alternative methods of estimating future tax revenues may produce significantly different results, given the fact that detailed information on capital expenditures is not known, or is proprietary, at this time.
WATER SUPPLY	
Section 4.2.2, p. 4-9, line 7	The DEIS states that PPRP recommended that UniStar be granted an 8-year ground water appropriation to provide water for construction. This statement is outdated. The statement should be updated to indicate that the Maryland Public Service Commission (PSC) granted an 8-year appropriation to use ground water for construction as part of the issuance of the CPCN final order of June 26, 2009.
Table 4-10	The water-related impacts section of the table states that UniStar must "comply with COMAR 26.17.06 for dewatering activities or obtain Water Appropriation and Use Permit, as needed." This statement is not correct. The Water Appropriation and Use permit is subsumed within the CPCN issued by the Maryland PSC. Therefore, approval for dewatering was granted by the Maryland PSC when the CPCN was issued on June 26, 2009. The PSC license conditions pertaining to dewatering are Nos. 28 through 35.
Table 4-10	The water-related impacts section of the table includes the bullet "use offsite water supply." UniStar is only permitted to import fresh water to the site after it meets the requirements imposed by the Maryland PSC, with the exception of an emergency. Therefore, the statement should be revised to include "after the requirements set forth in Maryland CPCN Condition No. 38 have been met."
Section 5.2.2.2, p. 5-5, line 7	The statements regarding the proposed use of ground water from the Aquia aquifer as an alternative source upon unavailability of the desalination plant are not up to date. The CPCN issued by the Maryland PSC in Case 9127 required UniStar to conduct an alternatives analysis and submit the findings to MDE for consideration within one year (CPCN Condition No. 16). UniStar submitted a draft report describing the alternatives analysis to MDE and PPRP on June 2, 2010. MDE and PPRP are reviewing the report to determine whether the requirements set forth in Condition 16 have been adequately addressed.
Section 7.2.2, p. 7-11, line 4	The EIS did not reference specific well hydrographs in support of statements regarding changing potentiometric surface in the Aquia aquifer. The nearest Aquia well hydrograph (Well CA Fd 54), with continuous recording, is at Calvert Cliffs State Park. The following link provides the trend since 2004. http://waterdata.usgs.gov/md/nwis/dv?cb_72020=on&format=gif_default&begin_date=2003-06-21&end_date=2010-06-21&site_no=382407076260301&referred_module=sw . Additionally, a hydrograph for this well spanning the period 1978 to 2008 is shown on Figure 3-3 of PPRP's July 2008 Draft Environmental Review Document. The July 2008 ERD is available as part of Item #38 under Case 9127 or go to http://webapp.psc.state.md.us/Intranet/CaseNum/submit.cfm?DirPath=C:\Case num\9100-9199\9127\Item 38&CaseN=9127\Item 38 .
Section 7.2.2, p. 7-11, lines 10-13	The DEIS states that MDE controls appropriations in excess of 10,000 gpd. The reference to a quantity should be removed in the context of the sentence that refers to the 80% management level. MDE regulates new ground water withdrawals unless an exemption has been granted. Exemptions are eligible

	for uses up to 5,000 gpd, except for community water systems and if a use is in a water management strategy area.
CHESAPEAKE BAY CRITICAL AREA	
Page 2-34	The DEIS uses the scarlet tanager as a representative for Forest Interior Dwelling Species (FIDS) of birds, but does not indicate there are 24 other bird species designated as FIDS.
Page 2-34	The description of the first type of FIDS habitat should indicate forested tracts at least 50 acres in size rather than 20.2 acres.
Page 2-34	Although CAC 2000 does not state specifically that scarlet tanagers are declining in Maryland, the breeding bird atlas for Maryland does show a significant declining trend – see <i>Atlas of the Breeding Birds of Maryland and the District of Columbia</i> (1996) C. S. Robbins, Senior Editor. University of Pittsburgh Press.
Page 2-35	Figure 2-11 showing FIDS habitat in Calvert County, Maryland, should indicate the source of this data.
Page 2-164	Reference citation 2008d is redundant with 2008a.
Page 4-14	The sentence, "No area within CBCA limited development areas (LDAs) would be disturbed, and all temporary impacts would occur outside the CBCA," is misleading in that there are no LDAs designated in the project area. Within the Critical Area, the project would impact areas designated as Intensely Developed Area (IDA) and Resource Conservation Area (RCA).
Page 4-17	"There would be no disturbance in the LDA," is misleading in that there is no LDA designated in the project area.
Page 4-24	The statement, "Work activities within the CBCA are pending approval from the CBCA Commission, and mitigation may be warranted," should be updated to reflect that the Critical Area Commission has already granted approval of the project subject to a set of conditions. Critical Area Commission conditions are available as Item #80 under Case 9127 http://webapp.psc.state.md.us/Intranet/CaseNum/submit.cfm?DirPath=C:\Case num\9100-9199\9127\Item 80\&CaseN=9127\Item 80 .
Page 4-49	"To the extent practicable, design construction footprint to account for CBCA and other important habitat, including bald eagles nests," suggests that the project design has not concluded. The Critical Area Commission has reviewed what it considers to be the final project design. Any departure from this final project design that impacts the Critical Area would require further review by the Commission.
AIR QUALITY	
Page 5-70	In the summary of operational impacts, specifically Section 5.10.3 summarizing air impacts, the text implies that diesel generators are the only stationary source of emissions during operation. In fact, the CWS cooling tower is a significant source of air emissions.

RADIOLOGICAL IMPACTS	
Section 5.9	Since Federal radiation limits are stated in terms of radiation dose, UniStar focused on radiation dose when determining additional radiological impact. UniStar rightly uses the maximally exposed individual (MEI) as a "worst case scenario" when estimating impact. However, the lack of information on radiation concentrations that were used as a basis for dose projections precludes a "gut check" of radiological impact. The document should include an example calculation of dose using the inputs described for at least one of the computer models referenced.
Section 5.9	Inadvertent discharge of effluent to groundwater within the CCNPP property and its possible resulting migration out of the property to drinking water wells appears not to have been addressed. An analysis of groundwater migration patterns should be included in the Final EIS.
Page 5-64, line 9	Sentence should clarify that 1754 person-rem is the maximum dose at which zero excess health effects are probable. Also clarify whether 1754 person-rem is an annual value.
Section 5.9.6	Note that PPRP also conducts independent radiological monitoring of the environment around CCNPP and provides MEI dose estimates (e.g., Jones, T.S., B.H. Hood. 2010. Environmental Radionuclide Concentrations in the Vicinity of the Calvert Cliffs Nuclear Power Plant and the Peach Bottom Atomic Power Station: 2006-2007. PPRP-R-31. June 2010. Maryland Department of Natural Resources, Power Plant Research Program, Annapolis, MD.)
TERRESTRIAL AND AQUATIC ECOLOGY	
Pages 2-90, 5-28 and 9-136	Will potential future control of zebra mussels or any other reasonably predicted invasive or nuisance species require application of additional control chemicals that have not yet been identified or assessed?
Appendix K	Appendix K of the DEIS should be revised or supplemented for the FEIS with the latest version of the Conceptual Phase II Non-Tidal Wetland and Stream Mitigation Plan and any additional updates on the topic that come in before the due date of the Final EIS.
Page 4-39	We expect the UniStar-suggested measures for reducing potential dredging impacts to be fully evaluated and implemented where appropriate as part of the Joint Evaluation and Permit process. Failure to be resolved in the DEIS should not constrain in any manner the addressing of these items in the Joint Permit Process.
Pages 2-66, 5-11, F-44, 2-24, and 2-135	The proposed impact or disturbance to beach habitat for the project (and maintenance dredging) is very limited (see pages 2-66, 5-11 and F-44). However, the site does have beach habitat present to the south of the barge slip (2-24 and 2-135). We request that the environmental documentation include assessment of potential presence of horseshoe crabs, terrapins, and other significant tidal beach species (and/or those species reproducing on beach habitat). Measures or planning efforts for avoidance and minimization of impacts to beach habitats, if and as appropriate, should be assessed and described.

THE NEED FOR POWER

Section 8.0,
Page 8-5; and
Section 10.6,
Page 10-21

The DEIS relies on a variety of sources to assess the need for power, including testimony from PSC Staff presented in PSC Case No. 9127 concerning the CPCN for Calvert Cliffs Unit 3. While the PSC is charged with addressing impacts to reliability and stability of the electric system in Maryland as part of a CPCN proceeding, it should be noted that any explicit cost/benefit assessment of the need for power and the cost of alternatives is no longer an integral part of the CPCN licensing scope. The statement on lines 10-11 of page 8-5 in the DEIS is no longer accurate: "As part of this licensing process, applicants must address a full range of environmental, engineering, socioeconomic, planning, and cost issues (MDNR PPRP 2007)." The aforementioned reference is not up to date, and we request that the citation be removed from the DEIS. An up-to-date description of the licensing scope and process is included in Chapter 1 of the PPRP document *Maryland Power Plants and the Environment* (CEIR-15), which is available here: <http://esm.versar.com/pprp/ceir15/intro.htm>. In addition, the Conclusions section on the Need for Power (page 10-21) states that the NRC relied upon PSC determinations (including the issuance of the CCU3 CPCN) as the basis for NRC's assessment that power is needed. Because the CPCN process does not rely on a "need for power" demonstration as a prerequisite for certification, the paragraph on page 10-21 should be revised.

The NRC should also be aware that updated information from the PSC on supply and demand forecasts in Maryland is available in the recently released document *Ten-Year Plan (2009-2018) of Electric Companies in Maryland*, which is available here: <http://webapp.psc.state.md.us/Intranet/Reports/2009-2018%20Ten%20Year%20Plan.pdf>.

ATTACHMENT A

Regulated emissions sources associated with the proposed Unit 3 project under the PSC Case No. 9127 and subsequent Case No. 9218 applications include:

- The CWS cooling tower with a maximum water circulation rate of 825,092 gpm.
- Four ESWS cooling towers, each with a maximum water circulation rate of 20,029 gpm.
- Four emergency diesel generators (EDG) rated at 10,130 kW(e).
- Two station blackout (SBO) generators rated at 5000 kW(e).
- Two fire water pumps (FWP) generators rated at 440 bhp.
- Two sponge media blast units.
- Maximum of 15 diesel fuel storage tanks.

The maximum water circulation rates for the CWS and ESWS cooling towers were revised and presented in the *Addendum to Modeling Analysis for the Proposed Unit 3 at Calvert Cliffs Nuclear Power Plant*, submitted by UniStar in August 2008 under Case No. 9127. The fire water pump generators, sponge media blast units and addition of up to nine diesel fuel storage tanks are new emission sources added in Case No. 9218.

PPRP and MDE reevaluated the annual emissions from the proposed Calvert Cliffs Unit 3 (CCU3) project since there were changes to the design water recirculation rates of the cooling towers and addition of new air emission sources. The annual emissions for the proposed CCU3 project are presented in the table below.

Annual Emissions for Proposed CCU3 Project
(tons per year)

	PM	PM ₁₀	PM _{2.5}	NO _x	CO	VOC	SO ₂
Sponge Media Blast Units	0.3	0.3	0.3				
Cooling Water System Cooling Tower	325.2	251.4	42.2				
Essential Service Water System Cooling Towers	32.7	31.8	5.9				
Diesel Fire Water Pumps	0.1	0.1	0.1	1.5	1.3	0.1	0.002
Diesel Generators	1.6	1.6	1.5	22.8	28.9	3.8	1.3
Storage Tanks						0.2	
Total	359.7	285.1	49.9	24.3	30.2	4.2	1.3