CCNPP3COLA PEmails

From:	Thomas Fredrichs
Sent:	Tuesday, May 13, 2008 3:54 PM
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Subject:	RAIs for Calvert Cliffs Environmental Report
Attachments:	2008.05.13 RAIs Main Table.doc; 2008.05.13 RAIs Hydrology.doc; 2008.05.13 RAIs Main Table Additions.doc

Dear Mr. Wrobel:

Attached are requests for additional information (RAI) generated by the staff during its review of your environmental report (ER) and the site audit conducted in March 2008. The Main Table consists of information needs tranmitted prior to the site audit. Clarifying additions were made to the table; they are highlighted in blue. Three items in the Main Table are noted as no longer applicable. A separate table for hydrology RAI was generated to help clarify the context of the requests in the Main Table. The Main Table and the Hydrology Table are cross referenced for convenience. The Main Table Additions are separate requests generated from discussions that took place during the site audit.

The staff plans to complete its the Draft Environmental Statement (DEIS) in February 2009. To meet that schedule, your responses to the RAI need to be received within 30 calendar days. The responses must be submitted under oath and affirmation to permit the staff to rely on them as a basis for its DEIS.

Please contact me if you have any questions.

Sincerely,

Thomas Fredrichs, Sr. Project Manager
US Nuclear Regulatory Commission
Office of New Reactors
Divison of Site and Environmental Reviews
Rockville, MD 20852
Phone: (301) 415-5971

Hearing Identifier: CalvertCliffs_Unit3Cola_Public_EX
Email Number: 19

Mail Envelope Properties (3D27D29AB75BCD4BAE913B63CBFBBEDF73597B40A8)

Subject: RAIs for Calvert Cliffs Environmental Report
Sent Date: 5/13/2008 3:53:33 PM
Received Date: 5/13/2008 3:53:37 PM
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Files	**Size**	**Date & Time**
MESSAGE	1327	5/13/2008 3:53:37 PM
2008.05.13 RAIs Main Table.doc	365562	
2008.05.13 RAIs Hydrology.doc	155130	
2008.05.13 RAIs Main Table Additions.doc	98298	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

May 13, 2008

Calvert Cliffs COL – ESRP-Based RAIs for Drafting EIS

Item	ESRP/ER Section	Request for Additional Information (including literature citation and data analysis summary)
1	1.1	Section 9.2.3.3.1 states that CCNPP Unit 3 will operate as a baseload, merchant independent power producer. Do CCNPP Units 1 and 2 operate in a similar manner?
2	1.2.3	Section 1.2.3 of the ER states that the net electrical output of proposed Unit 3 would be 1562 MWe. Section 9.2.2 of the ER refers to an installed capacity of 1600 MWe for Unit 3. State the net electrical output of proposed Unit 3. Explain the difference between the two values.
3	2.2.1	Identify the closest Tribal lands to the CCNPP site.
4	2.3.1	Provide information on circulation patterns and velocity vectors in the vicinity of the proposed discharge outfall. Thermal discharge and spatial extent are discussed in Section 5.3.2 pages 5.3-(8-10), Tables 5.3.2-(1-4), Fig 5.3.2-1.
5	2.3.1	Soil textural classification (%sand, %silt, %clay) and bulk density are missing. Please provide them. In Table 2.3.1-19, define the meaning of "Natural Moisture" (total porosity, moisture content, field capacity, or wilting point by volume or weight, etc.) and "Moisture Unit Weight" (e.g., moisture content per unit dry weight of soil, moisture content per unit wet weight of soil, etc.). Define PCF with actual units (e.g., lbs/ft^3). Finally, where did the 0.8 come from when defining the effective porosity?
6	2.3.2 and 3.3.1	Provide a water use diagram during pre-construction and construction periods. (Cross reference with HS-7 HS-7[(a)])
7	2.32 and 3.31	Maximum Chesapeake Bay withdrawal is 43,480 gpm (97 cfs) (Table 3.3-1). Confirm that there is an error in Fig. 3.3-1, which reports 37,778 gpm. Maximum effluent discharge to Chesapeake Bay is 23,228 gpm (51.8 cfs) (Figure 3.3-1). Confirm that there is an error in Section 3.4.2.2 page 3.4-6, which conflicts with Fig 3.3-1 and Table 3.3-1. 19,437 should be 19,426; 17,366 should be 17,355, and 23,204 should be 23,228. Is 17,633 the correct value in Section 3.5.2.2 page 3.5-8? Table 3.3-1. Confirm the error in Fig 3.3-1, which reports 37,778 gpm, or provide an explanation. Page 3.3-1 notes 4.1E7 gal/mo, which equals 935 gpm, not 3040 gpm. Confirm the error, or provide an explanation. Provide correct values where errors are confirmed. (Cross reference with HS-23, 24, 25[(a)])
8	2.4.1	Provide citable references/data for all field studies conducted in support of Unit 3 construction and operation.
9	2.4.2	Citable references need to support facts presented. Provide full citations.
10	2.4, 3.2	Cannot read legends. Provide legend information for the following figures: Figs 2.4-1, Fig 3.2.1-(26, 27, 37, 40, 42-45, 47-50, 52-55); Fig 3.2.2-(1-3, 12, 13)
11	2.4	The key appears to be mislabeled as Assessment Area Xi, as opposed to IX. Identify the correct label.
12	2.4.2	An Essential Fish Habitat (EFH) analysis will be conducted by NRC. To support this analysis, please provide information on the Federally managed fish and shellfish species with designated EFH in the Chesapeake Bay in the vicinity of Calvert Cliffs. This information should consist of life histories, habitat requirements, prey species, and impacts of construction and operation on the Federally managed species as well as their prey species.

Calvert Cliffs COL – ESRP-Based RAIs for Drafting EIS

Item	ESRP/ER Section	Request for Additional Information (including literature citation and data analysis summary)
13	2.4.2	Increased runoff and sediment loading to existing waterways (e.g., wetlands and creeks) during maximum precipitation events during construction may have impacts to natural resources, although this should be regulated by the permitting process. Provide an analysis to describe the impacts. (Cross reference with HS-1[(a)])
14	2.4.2.1	Provide complete survey [field] data of aquatic habitats, not just major category summaries; include seasonal data. Provide all aquatic survey data (e.g., water and sediment chemistry, sediment particle size, water and habitat quality, biota) in electronic format, such as Excel spreadsheets, so that verification calculations can be performed.
15	2.4.2.1	Describe freshwater tributaries on site that will (Branches 1 & 2) or may (Woodland Branch) be affected. Characterize the habitat and fauna within Branches 1 and 2 that would be impacted by the construction of Unit 3. Provide similar information about Woodland Branch, which may be affected by construction of the new unit. Also, characterize the flora and fauna within the tributaries of Johns Creek (Branch 3, two small unnamed small tributaries that do not show on all maps, and the main tributary near cooling tower site) that would be impacted by the construction of Unit 3. Provide data and other information that supports these characterizations.
16	2.4.2.1/2	Provide complete life-history/abundance/distribution information for important freshwater species, including "ecologically important" species, such as the North American beaver. Also is Humped Bladderwort in area? Provide complete life-history/abundance/distribution information for "important" estuarine species. In addition to those species included in the ER, provide information for summer flounder, red drum, weakfish, spotfin killifish, alewife, blueback herring, green turtle, leatherback turtle, and soft-shelled clam. For the spotfin killifish (Fundulus luciae), which is a state-listed species occurring in Calvert County, include information that allows a determination of the likelihood that the species could be affected by the proposed new unit. Sandy beach habitat was not included in the Rare Plant Survey conducted for the site. Confirm that the state-listed endangered sea purslane (Sesuvium maritimum), which inhabits sandy shore and beach habitats and is listed for Calvert County (MDDNR 2007), is not found on site.
17	2.4.2.2.6	Provide information about pests and diseases; thermophilic bacteria. In addition, provide information about diseases (e.g., mycobacteriosis, Cryptosporidium), invasive species (freshwater and estuarine), and other pests (e.g., jellyfish and comb jellies, Pfiesteria).
18	2.5	Provide citations/sources for individual tables and figures, as well as text where assertions and statistical statements regarding socioeconomics are made.
19	2.5.2.2	Provide information relating to the area's where political structure is high level and general. Provide elaboration on political structure, tax districts, and local and regional administrative organizations that may be directly affected by CCNP construction and operation for reference by the subsequent construction and operating sections. Provide the baseline tourist economy for later impact analysis.
20	2.5.2.8	Provide elaboration of relevant/applicable state, county, and city plans to address growth, housing, and land use changes with numbers/data if possible. If not available, say so.
21a	2.5.3	Provide copies of all consultation letters with SHPO and copies of all consultation letters with Tribes and interested parties including: • October 3, 2006, letter: RM Krich (UniStar) to Elizabeth Cole (MD Historical Trust), Request for Cultural Resource Information, CCNPP

Item	ESRP/ER Section	Request for Additional Information (including literature citation and data analysis summary)
		• November 20, 2006, letter: Dixie Henry (MD Historical Trust) to RM Krich (UniStar), Request for Information about Historic Properties • March 23, 2007, Letter: RM Krich (UniStar) to Elizabeth Cole (MD Historical Trust) (Draft Interim Report), Phase 1B Cultural Resources Investigation • June 7, 2007 Letter: J Rodney Little (SHPO/MD Historical Trust) to RM Krich (UniStar) MD Historical Trust Review of Phase I Cultural Resources Investigations, CCNPP (Draft Interim Report) • February 20, 2008, Email: Barbara Munford (GAI) to Mervin Savoy (Tribal Chairperson), Piscataway and Convoy Confederacy and Subtribes, Inc.
21b	2.5.3	N/A
21b	2.5.3	Describe the cultural background (prehistoric and historic) at the Calvert Cliffs site to put the historical properties in context. Provide this in the Phase II report planned for completion in August 08.
21c	2.5.3	Identify status and results of the phase II investigations. Provide this in the Phase II report planned for completion in August 08.
21d	2.5.3	Provide copy of cultural resource survey reports including: • Management Summary Phase 1A Cultural Resources Investigation, Calvert Cliffs Nuclear Power Plant, Prepared by GAI Consultants, Inc., October 20, 2006 • Draft Interim Report, Phase 1B Cultural Resources Investigations, Calvert Cliffs Nuclear Power Plant, Prepared by Barbara A. Mumford, M.A. and Matthew G. Hyland, PhD GAI Consultants, Inc., March 14, 2007 • Technical Report Cultural Resources Records Search within 10-mi Radius of Calvert Cliffs Nuclear Power Plant, Prepared by Matthew G. Hyland, PhD and Megan L. Otten, GAI Consultants, Inc., March 5, 2007. • Any recorded/used best management practices that is used for units 1 and 2 and if there is one in place for unit 3. • Phase 2 reports when they are completed
21e	2.5.3, 4.1.3	Provide copy of procedures that identify measures to be taken if cultural or historic resources are inadvertently discovered during construction.
21f	2.5.3, 4.1.3, 5.1.3	What measures for avoidance, minimization, or mitigation of any adverse effects on cultural or historic resources have been identified? Provide mitigation in the Phase II report planned for completion in August 08.
21g	4.1.3, 5.1.3	Explain how the impacts to historic properties are determined to be "moderate."
22a	2.5.3, 4.1.3	In light of the recent LWA Rule, if Constellation/UniStar will be conducting preconstruction activities and/or applying for a LWA, explain the impacts to cultural resources from pre-construction activities and then from construction activities.
22b	2.5.3, 4.1.3, 5.1.3	Describe the cumulative impacts to cultural resources and the process for making the determination. Provide cumulative impacts in the Phase II report planned for completion in August 08.
22c	2.5.3, 4.1.3	Provide pre- and post-construction aerial photographs when available. Provide photos in the Phase II report planned for completion in August 08.

Calvert Cliffs COL – ESRP-Based RAIs for Drafting EIS

Item	ESRP/ER Section	Request for Additional Information (including literature citation and data analysis summary)
22d	2.5.3, 9.3	Explain how cultural resources were considered in the site selection process and how the cultural background and known cultural resources were considered at the alternative site locations at a reconnaissance level.
22e	2.5.3, 4.1.3, 5.1.3	Explain the status of the parallel Maryland state review process concerning cultural resources at Calvert Cliffs and the extent to which State addresses cultural resources in MD PSC application.
23	2.5.2.9.2.1	Explain the difference in amount of treated water received by and sewage treatment throughput for Calvert County.
24	2.5.2.9.6.2	Describe St. Mary's Hospital capabilities to respond to an emergency, services provided, agreements with the applicant, and reciprocity agreements with other hospitals.
25	2.5.4	Provide comments from organizations linked-to/representing vulnerable low income and minority communities located near the proposed site. If there are none, say so.
26	2.5.4.5	Provide more extensive citation of EJ subsistence discussion.
27	2.5.6	Include information on use level and/or availability of information of public and private recreational facilities.
28	2.7	When data from other sites are used to characterize the Calvert Cliffs site, discuss why the data are representative.
29	2.7	Given the X/Q values in Table 2.7-115, what X/Q value was used for the 0 to 2 hour period at the EAB and for 0 to 8 hr period at the LPZ?
30	2.7.2	List all PSD Class I areas within 100 mi of the Calvert Cliffs site.
31	2.7.3.1	What is the probability of a tornado striking the site?
32	2.7.6; 7.1	Discuss estimation of site-specific short-term dispersion factors. 2.7.6 refers to 7.1; 7.1 refers to 2.7.
33	2.7.6	Describe what model options were used, not what options exist.
34	2.7.6	Provide EAB and LPZ boundaries.
35	3.4.1	Table 1.3-1 presents the necessary Federal, State, and local permits. Discuss the status of the NPDES permit and 316(a) and (b). (Cross reference with HP-1[(a)])
36	3.4.2	Provide detailed discussion or figures on the bathymetry of the discharge, although a general bathymetry figure is provided in Fig. 2.3.1-27. Provide the relationship of the discharge location to the thalwag and water surface depth.
37	3.4.2	Provide a discussion of the impacts of de-icing (Section 3.4.1.3.2), as there is a potential issue with icing in the past (page 3.4.-3). Fig. 3.4-(4-5) hard to read fine print, so please clarify. Dredging may be required to maintain the channel invert elevation for the intake, so provide a discussion associated with this potential impact. (Cross reference with HP-1[(a)])
38	3.5	Provide principle release points and relative location of receptors.
39	3.6.1	Table 3.6-1 presents treatment system processing chemicals, but does not present the chemicals in the treatment system that these processing chemicals are being used to treat. What are the chemical levels anticipated in the liquid waste streams for CWS, ESWS, etc.? (Cross reference with HS-35[(a)])

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40	3.6.1	Given some perceived potential inconsistencies in the report, provide the discharge rates associated with the waste streams or refer to figures and tables such as Figure 3.3-1 and Table 3.3-1. (Cross reference with HS-3, 10, 11, 12, 23, 24, 25, 29, 31, 36, 40, 45[(a)])
41	3.6.2	Provide procedures for offsite disposal of sanitary waste.
42	3.6.2	Figure 3.3-1 and Table 3.3-1 report 20 gpd from the Waste Water Treatment Plant for normal operations. Section 3.6.2 page 3.6-2 reports 19,500 gpd during construction activities. Page 3.6-2 and Table 3.6-3 suggest 19,500 gpd during normal operations. This perceived inconsistency needs to be clarified. (Cross reference with HS-34[(a)]) [Table referencing appears out of order. Table 3.6-7 comes before Table 3.6-2]
43	3.6.3	Provide applicable Federal, and State atmospheric emission standards.
44	4.1.1	What is the status of the consistency determination for the proposed project by the Maryland Department of the Environment under the Coastal Zone Management Act? If no application has been submitted, please specify the planned date of submittal.
45	4.1.1	What is the status of approval by the Chesapeake Bay Critical Area Commission for the proposed project?
46	4.1.1	Does Constellation/Unistar plan to conduct any preconstruction activities for Unit 3 that do not require NRC authorization? (LWA rule, ESRP 4.1.1)
47	4.1.1	Does Constellation/Unistar plan to submit an application to NRC for a limited work authorization? (LWA rule)
48	4.2.1	The Surficial Aquifer is primarily tapped by irrigation wells and some old farm and domestic wells. Not widely used as a potable water supply (pp. 4.2-2, 2.3-36). How is removing a good portion of the Surficial Aquifer going to impact the water resources and water availability to the irrigation wells and old farm domestic wells? Bio-retention ditches are designed to allow for runoff to infiltrate. Recharge areas for the Surficial Aquifer will shift, slightly, and the amount of recharge may increase. What is the shift, and how much more infiltration is anticipated? This will be controlled by NPDES permits. (pp. 4.2-7). How will this increased infiltration impact on St. Johns Creek and the wetlands? (Cross reference with HI-1, HS-14[(a)])
49	4.2.1.1	Section 4.2.1.1 notes that streams are typically fed by springs and seeps. The Surficial aquifer is replenished by precipitation-generated infiltration {Section 2.3.1.2.2.1, pg 2.3-13}. Provide an analysis of how construction activities, associated with the diversion of runoff, will impact streams and wetlands, other than noting that a State discharge permit will protect the natural resources. (page 4.2-(1-2); 4.2.1.4 page 4.2-5; 4.2.1.5 page 4.2-6) (Cross reference with HS-13, 19[(a)])
50	4.2.1.5	Wetlands are described as the reason for a MODERATE surface water impact; yet no wetlands analysis is provided to justify the impact on the wetlands or this conclusion. (page 4.2-6) (Cross reference with HI-1, HS-9, HS-18, HS-19[(a)])
51	4.2.2	A quantitative analysis assessing dredging activities around the new intake and discharge structures has not been addressed, although this is to be covered by the permitting process. Likewise, construction activities associated with road construction, laydown areas, sedimentation basins, etc. are also to be covered by the permitting process. Provide these analyses. (Cross reference with HP-1, HS-13, HS-19[(a)]) Bio-retention ditches are designed to allow for runoff to infiltrate. Recharge areas for the Surficial Aquifer will shift slightly, and the amount of recharge may increase. What is the shift, and how much more infiltration is anticipated? This will be controlled by NPDES permits. (pp. 4.2-7). How will this increased infiltration impact St. Johns Creek and the wetlands? (Cross reference with HP-1, HS-

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		13, HS-19[(a)])
52	4.2.2	Construction of Unit 3 will take approximately 68 months. During years 1 through 4, the "water for construction will be supplied from existing CCNPP Units 1 and 2 groundwater production wells and from offsite sources as required." The desalinization plant would supply water needs for years 5 and 6. Groundwater appropriations (permits) allow for 450,000 gpd with a limit of 865,000 gpd. Current average use by Units 1 and 2 is 387,000 gpd. Unit 3 average water demands will be 360,000 gpd [supplied by the Aqui Aquifer (pp 4.2-12)] with a peak demand of 1,728,000 gpd. Subtracting the current average (387,000 gpd) use from the permitted appropriation (450,000 gpd) and factoring in the needs for Unit 3 (360,000 gpd) leaves an average short-fall of 297,000 gpd (450,000 - 387,000 - 360,000). Because no information was provided, if one assumes that the current limits for Units 1 and 2 are equal to or less than the permitted appropriation (865,000 gpd) and factoring in the peak needs of Unit 3 (1,728000 gpd), then the peak water shortfall for Unit 3 will be less than 1,728,000 gpd. It is noted that the desalinization plant would provide up to 1,750,000 gpd, but this would be for years 5 and 6. For construction years 1 through 4, it is unclear 1) where all the water needs for Unit 3 will be coming from, 2) what impacts permitted pumping rates will have on the aquifer supplying the water, if the pumpage is held to the current permitted limits, 3) how permitted pumping rates will impact water resources and other users of the water in the same aquifer, and 4) exactly how the water needs will be met. (Cross reference with HS-7[(a)])
53	4.2.2	It is noted that impacts to groundwaters are "SMALL." Under the construction phase, the final elevations associated with the switch yard, turbine building, and reactor area will be ~85 ft, (Pg 4.2-13). Figures 2.3.1-(38-39) indicate that most of the vadose zone (and hence recharge surficial area) would be removed. The Surficial Aquifer water table sits near the 78- to 85-ft level [Fig 2.3.1-(42-45)]. To what degree could removal of a good portion of the Surficial Aquifers vadose zone, coupled with increased impervious zones, vegetation removal, etc., impact recharge to the wetlands and other water resources? (Cross reference with HI-1, HS-13, HS-19[(a)])
54	4.2.2	It is generally alluded to that the actual calculations assessing the impacts of proposed construction activities will be addressed in construction permits. For example, pg 4.2-10 notes that a quantitative calculation and evaluation of the construction effluents and runoff will be done as part of the state construction permit process. Provide quantitative impacts associated with surface water (e.g., bio-retention and storm water basins, dewatering, effluent discharges, wetland impacts, increased runoff volume and velocity, etc.) and groundwater (e.g., Surficial Aquifer recharge, local irrigation wells, salt-water intrusion, subsidence, etc.) alterations. (Cross reference with HI-1[(a)])
55	4.2.2	Impacts to surface water quality downstream of the construction site is deemed "SMALL" due to BMPs (pg 4.2-14). Provide a quantitative analysis to identify when SMALL becomes MODERATE. (Cross reference with HI-1[(a)])
56	4.3.1.3	Provide total wetland area within each assessment area.
57	4.3.2	Identify potential downstream (i.e., offsite) impacts of plant installation; include potential ecological impacts of organic debris addition (mentioned in Section 4.2.2.7) to streams on site and downstream. Provide an evaluation of the potential downstream ecological effects on lower Johns Creek and St. Leonard Creek of the removal of two of the main headwater sources for Johns Creek. Clarify the status of, and potential impacts to, two downstream tributaries (Branch 4 and Laveel Branch) that are shown as part of an Ecologically Sensitive Area (MD DNR 2004 Lower Patuxent River in Calvert County Watershed Characterization; Map 19).
58	4.3.2	Provide more information about dredging and discharge pipeline installation. Include in this item through item 63 the dredging method and potential for anchor scarring of the benthos.

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59	4.3.2	Describe impacts of the use of larger vessels; pipeline installation methods. With regard to vessels, include information on the potential impacts of prop wash on the benthos near the barge dock and wave run-up on the beach adjacent to the barge dock (including cliff area).
60	4.3.2	Describe specific dredging methods; pipeline installation methods.
61	4.3.2	Describe design conditions and parameters for pipeline installation. Include use of imported fill, if any. With regard to pipeline installation, describe the type and extent of any imported fill material that would be used, including the use of any rock (or similar) fill material to create a “rip-rap” zone to reduce the potential scour footprint from the cooling-water discharge.
62	4.3.2	Describe potential impacts associated with **pile driving**.
63	4.3.2	The ER describes the dredging as occurring within the dedicated intake area. Clarify plans for dredging in the dedicated intake area compared to the barge area SE of the intake area.
64	4.3.2	Provide data on expected chemical concentrations in sediments to be dredged.
65	4.3.2	Provide documentation for the Stormwater Pollution Prevention Plan and the Spill Prevention, Control and Countermeasure Program. During the site tour, it was stated that the stormwater discharge system and retention basins were changing from that described in the ER. Provide the final plans for this system, including information about the nature and locations of the retention basins.
66	4.4.1.1	Provide more information and reference to the baseline on the distribution and the quality of buildings, roads, and recreational facilities to describe construction impacts.
67	4.4.1.2	List state noise limits. List state limits on pile-driving activities.
68	4.4.1.2 and 4.4.1.3	Provide applicable federal and/or state noise and dust/particulate standards and relate impacts to these standards.
69	4.4.1.2 and 4.4.1.3	Provide more detail on types of measures/actions that will be taken to maintain impacts within “regulatory limits.”
70	4.4.1.3	Provide additional information needed regarding mitigation program (3^{rd} paragraph).
71	4.4.1.5	Provide more complete statement of plans to supplement public facilities and services to support expansion during construction.
72	4.4.1.5	Provide more quantitative basis of traffic flow, capacity, and impacts that led to conclusion and the anticipated reduction due to the mitigation measures presented. It would be useful to relate Tables 4.4.1 (noise) and 4.4.2 (traffic) to baseline to show the anticipated impact.
73	4.4.1.5	Resolve apparent contradiction of this section to statements in Section 4.4.2.9 regarding traffic impacts.
74	4.4.2.3	The discussion assumes a family size of 2.6 (including the in-migrating worker). Most analyses assume 2.6 ADDITIONAL family members. Explain the difference?
75	4.4.2.3	The discussion of additional worker impacts does not include outage workers for 1&2, or operations workers on site during

Item	ESRP/ER Section	Request for Additional Information (including literature citation and data analysis summary)
		construction for 3&4. What will the cumulative impacts be?
76	4.4.2.8	Provide quantification of expected impacts and/or similar construction activities to show levels/numbers of police calls, EMS calls, fire calls, students, and relate them to the baseline.
77	4.4.2.9	Expand the discussion of the following housing effects: upward pressure on all housing prices? Usage of RV parks and campgrounds? Trailer parks? The potential for "crowding out" of tourist places to stay and the resulting effect on tourism?
78	4.4.3	Provide expected environmental and socioeconomic effects (impacts, pathways, comparison to the geographic area) on minority and low income populations. If there are no expected impacts in this category, state this.
79	4.5	Provide a copy of offsite dose calculation manual (ODCM) for Units 1 and 2.
80	4.5	Provide the last 3 years Radiological Environmental Monitoring Operating Report (REOR) for Units 1 and 2.
81	4.5	Provide the last 3 years annual Radiological Effluent Release Report for Units 1 and 2.
82	4.5, 4.5.6	Provide the input code information regarding the location of and number of construction workers and other details of collective dose calculations (see 104).
83	5.2.1	Although the ER discusses flood mitigation activities, provide an analysis that describes the ramifications of the designs and what situations would need to occur for the designs to move from a SMALL to a MODERATE problem. These include flood handling capability of the floodplain, flow and circulation patterns, dredging operations, erosion subsidence, thermal plume issues, and sediment transport. A universal theme is that these analyses would be part of the permitting process. The specific analysis is needed for the EIS. (Cross reference with HI-1[(a)])
84	5.2.1	The arithmetic difference (18,386 gpm) between Chesapeake Bay withdrawals (37,778 gpm Table 3.3-1) and the effluent discharge to the Chesapeake Bay (19,426 gpm Table 3.3-1) does not appear to be equivalent to the CWS & ESWS Evap and drift (17,354 gpm, 940 gpm, 39 gpm, and 2 gpm), and Fire, portable, sanitary (20 gpm, 3 gpm), which totals 18,358 gpm. (Cross reference with HS-31[(a)])
85	5.2.2	The discharge levels associated with Unit 3 are very small when compared to those associated with Units 1 and 2, so expected problems from Unit 3 are not anticipated. Provide analyses associated with discharges to the Chesapeake Bay substantiating negligible impacts, subject to Federal, State, and local permitting processes
86	5.2.2	Units 1 and 2 sampling indicate that there are minimal toxic impacts to organisms (pg 5.3-10). Provide an analysis to demonstrate how SMALL water quality impacts are. For example, if one performs a very simple calculation using the numbers provided in the ER, one can come up with crude dimensions needed to dilute the expected Total Dissolved Solids (TDS) concentrations to the Secondary Maximum Contaminant Level (SMCL). From Table 2.3.1-14 the average velocity in Chesapeake Bay is 1.7 knots (2.867 ft/s). From Figure 2.3.1-(12-13, 18-19), a lower but realistic constant temperature thickness is 5 ft. TDS release is 20,000 mg/L (pg 5.2-7) with a discharge rate of 23,227 gpm (pg 5.2-7). The U.S. EPA (SMCL for TDS is 500 mg/L. To dilute the TDS concentration to the SMCL, a width of water approximately equal to 144 ft would be required (23227 gpm / 7.48 gal/ft^3 / 60 s/min x (20,000/500) / 2.867 fps / 5 ft). (Cross reference with HI-1, HS-41[(a)])
87	5.3	Clean Water Act Section 316(a) regulates the cooling water discharges to protect the health of the aquatic environment, yet this regulation is not referenced in Table 1.3-1. Explain. (Cross reference with HS-31[(a)])

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Item	ESRP/ER Section	Request for Additional Information (including literature citation and data analysis summary)
88	5.3	Clean Water Act Section 316(b) regulates cooling water intake structures to minimize environmental impacts associated with location, design, construction, and capacity of those structures, yet this regulation is not referenced in Table 1.3-1. Explain. (Cross reference with HS-21[(a)])
89	5.3.1.1	Discussion on the intake impacts is presented. Provide an analysis of the impacts associated with dredging and discharge. (Cross reference with HS-12, 41[(a)])
90	5.3.1.2	Provide quantitative data on characteristics of the water in the retention basin.
91	5.3.1.2	What are the references for the impingement survival studies mentioned on page 5.3-4?
92	5.3.1.2	Provide detailed data on Impingement and entrainment and the results of any studies so that the amount attributable to Unit 3 can be estimated. Where the analysis is based on data from 1995 or earlier; justify applicability or provide new data in light of the changes that have occurred in the Chesapeake Bay ecosystem since those impingement and entrainment data were collected.
93	5.3.1.2	Estimate actual aquatic losses expected from Unit 3. Justify applicability of old data or provide new data in light of the changes that have occurred in the Chesapeake Bay ecosystem since those data were collected.
94	5.3.2.2	Provide information about the expected concentrations to be discharged into Chesapeake Bay.
95	5.3.2.2	Provide the approximate size of the expected scour area. Also provide information about the soft-bottom community that will be lost and the hard-bottom one that will replace it. Justify applicability of old data (1979) or provide more recent data. Recalculate estimates of scour based on recent grain-size data and re-evaluate trophic impacts based on recent faunal data, or justify the applicability of the answers based on old data.
96	5.3.2.2	Provide impacts of scour based on more recent data; trophic impacts of community change.
97	5.3.2.2	Provide relative abundance of important species in the discharge zone and provide the substrate at and in the vicinity of the discharge location.
98	5.3.2.2	Provide potential impacts to plankton, listed as an important “species.”
99	5.3.3.1.1	Provide additional justification for dismissing ESWS cooling tower impacts. Are the impacts important on site?
100	5.3.3.1.2	Provide information on the distribution of plume lengths and heights.
101	5.3.3.1.4	Justify using BWI meteorological data to represent Calvert Cliffs rather than data from Patuxent River Naval Air Station.
102	5.3.3.1.6	The section does not include sufficient information on land use in the vicinity of the plant to draw the conclusion in the last sentence. Complete the logic chain.
103	5.3.3.1.7	What is the rationale for suggesting that the impacts of cooling tower impacts at Calvert Cliffs would be similar to those at Chalk Point and Hope Creek, given the differences in release heights. Does the statement that there have been no impacts at the two sites mean that there have been monitoring programs and no impacts observed, or that no impacts have been observed because there have been no monitoring programs?
104	5.4	Provide input and out files for LADTAP, GASPAR II.

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Item	ESRP/ER Section	Request for Additional Information (including literature citation and data analysis summary)
105	5.4.1	Provide data on transit time of liquid effluent to receptors.
106	5.4.1.1	Provide data on mixing ratio/Dilution factors for liquid effluent.
107	5.4.1.3	Provide process used to determine occupational doses would be minimal.
108	5.4.2	The data on collective population doses, population distribution and meteorological dispersion (X/Q or D/Q) are currently insufficient to reconstruct calculations. Provide remaining data.
109	5.4.2	Provide input decks for code of meteorological joint frequency data.
110	5.4.3	State how were collective population doses determined. Provide references.
111	5.4.3	What are natural radiation sources at the location of the site? (This should be in the REMP.)
112	5.5.1	Identify the Chesapeake Bay water-quality release criteria for domestic, industrial and agricultural uses.
113	5.5.2	Identify disposal plans for mixed waste (e.g., to a permitted mixed-waste disposal facility, shipment to treatment facility, or storage onsite).
114	5.6.2	Provide support that shows the potential impacts to freshwater habitats and species from increased temperatures from reduced shade cover and runoff of defoliants and herbicides related to transmission lines will be “minor.”
115	5.6.2	Identify specific water bodies that may be affected by transmission lines.
116	5.7	Are there any features of Unit 3 that could result in environmental impacts substantially different from those described by NRC for model LWRs?
117	5.8	Identify the socioeconomic impacts of transmission line operations.
118	5.8.1.4	Provide additional information needed regarding mitigation programs (4th paragraph).
119	5.8.1.5	In 5.3.3.1.x, there is no discussion of plume persistence; provide the basis for the statement that the directions change frequently (last paragraph).
120	5.8.1.6	Provide applicable Federal and/or State standards related to air quality.
121	5.8.1.7	With the exception of drift eliminators, proposed mitigation methods are not discussed – only statements that permit requirements and standards will be complied with, but not the options or specifically how they will be complied with.
122	5.8.2	Provide quantification of estimated impacts and/or similar construction activities to show levels/numbers of police calls, EMS calls, fire calls, etc. relative to baseline.
123	5.8.2	Provide a statement on plans to help transition public facilities from construction to operation and agencies responsible for this adjustment. The discussion of indirect jobs in the entire section is unclear. What is the number of indirect jobs? How many will be taken by local residents versus in-migrating family members? Check the chapter for consistency in discussion.
124	5.8.2	Need to more clearly state estimated income and tax revenue related to baseline.

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125	5.8.2.2	Define "direct" and "indirect household" and explain the use of the concepts in the analysis. Describe how direct and indirect employees and residents relate to the concepts of direct and indirect households.
126	Table 5.8.2-1	Table 5.8.2-1 indicates 2.6 additional family members per in-migrating worker, clarify analyses of socioeconomic impacts that do not use 2.6 additional family members. Define "indirect workforce" and "unmet indirect jobs." Does the analysis assume a second round of in-migration? If yes, explain basis for assuming the second round.
127	Table 5.8.2-1	What is the basis for assuming indirect jobs will be filled by the spouses of in-migrating workers?
128	5.8.2.4.2	Revenue generating property is typically valued by its revenue, not its depreciated construction cost. Confirm your assumptions are correct and provide references.
129	5.8.2.7.2	The 408 new households discussed appears to be in conflict with 5.8.2.3. Resolve and explain.
130	5.8.3	Provide sections/statements on environmental and socioeconomic effects on minority and low income populations – impacts, pathways, comparison to the geographic area. If there are no expected impacts in this category, state this. Provide analytical maps of the roads in the ROI and an overlay map of roads and the minority / low-income census tracts.
131	5.8.13 and 5.8.14	Relate noise and emissions to baseline to show impacts.
132a	6.1	Provide a map of the bathymetry of water body before and after construction activities.
132b	6.1	Only one thermal monitoring station is proposed, at the Unit 3 discharge structure outfall. Describe the monitoring equipment and whether it is similar to Units 1 and 2.
133	6.2	Sample program data are presented without justification of data selection, e.g., sample sites, frequency, sample sizes, measuring durations. Provide references for same.
134	6.3	Section 6.3 page 6.3-1 notes that biological monitoring stations are discussed in Section 6.1, but no discussion is presented. Please provide.
135	6.3	It is stated that on-site construction monitoring will be part of the NPDES permitting process. Also, Chesapeake Bay monitoring will be at the intake and discharge structures and part of the ACOE 401 permit process (Section 1.3) to ensure compliance with applicable water quality and sediment transport requirements. Provide a description of the monitoring stations.
136	6.3	Although revisions to the observation well network during construction will be implemented to ensure that the resulting changes in the local groundwater regime will be tracked (pg 6.6-3and 5), provide information on the well monitoring network during construction.
137	6.3	Hydrological monitoring during operation will be designed, as needed, but a monitoring plan has not been developed (pg 6.3-5). Provide a monitoring plan.
138	6.4; 6.4.2.5	What is the rationale for not including meteorological and climatological data from Patuxent River Naval Air Station?
139	6.4.2.3	Is the temperature difference measured or calculated from the temperature measurements? If it is calculated, how is the required

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		accuracy achieved?
140	6.4.2.7	Justify not including a humidity measurement in the pre-operational meteorological monitoring program.
141	6.6	As noted in Section 6.3, surface water monitoring related to construction activities will be part of the permitting process. Groundwater monitoring will be determined at a later date, but prior to construction activities. Surface water operational monitoring, including intake and outfall structures and discharge locations, will commence from first use of Chesapeake Bay water and first discharge, as covered by the permitting process. Provide information on the chemical monitoring programs. (Cross reference with HP-1[(a)])
142	7.1	Are the radionuclide inventories used to generate DBA source terms consistent with the inventories used to estimate consequences of normal operations?
143	7.1	Are the distances to the EAB and LPZ from the center of containment or the shortest distance from potential release points?
144	7.1	(4^{th} paragraph) The EAB boundary of 500 m is not consistent with the EAB boundary shown in Figure 3.1-1. Clarify.
145	7.1	Table 7.1.5 indicates that a single X/Q value was used for all time periods. Provide a realistic assessment using the appropriate X/Q values for each of the time periods, or provide a justification for departing from long-standing NRC guidance on DBA dose calculations.
146	7.1	The DBA analysis (and Table 7.1-1) considers DBAs that are listed in NUREGs 0800 and 1555 and Regulatory Guide 1.183. The DBAs considered in these documents are not based on the US EPR design. Are there any potential DBAs that might be specific to the US EPR design that are not listed in the NRC guidance?
147	7.1	Tables 7.1-2 and 7.1-3 give source coolant source terms in terms of coolant concentrations. Provide the source terms in terms of activity (Ci or Bq) released by isotope. Or, alternatively, provide the mass of coolant released to the environment for each DBA involving coolant releases.
148	7.1	Footnote c of Table 7.1-5 states that the 96 to 720 hr X/Q ratio was used to calculate the dose contribution in each of the 4 periods. Justify the use of this single ratio rather than the appropriate ratio for each time period.
149	7.1	Table 7.1-6, Steam System Piping Failure. Justify using the 0 to 9 hr time period for the LPZ dose calculation. What is the justification for using the 8 to 24 hr X/Q ratio for the 0 to 9 hr period? Provide LPZ dose increments for the 0 to 8 and 8 to 24 hr time periods. Provide isotopic source terms for each period. Discuss the significance of the last 2 sections of this table to the ER. Are they DBAs or severe accidents?
150	7.1	Table 7.1-7. Feedwater System Line Break. Discuss the significance of the 1^{st}, 4^{th}, and 5^{th} sections of the table. Justify using the 0 to 2 hr X/Q ratio for the LPZ for the 0 to 8 hr period.
151	7.1	Tables 7.1-8, 7.1-10, 7.1-13. Justify using the 0 to 2 hr X/Q ratio for the LPZ for the 0 to 8 hr period.
152	7.1	Table 7.1-9. Failure of Small Lines Carrying Primary Coolant Outside Containment. The doses are for a 2-hr time period because the X/Qs used to calculate the X/Q ratios are for a 2-hr time period. Why wasn't the 0 to 8h period used for the LPZ dose calculation?

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153	7.1	Table 7.1-11. Provide dose increments for each of the 4 standard time periods for LPZ dose calculations. Justify using the 96 to 720 hr X/Q ratio for the LPZ for all time periods.
154	7.1	Table 7.1-12. LPZ dose should be calculated for the 0 to 8 hr time period.
155	7.1	General. Provide isotopic source terms by release period for each accident.
156	7.1	General. The X/Q ratios used to calculate doses should be based on the site-specific X/Q for the appropriate period (0 to 2 hr for the EAB, and 0 to 8, 8 to 24, 24 to 96, and 96 to 720 hr for the LPZ) and the X/Q used in the DCD dose calculation regardless of period. This may mean the time periods for site-specific X/Q and for DCD X/Q are not the same. The objective is to remove the DCD X/Q, whether correct or not, and replace it with the appropriate site-specific X/Q.
157	7.1	General. Indicate the 2-hr period of maximum release rate for all releases extending beyond 2 hr.
158	7.2	Section 7.2, third paragraph. Provide a reference to the US EPR PRA and indicate where it can be reviewed.
159	7.2	How do the release categories relate to source terms? Are the source terms for release categories within each end state the same, or at least consistent?
160	7.2	Provide information on how the site-specific input files to MACCS were created and the sources of information used to create, update, or modify all files used. Provide electronic copies of all input and output files for the MACCS2 runs.
161	7.2	[Not Applicable]
162	7.2	Are the meteorological data used in the MACCS2 analysis consistent with the meteorological data used to calculate X/Q values for routine releases and releases for DBAs? If not, why not? Justify using different meteorological data sets for different purposes. Provide text of realistic X/Q analyses.
163	7.2	Page 7.2-2. Are the population distributions used in the MACCS2 analysis consistent with those used in the socioeconomic sections? If not, why not? Justify using different population distributions for different purposes. Justify using a larger growth rate than one based on observed data. Justify using a larger population growth rate than observed in a severe accident analysis that is to be used in an environmental review under NEPA (realistic, not conservative).
164	7.2	Page 7.2-3. 1st sentence, 1st paragraph. What release heights were used for the various event sequences? Were these heights included in the MACCS2 analyses? Are the prerequisites for an elevated release met for each event sequence?
165	7.2	Page 7.2-3, 2nd paragraph. Indicate the contributions to CDF from internal and external initiating events in addition to providing the total CDF. How were the CDFs from external initiating events evaluated? What is the likelihood that all significant external initiating events have been identified and evaluated without an examination of the plant as built? For each RC, indicate internal, external event contributors to CDFs vs. total (similar in detail to ESP EISs).
166	7.2	Page 7.2-3. Last Sentence, 2nd paragraph. How are person-rem per year and dollars per year combined? Identify method used.
167	7.2	Page 7.2-4. Last sentence, 1st paragraph. Provide the basis for the statement that the CDF for the US EPR is less than the CDFs for the current U.S. nuclear fleet.

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168	7.2	Table 7.2-3. What is the definition of Release Category Frequency? What is the source of the Release Category Frequencies in this table. How do they relate to the CDF. How can a release category that has 0.00 E+00 yr^{-1} frequency result in a non-zero risk, if risk = frequency X consequence? Provide the missing frequencies. Why is the release category frequency for RC101 = 0.0? Shouldn't RC101 be about the same as or larger than any of the other release category frequencies? Provide CDF as well as release category frequency. (Table to be corrected; use corrective action program)
169	7.2	Section 7.2.2.1. Provide estimates of the average individual risk of an early fatality for individuals within 1 mi of the reactor and the average individual risk of latent cancer fatalities for individuals within 10 mi of the reactor. (See Commission's 1986 Policy Statement, 51 FR 28044. These values can be obtained from MACCS2.)
170	7.2	Section 7.2.2.2. Have surface water sources for public water systems within 50 mi of the reactor been identified? Do the drinking water ingestion doses calculated by the MACCS2 code adequately account for these water sources?
171	7.2a	Justify the assertion that the aquatic food ingestion risk is essentially the same as the air pathway dose, given the estimated uninterdicted aquatic food risk (55 person-Sv Ryr^{-1}) in the GEIS Table 5.16 for the current Calvert Cliffs units. Provide a quantitative estimate of the risk associated with uninterdicted aquatic food ingestion. Consider the relative magnitudes of the source terms, the large release core damage frequencies, and any changes in aquatic food harvest.
172	7.2	Section 7.2.2.2. Provide water ingestion doses by release category as part of Table 7.2-3 (new column).
173	7.2	Page 7.2-5. Second paragraph, last sentence. The conclusion in this sentence does not follow from information contained in the ER. Doses are not a function of CDF. Provide sufficient information to demonstrate that risks associated for groundwater releases from a US EPR severe accident would be lower than they are for the current CCNPP Units 1 and 2.
174	7.2	Section 7.2.3. First paragraph. What is the basis for assuming the release fractions listed in Table 7.2-2? Discuss this in detail.
175	7.2	Table 7.2-2. Provide release fractions by isotope or element rather than by chemical compound. The ER does not contain sufficient information to convert the values in Table 7.2-2 to isotopic or element release fractions for Cs and Rb. Are the values from Table 7.2-2 used in MACCS2? If so, how are they entered?
176	7.2	Section 7.2.3, third paragraph, second sentence. Information presented in the ER so far is not sufficient to support this conclusion related to risk. If the conclusion is correct, provide sufficient information to support it.
177	7.2	[Same as 176]
178	7.3	Section 7.3.1, third paragraph. Why were cutsets that account for approximately 50% of the CDF not evaluated? How was the total CDF determined? How many cutsets were there? What is a cutset?
179	7.3	Section 7.3.1, fourth paragraph. How does looking at cutsets that contribute only about 50% of the CDF establish that all possible design alternatives for the US EPR were addressed?
180	7.3	Section 7.3.1, page 7.3-2, 5th bullet. Justify the use of "Not required for design certification" as an appropriate screening category for SAMDAs in the environmental report. Re-evaluate each SAMDA placed in this category for the COL or provide a justification for not doing so? Explain how this category can be appropriate for CCNPP Unit 3.
181	7.3	Page 7.3-3, second and third lines. What is the basis for the assumption that fire risk is as large as or larger than seismic risk? If

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		this is only an assumption, what is the basis for claiming that the assumption is conservative? Explain how this assumption is true for all locations.
182	7.3	Page 7.3-3, second paragraph. Explain how the $150,000 minimum implementation cost was determined. Explain how implementation costs estimated for retrofit SAMDA are appropriate for use in evaluating a similar SAMDA on a design that is not complete and has not been built.
183	7.3	[Not applicable]
184	7.4	Provide information about maximum individual dose estimates for transportation workers, public onlookers, and the public along the route. Exposure scenarios (that is, dose rates, distances, and exposure times) or alternative methods and data should be provided so that the results can be reproduced.
185	7.4	Provide output for TRAGIS code and RADTRAN (input and output).
186	8.0	Most substantive information was deferred or another “process” was referenced. Provide copies of those plans/processes that say there is a need and show specifically how the proposal addresses it.
187	8.0	Address current strategies in MD (applicants and others) to establish Demand Side Management strategies to reduce future demand.
188	8.0	Chapter 8 stresses the Maryland’s goal to reduce reliance on imported power. This needs to be reconciled with the Chapter 9 decision to establish two of the three alternative sites in Upstate New York.
189	8.4	[Not applicable]
190	8.4	Provide any significant new developments since submittal of Rev. 0 of the ER relating to need for power.
191	9.2.2	Section 9.2.3.1.1 of the ER states that Maryland is planning to participate in the Regional Greenhouse Gas Initiative, which would cap CO_2 emissions from power plants unless the plants obtain emission offsets from qualified CO_2 emission offset projects. What is the current status of this Initiative?
192	9.2.2	The third bullet on p. 9.2-8 of the ER refers to a 1999 DOE study. The study is not in the reference list in section 9.2.5 of the ER. Are there any conclusions from the study that are relevant to the COLA? If yes, provide appropriate citations to the study.
193	9.2.2	Provide the (CEC, 2003) reference on p. 9.2-11 of the ER, which is not in the reference list in section 9.2.5 of the ER.
194	9.2.2	Hypothetically, what would be the best way to transport coal to a new coal generation facility sited at the CCNPP site?
195	9.2.2	Where would the nearest source of natural gas be for a hypothetical natural gas-fired powerplant located at the CCNPP site?
196	9.3	What is the region of interest for the COLA? Clarify the discussion of the region in Section 9.3.1.1 and Section 9.2.1.2 of the ER which states that the region of interest is Maryland.
197	9.3.1	Explain how cultural resources were considered in the site selection process. Provide references.
198	9.3	Section 9.3.1.2 of the ER is not clear on what candidate areas were considered. Provide more specific detail of candidate area and potential site selection process.

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199	9.3	How was the list of potential sites narrowed down to the four candidate sites? Provide a detailed discussion of the process.
200	9.3	Section 9.3.1.1 of the ER is not clear on what specific potential sites were considered. Provide a list of the potential sites that were considered and discuss how they were selected. Table 9.3-5 in the ER implies that the only potential site considered in addition to the four candidate sites is a generic greenfield site.
201	9.3.2	How much additional land would need to be purchased at the Crane site for siting a new nuclear plant? Would obtaining additional land be a reasonable possibility given that the surrounding land has been designated as a critical area under the Chesapeake Bay Critical Area statute and that the adjacent land is predominantly wetlands and is zoned for resource conservation (section 9.3.2.1.1 of the ER)?
202	9.3.2	Does the Crane Generating Station combust oil as well as coal?
203	9.3.2	Section 9.3.3 of the ER states that the Crane Generating Station would have to be dismantled to allow construction of a new nuclear plant. Is the Crane Generating Station currently scheduled for dismantlement? Section 9.2.1.2 of the ER does not list the Crane Generating Station as slated for retirement.
204	9.3.2	Page 9.3-2 of the proposed revision of ESRP 9.3 calls for the candidate sites "to be among the best that can be reasonably found for the siting of a nuclear power plant." Explain how the Crane site fit within this criterion given that (1) an existing generating plant would have to be dismantled before a new nuclear plant could be built, and (2) the additional adjacent land that would be needed to site a new nuclear plant at the Crane site has been designated as a critical area under the Chesapeake Bay Critical Area statute, is predominantly wetlands, and is zoned for resource conservation (section 9.3.2.1.1 of the ER). Clarify how this zoning is consistent with the proposed revision to ESRP 9.3, which states that to be a candidate site, there should be no preemption of or adverse impacts on land specially designated for environmental, recreational, or other special purposes.
205	9.3.2	Section 9.3.2.2 of the ER states that collocating a new reactor with another reactor is advantageous when compared to a greenfield or brownfield site because the new reactor would be able to take advantage of the infrastructure that serves the existing reactor. Would a new reactor at the Crane brownfield site also be able to take advantage of existing infrastructure including transmission lines?
206	9.3.2	Explain the cultural background and known cultural resources at the alternative site locations at a reconnaissance level. Provide references.
207	9.3.2.1.3 (Crane)	Provide data on faunal diversity in the tidal creeks at Crane. Is diversity greater there than at Calvert Cliffs? Provide data to support the contention that aquatic impacts from cooling water intake I&E and thermal effects would be MODERATE or LARGE when the same discharges would have only SMALL effects at Calvert Cliffs.
208	9.3.2.1.3	Identify construction impacts on aquatic resources—is there dredging required, pipeline installation? What transmission system effects are likely?
209	9.3.2.1.3	Provide the water impacts section for the Crane Generation Plant. The text provided is a repeat of air quality.
210	9.3.2.1.9	Provide census block level populations and key economic aspects of the area. This holds for all discussion of EJ at the alternative sites. Provide consistent years and populations for the comparisons of populations at the different sites.

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211	9.3.2.2.2	Verify that the existing Nine Mile Point site is sufficiently large to accommodate a new nuclear unit.
212	9.3.2.2.2.3 (NMP)	Provide the water impacts section for Nine Mile Point Plant. The text provided is for air quality.
213	9.3.2.2.2.3	Provide information about cooling water intake and discharge parameters including the extent of the thermal plume. Would nuisance species (e.g., zebra mussels) likely be a problem?
214	9.3.2.2.2.3	[Not applicable]
215	9.3.2.2.2.3	Construction impacts on aquatic resources need to be better identified—would dredging be required, pipeline installation? Also, transmission system effects?
216	9.3.2.2.3	Verify that the existing Ginna site is sufficiently large to accommodate a new nuclear unit.
217	9.3.2.2.3.3 (Ginna)	Provide water impacts related to Lake Ontario.
218	9.3.2.2.3.3	Provide information about cooling water intake and discharge parameters. What is the extent of the thermal plume? Would nuisance species (e.g., zebra mussels) likely be a problem?
219	9.3.2.2.3.3	Construction impacts on aquatic resources need to be better identified—would dredging be required, pipeline installation? What would the transmission system effects be?
220	9.3.2.2.3.3	Describe the cumulative effects (of land use, hydrological and ecological resources, radiological releases) of adding a new plant to the existing one.
221	9.3.3	Section 9.3.3 states that terrestrial impacts at the Calvert site would be no greater than at the alternative sites. Table 9.3-5 shows that potential terrestrial impacts at the Crane site would be less than at Calvert. Explain the difference in terrestrial impacts between the Crane site and the Calvert site.
222	9.3.3	Table 9.3-5 of the ER states that the greenfield site is a candidate site. Section 9.3.1.2 of the ER states that the use of a greenfield site is not carried forward as an alternative site and that only the three existing nuclear sites plus the Crane site were considered as candidate sites. Clarify the use of a greenfield site as a candidate site.
223	10.1	Table 10.1-1: Housing is not a mitigation measure for impacts on public services. Provide separate listing of impacts and mitigation measures for housing and public services.
224	10.1	Some impact areas list minor impacts that remain after mitigation; however, the table states that "no unavoidable adverse impacts" occur. (e.g., Socioeconomic, Table 10.1-1, pg. 6) List residual impacts remaining after mitigation measures have been taken as Unavoidable Adverse Impacts or justify an alternate treatment of the residual impacts.
225	10.1	Coverage of topics between tables appears unbalanced. Example: worker traffic for operations is listed, but not for construction. Identify, as applicable, the same range of impacts for both the construction and operations phases. Reconcile differences between Chapters 10 and 5 in mitigation for operations effects on public services.

Calvert Cliffs COL – ESRP-Based RAIs for Drafting EIS

Item	ESRP/ER Section	Request for Additional Information (including literature citation and data analysis summary)
226	10.2	Provide a discussion of transmission line impacts discussed in Chapter 5.
227	10.2	Provide data on US reserves of materials used in construction. Include data on major materials not included in the list, such as copper, stainless steel, iron, etc.
228	10.4.1.2	"The evaluation indicated that neither a coal-fired nor a gas-fired facility would appreciably reduce overall environmental impacts relative to a new nuclear plant." This seems to conflict with the subsequent sentence in the section and with Chapter 9. Explain.
229	10.4.1.3	Provide the criteria used to conclude that Nine Mile Point (360 miles) and Ginna (345 miles) (a) are in "relatively close proximity to the CCNPP," or (b) meet Maryland's goal to reduced reliance on imported electric power stated in Sec. 8.0.
230	10.4	Provide additional monetary values for the cost categories (Table 10.4-1). List the benefits separately from the costs. Identify the baseline assumption made to determine the costs and benefits of operating CCNPP Unit 3.
231	10.5.1	Identify other agency activities in the area and related cumulative impacts of Unit 3 in concert with other stressors in the region.
232	10.5.1	Identify other projects in the region not included in Section 2.8.
233	10.5	Provide the criteria used to calculate the carbon dioxide equivalent emissions avoided by operating CCNPP Unit 3 (page 10.5-6).
(a) Cross referencing to items marked HI, HM, HP, and HS relate to the more detailed version of these questions that were discussed at the site audit and are presented in a separate table.		

Calvert Cliffs COL – More Detailed Version of RAIs for Hydrology Analysis

Hydrology Questions	ESRP/ER Section	Hydrology – Background Followed by Question or Information Need
Hydrology Permit Questions (HP)		
HP-1	2.3.3, 3.3.2, 3.4.2, 3.6.2, 3.6.3 4.2.1, 4.2.2, 5.2.3	All liquid effluent discharges during plant operation would be monitored and regulated by NPDES permits, issued by the State of Maryland Department of the Environment (MDE). References to these NPDES permits appear in Sections 2.3.3, 2.3.3.1.2, 3.3.2, 3.4.2.2, 3.6.2, 3.6.3.2, 4.2.1.2, 4.2.1.7, 4.2.1.8, 4.2.2.3, 4.2.2.5, 4.2.2.11, 4.2.2.12, 5.2.3.1. How many actual NPDES permits are expected to be associated with Unit 3, and which sections pertain to which permits (e.g., effluent water streams, Waste Water Retention Basin, brine, sewerage treatment and sanitary waste, desalinization plant, cooling tower blowdown, stormwater runoff, submerged diffuser releases, intake screen backwash, free available chlorine, free available oxidants, chromium, zinc, biocides, chemical additives, oil, antifreeze, etc.)? What are the anticipated discharges or discharge limits, concentrations, and constituents covered by the permits?
HP-2	2.3.2.2.7	The ER reports that the Maryland Geological Survey (MGS) continues to conduct studies, including modeling efforts, to understand and predict the effects of increasing groundwater demands of the Coastal Plain aquifers within the State of Maryland. New users (or existing users applying to increase its withdrawal) would not be granted a permit if the proposed withdrawal rate is predicted to cause the regional head to fall below the management level. Clarify whether this means that Unit 3 could withdraw and use water from the existing Permit for Units 1 and 2.
HP-3	3.6.3.5	Under Solid Effluents, it is stated that operation of an industrial waste facility for private use at the CCNPP site does not require a permit but must comply with the regulations imposed by the State of Maryland for construction, installation and operation of solid waste facilities. It goes on to note that debris (e.g., vegetation) collected on trash racks and screens at the water intake structure are disposed of as solid waste in accordance with the applicable NPDES permit. Solid "effluents" must comply with regulations (which sounds like a permit situation), and solid "waste" requires a permit. Provide a clear explanation associated with the disposal of solid "wastes/effluents" and identify which wastes are associated with which permits.
HP-4	4.2.1.7	On page 4.2-7, a Storm Water Pollution Prevention Plan is mentioned to control runoff from construction areas. Provide the anticipated contents and the effective impact mitigation of the Storm Water Pollution Prevention Plan.
Hydrology Impacts (HI)		
HI-1	4.2.1.2	Modifications are proposed to the Surficial aquifer, which potentially impacts Johns Creek discharge pathways. In addition, storm water management modifications to the land surface could potentially redirect the overland runoff from the site to bio-retention and sedimentation basins. The impacts are associated with pre-construction, construction, and operational periods. Provide any qualitative and/or quantitative analyses and assessments that have been conducted to address the impacts to Johns Creek and the Surficial aquifer.
HI-2	4.1.1.1	The ER states that the proposed construction activities will result in the permanent loss, through filling, of approximately 18.6 acres (7.5 hectares) of non-tidal wetland habitat and approximately 48 acres (19 hectares) of non-tidal wetland buffer. The land use impacts to the CCNPP site and vicinity of the CCNPP site from construction of the new unit are identified as being MODERATE, primarily due to the loss of wetlands and wetland buffers, and would require mitigation. Mitigation measures associated with the wetlands and wetland buffers are described in Section 4.3.1.4. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
HI-3	4.2.1.4	Surface water impacts that could receive effluents are summarized as follows: two unnamed streams (Branch 1 and Branch 2);

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Hydrology Questions	ESRP/ER Section	Hydrology – Background Followed by Question or Information Need
		Branch 1; Camp Conoy Fishing Pond and two downstream impoundments; Johns Creek, Branch 3 and Branch 4, and the unnamed headwater tributaries; Goldstein and Laveel Branches of Johns Creek; Lake Davies and two unnamed impoundments within the Lake Davies dredge spoils disposal area; and Chesapeake Bay and Patuxent River. Several impoundments are planned to catch stormwater and sediment runoff from the various construction areas. In Section 4.2.1.5, construction impacts to the existing surface water bodies are summarized as follows: increasing runoff; infilling and eliminating the Camp Conoy Fishing Pond, upper reaches of Branch 2 and Branch 3, and an unnamed tributary to Johns Creek; isolating portions of the upper reach of Branch 1 by construction of the laydown areas; disruption of the drainage in the Lake Davies dredge spoils disposal area with possible impacts on the two downstream impoundments; wetlands removal and disruptions; and possibly increasing the sediment loads into the proposed impoundments and downstream reaches. In Section 4.2.2.2, the hydrologic alterations to groundwater that could result from the project related construction activities are creation of a local and temporary depression in the Surficial aquifer potentiometric surface; disruption of current Surficial aquifer recharge and discharge; hilly, vegetated areas would be cleared and graded potentially increasing runoff; some streams and the Camp Conoy Fishing Pond (impoundment) would be backfilled and construction areas would be covered by less permeable materials and graded to increase runoff into bio-retention ditches; potential changes in locations of or quantity of water produced at springs and seeps could change; stormwater runoff would be directed and concentrated into bio-retention ditches potentially affecting recharge to the Surficial aquifer; additional drawdown in the Aquia aquifer when the water needed for CCNPP Unit 3 construction; potentially shifting of the Surficial aquifer recharge area(s) to the underlying Chesapeake aquifer/confining unit. These impacts to surface water bodies are identified as MODERATE, primarily due to the loss of wetlands and wetland buffers, and require mitigation. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
HI-4	4.2.2.5, 4.2.2.7	The ER states that if contaminants enter the surface water bodies unchecked, there will be a potential for infiltration and subsequent groundwater contamination. If contaminants do enter groundwater, they may impact the quality of water withdrawn for industrial and commercial applications. It is also possible that this groundwater could discharge locally at seeps or springs. Any possible impacts on deeper aquifers would also depend on the infiltrating volume and the hydrologic connection with the Surficial aquifer. In Section 4.2.2.7, if heavy metals or chemical compounds spill and/or wash into surface waters, there could be a direct toxicity to aquatic organisms. These potential pollutant releases could impact aquatic species and in turn affect the recreational aspects associated with fishing, canoeing, or kayaking. The impacts to surface water quality downstream of the construction site are identified as SMALL due to the use of BMPs to control dust, runoff, and spills. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
HI-5	4.2.2.7	Runoff containing saline residue from the spoils could enter the impoundment just southeast of the spoils disposal pile, which is likely in direct hydraulic contact with the Surficial aquifer. Any impact on groundwater quality would probably be minor due to dilution. Little, if any, water quality impacts would be expected if this diluted water were to reach the deeper aquifers. Dewatering for the foundation excavations may increase the oxidation of some sedimentary constituents by placing them in direct contact with the atmosphere. The oxides might have an increased solubility and could migrate down gradient when the potentiometric head is reestablished following construction completion. Possible impacts to the Surficial aquifer water quality are identified as SMALL and decrease with migration and dilution. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
HI-6	4.2.2.8	The ER states that surface water users downstream of the site may experience impacts from potential water quality changes if construction effluent concentrations and volumes are large enough and the release enters directly into a surface water body bypassing the overflow catch basins and retention ponds. The surface water users that could be impacted in the event of a release are those downstream of the CCNPP site along the tributaries flowing to the Patuxent River and Chesapeake Bay. The

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Hydrology Questions	ESRP/ER Section	Hydrology – Background Followed by Question or Information Need
		ER notes that any impacts to the larger surface water bodies receiving the discharge are expected to be minor. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
HI-7	4.2.2.9	The ER notes that the impact of potential increased sediment loads in site runoff during construction will result in SMALL or no impacts to surface water users and affected areas. Given that a good portion of the Surficial aquifer would be removed, provide the basis for the conclusion that the impact is temporary. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
HI-8	4.2.2.9	The ER states that because groundwater from CCNPP Units 1 and 2 onsite wells will be used for construction, there might be impacts on local users that also make withdrawals from the Aquia aquifer. Construction activities are only expected to produce limited and temporary impacts in the Surficial aquifer. Given that a good portion of the Surficial aquifer would be removed, provide the basis for the conclusion that the impact is limited and temporary. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
HI-9	2.3.1	The ER states that the Surficial aquifer is not used as a potable water source in the vicinity of the CCNPP site. Therefore, potential groundwater quality changes will not be expected to have any impact on possible users. Potential impacts to the deeper aquifers are dependant on the nature of the hydraulic connection between aquifers described in Section 4.2.1.1. It is noted that groundwater quality impacts on users of the deeper aquifer users are SMALL due to dilution and other contaminant attenuation effects that could occur along any effluent plume migration path. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
HI-10	5.2.1.2.1	The ER states that construction water use is assumed to be entirely consumptive. Groundwater withdrawals required for construction of CCNPP Unit 3 will be SMALL and temporary, and the effect on the groundwater supply will be SMALL. If the water mass balance demonstrates that water withdrawals appear to be significant with impacts lasting at least four years, identify the qualitative and/or quantitative analyses and assessments that form the basis for this impact level?
HI-11	5.2.1.3	The ER states that once construction is completed, and normal operations begin, it is expected that the streams would experience little ongoing impact. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this conclusion.
HI-12	5.2.2.1.2	The ER states that the primary external impact will be the discharge of cooling tower blowdown water to the Chesapeake Bay. The CCNPP maximum Unit 3 CWS cooling tower discharge is estimated to be 20,200 gpm. Prior to discharge into the Chesapeake Bay, the cooling tower blowdown will be sent to a retention basin, thus reducing thermal impacts to receiving waters. No effect on fisheries, navigation, or recreational use of the Chesapeake Bay is expected. Provide any studies that support the expectation that recreational activity would not be affected.
HI-13	5.2.3.1	The ER states that impacts of chemicals in the permitted blowdown discharge wastewater to the water quality of Chesapeake Bay will be negligible and are not expected to warrant mitigation. Provide qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
HI-14	5.2.3.7	The ER states that a common retention basin would collect cooling tower blowdown and effluent from the proposed desalinization plant. Effluent from the retention basin, which will contain dilute quantities of chemicals and dissolved solids, and be slightly elevated in temperature, will be discharged to Chesapeake Bay within the limits of the site NPDES permit. It is also noted that environmental impacts on water quality during construction and operations for CCNPP Unit 3 would be minimal. When discharged and diluted, this small amount of slightly contaminated water, approximately 0.001% of low flow conditions in

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Hydrology Questions	ESRP/ER Section	Hydrology – Background Followed by Question or Information Need
		Chesapeake Bay, would be expected to have small impacts. Provide the characteristics (discharge, concentrations, constituents, etc.) of the releases and the qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
HI-15	5.3.1.1	The ER states that based on the facts that (1) the amount of additional cooling water withdrawn for CCNPP Unit 3 is small compared to that of CCNPP Units 1 and 2, (2) CCNPP Unit 3 intakes for the CWS and the UHS are to be located within the existing intake embayment, and (3) intake velocities will be less than 0.5 ft/sec, it is concluded that the physical impacts of the intakes for the CCNPP Unit 3 CWS and UHS will be SMALL and will not warrant mitigation measures beyond the design features previously discussed. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
HI-16	5.5.1.2	The ER states that impacts from increases in volume or pollutants in the storm water discharge will be minimized by implementation of best management practices (BMPs). As such, impacts are expected to be SMALL. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
HI-17	5.5.1.3	The ER states that potential impacts from land disposal on nonradioactive solid waste will be SMALL. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this impact level.
Hydrology Miscellaneous (HM)		
HM-1	4.2.1.4	The ER states that the maximum high water level elevation in Johns Creek is 65 ft, which is below the approximate 84.6 ft elevation of the final site grade in the power block, switchyard, and cooling tower area. Provide the calculations and the quantitative analysis to support this statement.
HM-2	5.2.3.5	The ER states that the descriptions of the discharge location for CCNPP Units 1 and 2 and the discharge location for CCNPP Unit 3 are provided in Section 5.3.2. The discharge for CCNPP Units 1 and 2 influences the discharge location for CCNPP Unit 3 due to its discharge mixing zone. The two discharge locations must meet environmental regulations in order to be permitted. Based on a field trip to the Chesapeake Bay, where real-time temperature readings were observed, it appeared that the thermal discharge from Units 1 and 2 would not influence Units 3's thermal discharge. This conclusion appears to be borne out in Figure 5.3-1. Provide the scientific and quantitative bases that support the discharge for CCNPP Units 1 and 2 influencing the discharge location for CCNPP Unit 3.
HM-3	5.2.3.7	The ER states that groundwater would not be used for CCNPP Unit 3 operation, and will only be used during construction within the withdrawal limits of the existing groundwater permit for CCNPP Units 1 and 2. Surface water runoff and sedimentation effects will be minimized by implementation of a site safety and spill prevention plan and a stormwater pollution prevention plan. Effluent from the planned wastewater treatment plant will meet all applicable health standards, regulations, and total maximum daily loads (TMDLs) as set by the Maryland Department of the Environment (MDE) and the U.S. EPA. It is noted that environmental impacts on water quality during construction and operations for CCNPP Unit 3 would be minimal. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this conclusion.
HM-4	5.3.2.2.3	The ER states that physical and related ecological impacts of the CCNPP Units 1 and 2 thermal discharges have been limited to sediment scour in the vicinity of the high velocity discharge ports. It is expected that the physical impacts associated with CCNPP Unit 3 will also be limited to sediment scour of a small area. Explain how the scour area was bounded. Provide the qualitative and/or quantitative analyses and assessments that form the basis for this conclusion.

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Hydrology Questions	ESRP/ER Section	Hydrology – Background Followed by Question or Information Need
Hydrology Summary Questions (HS)		
HS-1	2.3, 4.1	The sum of construction parking areas in Figure 2.3.1-4 equals 46 acres, but Table 4.1-1 notes 17.7 acres. The concrete batch plant in Figure 2.3.1-4 equals 22 acres, but Table 4.1-1 notes 26.2 acres. Explain or correct the apparent inconsistencies between Table 4.1-1 and Figure 2.3.1-4.
HS-2	2.3.1, 2.3.2	Figures 2.3.1-(38-39) appears to be a duplicate of Figures 2.3.2-(5-6)? Explain the difference between Figures 2.3.1-(38-39) and Figures 2.3.2-(5-6).
HS-3	2.3.2	On page 2.3-38, the ER reports that the Aquia formation is a productive aquifer with a reported yield at the CCNPP site of up to 432,000 gpd (300 gpm). The productive yield of the Aquia aquifer is identified as being up to 432,000 gpd, and the current withdrawal is stated as 450,000 gpd (Table 2.3.2-6) with a permitted limit of 865,000 gpd (Table 2.3.2-6 and Section 4.2.1.3). Clarify the difference in numbers and whether they relate to differences between productive aquifer and productive yield.
HS-4	2.3.2.2.7	Groundwater level declines have been especially large in Southern Maryland and parts of the eastern shore where groundwater pumpage is projected to increase by more than 20% between 2000 and 2030 as population within the region is expected to grow by 37% (USGS 2006, as reported by Section 2.3.2.2.7 page 1.3-42). Two areas in Calvert County show cones of depression in the Aquia aquifer. A small depression north of the site is present in the North Beach and Chesapeake Beach area and a large depression south of the site in the Solomons area appears to be having a significant regional effect on the Aquia aquifer. This larger cone of depression is influencing regional groundwater flow out to a radius of at least 15 mi (24 km) from the pumping centers in the Solomons area as shown in Figure 2.3.2-7. This area of influence includes the CCNPP site (Section 2.3.2.2.7 Page 1.3-(42-43)). Because of these considerations, water supply managers in these counties are seeking to shift some groundwater usage from the Aquia aquifer to deeper aquifers (MGS 2005, as reported by Section 2.3.2.2.2.2 page 2.3-38). UniStar reports submitting a permit request to the State of Maryland to utilize any excess water not being used under the existing Units 1 and 2 permit. Provide an analysis of the impacts to the aquifer and surrounding users of the aquifer in the event that any excess from the Units 1 and 2 permit would be used for Unit 3.
HS-5	2.3.2	Table 2.3.2-8 appears to essentially be a duplicate of Table 2.3.2-6. Check, resolve, and provide any corrections.
HS-6	2.3.2	Confirm that the entry in Table 2.3.2-7 for August 2005 should be 8,786,380 rather than 87,86,380.
HS-7	2.3.2.2.9	There is potentially a large gap that exists between the available permitted groundwater appropriations within the Aquia aquifer and short-term demands associated with construction activities for CCNPP Unit 3. The CCNPP Unit 3 is considering meeting any future groundwater shortfalls by tapping the Coastal Plain aquifers within the State of Maryland through consultations with the MGS and the MDE (Section 2.3.2.2.9 page 2.3-45). Explain how these offsite-potable-water demands, supplying onsite-fresh-water needs, could realistically meet the construction needs for water by providing a regional water mass balance during construction and identifying the specific sources of potable water. Explain how potable water needs would be met, including any use of storage tanks, trucking in water, pumpage rates and times for pumpage (e.g., day, night), etc. Provide storage tank sizes and possible tank locations if storage tanks are used.
HS-8	4.2.2.3	Increasing groundwater withdrawals for construction needs from the onsite Aquia aquifer production wells, could produce a local depression of the potentiometric surface in that aquifer. These increased withdrawals could potentially induce salt water intrusion

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Hydrology Questions	ESRP/ER Section	Hydrology – Background Followed by Question or Information Need
		or produce land subsidence, but neither had been reported as a significant problem in Calvert County or St. Mary's County (Section 4.2.2.3 page 4.2-11). Provide the basis for suggesting that there may be the potential for induced salt water intrusion to an aquifer 600 ft below msl being supplied by salt water from the Chesapeake Bay with a bottom elevation from 30 to 100 ft below msl.
HS-9	4.2.2.3	If properly managed, construction activities at CCNPP and any additional groundwater withdrawals for construction of CCNPP Unit 3 should not adversely affect the local or regional groundwater systems. There are currently no known or projected site discharges that are or could affect the local groundwater system. Construction activities will affect the shallower, non-utilized water-bearing units beneath the site (the Surficial aquifer and upper water bearing units within the Chesapeake Group) (SAR Section 2.4.12.1.4 page 2.4.12-12). A potential stormwater management plan calls for a series of bio-retention basins and sedimentation basins to divert, collect, and promote infiltration to the Surficial aquifer which feeds Johns Creek. Provide the basis for stating that groundwater withdrawals would not adversely impact the local or regional groundwater systems. Include the impact to the Surficial aquifer, Aquia aquifer, connected aquifers, and water availability to other users. Identify the impact to the Surficial aquifer and Johns Creek due to a potential stormwater management plan, which calls for a series of bio-retention basins and sedimentation basins to divert, collect, and promote infiltration. (See Item HS-8, which is related.)
HS-10	2.3.1.2.3.4	In the vicinity of the CCNPP site, the Surficial aquifer is capable of transmitting groundwater but is of limited areal and vertical extent. The Surficial aquifer is not a reliable source of groundwater because of its relative thinness, limited saturated thickness, and dissected topography that causes local groundwater to discharge as small seeps and springs (Section 2.3.1.2.3.4 page 2.3-27). The Surficial aquifer is present above elevation 65 to 70 ft msl at the CCNPP site as shown in Figures 2.3.1-38 and 2.3.1-39. Groundwater surface contour maps, as detailed in Figures 2.3.1-(41-45) and reported in Table 2.3.1-17, indicate groundwater elevations between 68.0 to 83.5 ft msl (Section 2.3.2.2.2.1 page 2.3-36). For each quarter, the spatial trend of the water table surface and horizontal gradients are similar, with elevations ranging from a high of approximately 84.8 ft msl at well OW-423 to a low of approximately 68.1 ft msl at well OW-743 (Section 2.3.1.2.3.2 page 2.3-22, Figure 2.3.1-41). Clarify whether the 83.5 number is in error as the maximum reported number appears to be 84.78 in Table 2.3.1-17, Also, provide the correct low elevation, as neither the 68.0 nor the 68.1 is reported in Table 2.3.1-17, and Table 2.3.1-17 indicates a minimum elevation of 68.37.
HS-11	2.3.1, 3.1	Figures 2.3.1-38 and 2.3.1-39 suggest a maximum ground surface elevation at around 125 ft msl. The plant grade for CCNPP Unit 3 will be at an elevation of approximately 85 ft msl with the bottom of the Reactor Building foundation 40-ft below grade at an elevation of 45 ft msl (Section 3.1 page 3.1-2). The deepest base of the excavation for construction of the reactor building is an elevation of approximately 44 ft msl (Section 2.3.2.2.11 page 2.3-46). Clarify whether the base of the reactor building ~~us~~ is at 45 ft or 44 ft msl.
HS-12	2.3.1, 4.2.2.5	With the plant grade for CCNPP Unit 3 being lowered to an elevation of approximately 85 ft msl, there is the potential to remove up to 40 ft of soil and remove a potential vadose zone volume that helps recharge the Surficial aquifer, as illustrated by Figures 2.3.1-37 through 2.3.1-39. Section 4.2.2.5 page 4.2-13, it states that the final site grade elevation will be 84.6 ft. Clarify whether the final site grade elevation is 84.6 or 85.0 ft msl.
HS-13	2.3.1	A permanent groundwater dewatering system is not anticipated to be a design feature for the CCNPP Unit 3 facilities. Removal of a portion of the Surficial aquifer during construction may eventually lower the expected depth to groundwater. Surface water controls to minimize precipitation infiltration and the redirection of surface runoff away from the facility area are expected, further minimizing water infiltration to the groundwater system beneath the site. Groundwater elevations will continue to be monitored,

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		and any observed deviations in groundwater elevations potentially impacting the current design basis will be accounted for to design a construction dewatering system, as appropriate (Section 2.3.2.2.11 page 2.3-47). Provide if possible a topographic map with an overlay of the construction foot print and with contours that can be easily read. Describe how the recharge to the Surficial aquifer would be impacted in the short term. Long term is presented in Figures 2.3.2-(24-25). Identify how the seeps and streams would be impacted and how this would impact local wells.
HS-14	2.3.1	Table 2.3.1-1 appears to be mislabeled. Please check, resolve, and correct.
HS-15	3.4, 4.3.2.2	It appears that there is an error in the text, as it refers to Figure 3.4-8 instead of Figure 3.4-3 (Section 4.3.2.2 page 4.3-19). Please verify.
HS-16	4.2.1.2, 4.3.2.1, 4.2.2.7	Excavated and dredged material will be transported to an onsite spoils area located outside the boundaries of designated wetlands (Section 4.2.1.2 page 4.2-3). Dredged material will be disposed of in the previously used disposal area known as Lake Davies (Section 4.3.2.1 page 4.3-15). The location of Lake Davies is shown in Figure 2.3.1-2. Lake Davies previously received spoils for CCNPP Units 1 and 2. As such, dredge spoils generated during the dredging of the barge slip area and construction of the intake/discharge structures may contain elevated levels of metals and salts. Runoff containing saline residue from the spoils could enter the impoundment just southeast of the spoils disposal pile, which is likely in direct hydraulic contact with the Surficial aquifer. The Environmental Report notes that any impact on groundwater quality would probably be minor due to dilution (Section 4.2.2.7 pg 4.2-14). Lake Davies appears to be below the elevation associated with the Surficial aquifer; describe how Lake Davies' runoff and seepage could impact the Surficial aquifer. Provide the basis for the conclusion that the impacts to groundwater quality would be minor.
HS-17	4.2.2.7	Little, if any, water quality impacts would be expected if this diluted water were to reach the deeper aquifers. Dewatering for the foundation excavations may increase the oxidation of some sedimentary constituents by placing them in direct contact with the atmosphere. The oxides might have an increased solubility and could migrate down gradient when the potentiometric head is reestablished following construction completion. The ER notes that possible impacts to the Surficial aquifer water quality would be small and decrease with migration and dilution (Section 4.2.2.7 page 4.2-14). Provide the basis for the conclusion that water quality impacts would be small and decrease with migration and dilution.
HS-18	4.2.2.2, 4.2.2.7, 4.3.2.2	The proposed removal of onsite wetlands could reduce the ability of microbiotic organisms and fauna to naturally attenuate contaminants and pollutants produced onsite (Section 4.2.2.7 page 4.2-14). No significant effects of overland sedimentation or runoff into the Chesapeake Bay are expected (Section 4.3.2.2 page 4.3-(18-19)). A quantitative calculation and evaluation of the construction effluents and runoff will be done as part of the state construction permit process (Section 4.2.2.2 page 4.2-(9-11)). Provide quantitative calculations and an evaluation.
HS-19	4.2.1.5, 4.2.2.10	Heavy rainfall events could impact local streams and watersheds. Provide expected impacts during heavy rainfall events to local streams and watersheds and include catchment area size associated with Johns Creek and contaminant loadings.
HS-20	1.3	Clean Water Act Section 316(a). This section regulates the cooling water discharges to protect the health of the aquatic environment. Add this permit to the list in Table 1.3-1.
HS-21	1.3	Clean Water Act Section 316(b). This section regulates cooling water intake structures to minimize environmental impacts associated with location, design, construction, and capacity of those structures. Add this permit to the list in Table 1.3-1.

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Hydrology Questions	ESRP/ER Section	Hydrology – Background Followed by Question or Information Need
HS-22	3.3	Questions HS-25 through -27 below are directly related to Table 3.3-1 and Figure 3.3-1. Because UniStar has modified its design to go with a hybrid cooling tower, the intake and discharge rates provided in Table 3.3-1 and Figure 3.3-1 will need to be updated and be consistent with the information provided in the text.
HS-23	3.3, 3.4.2.2	Maximum effluent discharge to Chesapeake Bay is 23,228 gpm (Figure 3.3-1). Reconcile the volume stated in Section 3.4.2.2 page 3.4-6, with the volumes in Fig 3.3-1 and Table 3.3-1.
HS-24	3.3	All water demands by the CCNPP are supplied by water withdrawn from the Chesapeake Bay. It is anticipated that the average withdrawal rate is 37,788 gpm (Table 3.3-1). Is there an error in Fig 3.3-1, which reports 37,778 gpm?
HS-25	3.3.1	3040 gpm represents the desalinated water consumption during normal operations (Section 3.3.1 page 3.3-1 and Table 3.3-1). Is there an error, as page 3.3-1 notes 4.1E7 gal/mo, which equals 935 gpm, not 3040 gpm?
HS-26	2.3.2.2, 4.2.1.1	Some irrigation, old farm, and domestic wells withdraw water from the Surficial aquifer, but the aquifer is not widely used as a potable water supply, and yields are generally less than 50 gpm (Section 4.2.1.1 page 4.2-2; Section 2.3.2.2.2.1 page 2.3-36 (ER references MGS 2005). There are four bio-retention basins that drain the power block and turbine building areas. These ditches are constructed with material that promotes infiltration and runoff from low-intensity rainfall events (FSAR Section 2.4.2.3 page 2.4.2-23). No other information is presented that substantiates that the Surficial aquifer will be able to maintain the ability of local wells to withdraw at these low rates. Identify the wells locations. Assuming major portions of the Surficial aquifer are removed, explain whether the Surficial aquifer would still be able to maintain the ability of local wells to withdraw at these low rates.
HS-27	2.3.2	Figures 2.3.2-24 and 2.3.2-25 and their explanations are very confusing. Although these figures only present the modeling domain, the figures are difficult to read because the dark background (green and purple) suggests the Chesapeake Bay, when in fact they do not represent the Chesapeake Bay. Please update the figures to more clearly articulate locations of figure features.
HS-28	2.3.2	Figures 2.3.2-24 and 2.3.2-25 and their explanation are very confusing. It appears from Figure 2.3.2-(24-25) and Section 2.3.2.2.11 (page 2.3-(46-47), with the exception of the Essential Service Water System (ESWS) Cooling Tower 1 and Emergency Power Generating Building 1/2, that water table elevations range approximately 4 to 10 ft below the proposed grade at all safety-related facilities. Also, the water table averages approximately 4 ft below grade at the Service Water System Cooling Tower 1 and approximately 3 ft below grade at the Emergency Power Generating Building 1/2. Identifiy in these figures the exact locations of the 1) Service Water System Cooling Tower 1 where the water table is 4 ft below grade, and 2) Emergency Power Generating Building 1/2 where the water table is 3 ft below grade.” (Figure 2.3.2-25; Section 2.3.2.2.11 page 2.3-(46-47)).
HS-29	2.3.2	Figures 2.3.2-24 and 2.3.2-25 and their explanation are very confusing. Groundwater mounding in the Surficial aquifer will no longer be present below the CCNPP Unit 3 power block area (which includes the nuclear island). Horizontal flow will be predominantly to the north and east and controlled by discharge to the bio-retention ditches on the northwest, northeast, and southeast sides of the CCNPP Unit 3 power block area. From Section 2.3.2.2.11 page 2.3-(46-47), is it noted that modeled post-construction water table elevations will average approximately 73.0 ft msl at the nuclear island (Figure 2.3.2-25). A maximum of approximately 29.0 ft of groundwater induced hydrostatic head loadings should be used as the design basis for the subsurface portions of all safety-related structures. Groundwater within the Surficial aquifer beneath the CCNPP Unit 3 facility area ranges from approximately elevation 68 to 85 ft msl.

Hydrology Questions	ESRP/ER Section	Hydrology – Background Followed by Question or Information Need
		Provide responses for the following questions to clarify the figures: • If the ground surface elevation in this entire area will be around 85 ft msl, then why does Figure 2.3.2-24 present a two-foot mound of water above grade to the south-southeast of the power block (denoted by -2.0-ft contour)? If this two-ft pond of water above grade in Figure 2.3.2-24 represents one of the bio-retention basins, then why are the other bio-retention basins also not represented by mounding? • If the contours suggest a hydrologic divide to the southwest, south, and southeast of the power block, why would the simulations indicate that any deep drainage percolation will flow into the power block area? Also, if precipitation is diverted away from this area to the bio-retention basins, then why would the infiltration not just flow back into the power block area? • Explain the mound of water to the northwest of the proposed ESWS cooling tower in Figure 2.3.2-24. • The results in Figure 2.3.2-24 appear to be in conflict with the results presented in Figure 2.3.2-25. Why does Figure 2.3.2-25 indicate that with movement downgradient toward Johns Creek to the southwest, the water table elevation increases to at least 86.3623 ft msl (as shown in figure key), which is higher than the ground surface elevation in the power block area? Why does all of the groundwater flow appear to be into the power block area from the south and the south west (i.e., to the north and northeast, as indicated in the ER), if the surface water flow should be directed to the bio-retention basins upgradient of the power block area? Why are the water surface elevations toward Johns Creek higher than those at the power block area (e.g., 86 ft msl versus 71 ft msl)? If the water table surface in the power block area is at 71 ft msl and the ground surface is at 85 ft msl, then why is the water table surface 14 ft (i.e., 85 – 71) not below the ground surface, which does not appear to match Figure 2.3.2-24? • Explain the following statement: "Therefore a maximum of approximately 29.0 ft of groundwater induced hydrostatic head loadings should be used as the design basis for the subsurface portions of all safety-related structures." • Which vadose and saturated zone models were used? What is the conceptual site model? What are the input boundary conditions to the model simulation?
HS-30	2.3.3, 5.2.3, 5.2.3.1	Section 2.3.3 (page 2.3-49) notes that salinity, dissolved oxygen, temperature, sediments, chemical contaminants, and nutrients are the most important water quality parameters with nutrient loading (e.g., phosphorus and nitrogen) being regarded as the most critical water quality problem. Sections 5.2.3 and 5.2.3.1 (page 5.2-6) note that in 1998 the Chesapeake Bay was declared an impaired water body by the U.S. Environmental Protection Agency (EPA) because of excess sediments and nutrients and appears on the Maryland Clean Water Act 303(d) impaired surface water list. Supply reference material to support these statements.
HS-31	3.3	The arithmetic difference (18,386 gpm) between Chesapeake Bay withdrawals (37,778 gpm Table 3.3-1) and the effluent discharge to the Chesapeake Bay (19,426 gpm Table 3.3-1) does not appear to be equivalent to the CWS & ESWS Evap and drift (17,354 gpm, 940 gpm, 39 gpm, and 2 gpm), and Fire, portable, sanitary (20 gpm, 3 gpm), which totals 18,358 gpm. Verify these numbers and correct if needed.
HS-32	3.6.3.2	The desalination plant water output is 1.75E6 gpd or 1215 gpm (Section 3.6.3.2 page 3.6-3). Provide the source of these numbers and explain why they do not seem to match the 1055 gpm Table 3.3-1 or Figure 3.3-1.
HS-33	5.2.3.1	"Based on the ESWS makeup and blowdown rate, it will circulate fresh water concentrated two times compared to brackish water assumed to have total dissolved solids of 20,000 milligram per liter concentrated two times" (Section 5.2.3.1 (page 5.2-7)). Clarify statement. Does this mean that the TDS in the blowdown would be 40,000 mg/L?

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Hydrology Questions	ESRP/ER Section	Hydrology – Background Followed by Question or Information Need
HS-34	2.3.3, 3.3, 3.6, 5.2.3.1	During the operation of the plant, Table 3.6-3 indicates that the Waste Water Treatment Plant (WWTP) would be operational and would discharge 19,500 gpd (13.5 gpm) of effluents. Figure 3.3-1 reports that the Waste Water Treatment Plant would only discharge a maximum of 20 gpm of effluents, and this would be discharged only to the Waste Water Retention Basin (WWRB). Table 3.6-7 reports that the WWTP design flow for normal operations is 52,500 gpd (36.5 gpm) with a peak flow of 183,000 gpd (127 gpm). Section 5.2.3.1 (page 5.2-8) notes that all WWTP effluents would be directly discharged to the Chesapeake Bay. In addition, Section 2.3.3.1.3 (page 2.3-(60-61)) notes that "treated effluent will be combined with the discharge stream from the onsite waste water retention basin and discharged to Chesapeake Bay. The discharge will be in accordance with local and state safety codes. The dewatered sludge will be hauled offsite for disposal at municipal facilities....discharge could be directly into the effluent stream from the retention basin." There appears to be inconsistencies between the various sections. Please correct and clarify.
HS-35	3.3.3, 5.2.3.1	The average discharge from the Waste Water Retention Basin into the Chesapeake Bay is 19,425 gpm with a maximum flow rate of 23,227 gpm (Section 5.2.3.1 page 5.2-7; Table 3.3-1 and Figure 3.3-1). An NPDES discharge permit will regulate all liquid effluents discharges from the CCNPP site during plant operations (Section 3.3.3 page 2.3-49). Identify the constituents that would be discharged to the Chesapeake Bay from the Waste Water Retention Basin, and at what levels. Discuss the potential impacts.
HS-36	3.4.2.2	The maximum discharge will be approximately 23,228 gpm (3.344E7 gpd) (Section 3.4.2.2 page 3.4-6). Reconcile the value with HS-22.
HS-37	2.3.3, 5.3.2.1.1	Table 2.3.3-9 summarizes the analytical results of sediment samples collected in the Chesapeake Bay near the CCNPP Barge Slip Unit 3 in September 2006. The samples indicate a size distribution of 1.5% gravel, 96% sand, and 0.2 silt with a specific gravity of 2.679. Section 5.3.2.1.1 (page 5.3-8) notes that sands predominate in waters less than 13.1 ft in depth, mud predominates in waters with a depth greater than 26 ft, and both mud and sand appear at intermediate depths. Section 2.3.3.1.2, on the other hand, contradicts the size distribution reported in Table 2.3.3-9 by noting that in "the vicinity of the CCNPP site, silt and clay sediments predominate with moderate sedimentation and resuspension rates (Section 2.3.3.1.2, page 2.3-51). Clarify whether sand, silt, or clay predominate.
HS-38	2.3.3.1.2	"Based upon the localized flow rates and pycnocline data, presented in this section, resuspended bottom sediments are likely to settle rapidly within area of the CCNPP site" (Section 2.3.3.1.2 page 2.3-59). When the water is denser, the sediments tend to stay suspended for longer periods of time. What is the evidence that denser water will result in more rapid settling of suspended sediment particles in a flowing estuary?
HS-39	2.3.2	On page 2.3.2-59, the ER refers to Figure 2.3.1-12 but should refer to Figure 2.3.1-26. Verify the appropriate reference for the figure.
HS-40	3.4.2.1	Section 3.4.2.1 page 3.4-4 reports 13,80. Correct the value if necessary.
HS-41	5.3.1.1	In NRC's license renewal determination of existing impacts associated with Units 1 and 2 were small. A case is being made that the impacts of the additional water withdrawal by Unit 3 should also be relatively SMALL, given that 1) Unit 3's intake structure will be associated with the existing intake embayment, 2) the relatively small amount of water removed as compared to Units 1 and 2, and 3) intake velocities below 0.5 ft/s. It is stated that no mitigation measures beyond the design features are warranted (Section 5.3.1.1 page 5.3-(2-3)). Provide qualitative and/or quantitative analyses that support the conclusions, if available, and identify the anticipated impacts of periodic dredging.

Calvert Cliffs COL – More Detailed Version of RAIs for Hydrology Analysis

Hydrology Questions	ESRP/ER Section	Hydrology – Background Followed by Question or Information Need
HS-42	5.3.2.2.3	Using CCNPP Units 1 and 2 thermal discharge structure as an example, Units 1 and 2 currently have limited sediment scour in the vicinity of their high velocity discharge ports, and therefore, UniStar expects similar limited scouring in the vicinity of the Unit 3 discharge diffuser (Section 5.3.2.2.3 page 5.3-10). Provide a qualitative and/or quantitative analysis that justifies and substantiates the conclusions that are being drawn.
HS-43	2.3.2	Units 1 and 2 1) are discharging a monthly annual average of 4965 cfs (3.209E9 gpd or 2.228E+6 gpm) with a maximum monthly discharge of 5354 cfs (3.46E9 gpd or 2.40E6 gpm), based on data from January 2002 through December 2006 (Table 2.3.2-2). Provide the basis and preferably a reference to conclude that there are no significant issues with major sedimentation or scouring.
HS-44	5.3.2	The CORMIX model was used to simulate the extent of the thermal plume under the conditions identified in Tables 5.3.2.-(1-2). Provide all CORMIX input parameters and their values.
HS-45	5.3.2.1.3	Section 5.3.2.1.3 (page 5.3-9) states that the "area occupied by the plume is compared to the State of Maryland water quality criteria in Table 5.3.2-4. This comparison demonstrates that the CCNPP Unit 3 thermal plume conforms to each of the criteria. The radial dimension of the 3.6ºF (2ºC) isotherm is less than 3% (reviewer computes 207/4101 = 5%) of the ebb tide excursion, compared to the one-half specified by the State of Maryland regulation. The full capacity of the 3.6ºF (2ºC) isotherm is less than 0.3% (reviewer computes 69/16000 = 0.4%) of the Chesapeake Bay cross section, and the bottom area affected by the plume is about 0.01% (reviewer computes 2.9E4/1.3E7 = 0.2%) of the average ebb tidal excursion multiplied by the width of the Chesapeake Bay." Provide an explanation of the correct values and justify the numbers.
HS-46	5.3.2	Table 5.3.2-4 provides three permissible limits. Provide calculations or specific references to document the three permissible limits in Table 5.3.2-4.
HS-47	5.5.1.2, 5.6.2.3	Increased "runoff from 20 acres of impervious surfaces from the switchyard could cause a modification to the hydrograph and increases in temperature, sediment, and nutrients in receiving water bodies, and corresponding impacts to aquatic invertebrates, plants, and fish. Impacts from these affects would be mitigated by the provision of storm water retention facilities downstream. There is also the potential to increase stream temperatures from the removal of shade from ground and water bodies in the transmission corridor, but this is anticipated to be of minor significance" (Section 5.6.2.3 page 5.6-70 "The NPDES permit will also require a Storm Water Pollution Prevention Plan (SWPPP), which prevents or minimizes the discharge of potential pollutants with the storm water discharge, to reflect the addition of new paved areas and facilities and changes in drainage patterns. Impacts from increases in volume or pollutants in the storm water discharge will be minimized by implementation of best management practices (BMPs). As such, impacts are expected to be SMALL" (Section 5.5.1.2 page 5.5-2). Provide qualitative and/or quantitative calculations to clearly show that the impacts to the watershed from major storm events would not impact the water amounts, use, or quality of the surrounding streams and watershed.

Calvert Cliffs COL – ESRP-Based RAIs for Drafting EIS

Item	ESRP/ER Section	Requests for Additional Information (resulting from site audit discussions)
		GENERAL COMMENTS
GC-1	10 CFR 51.50(c)	Provide an environmental protection plan (EPP) as required by 10 CFR 51.50(c) or identify where in the application it currently resides.
GC-2	3.4.1, 3.4.2, 5.3.3, 5.8.1	Provide a statement describing the cooling system/tower change to a hybrid design and identify the impacts of the new aspects of the design and construction and operation.
GC-3	4.1.2	The ER indicated that new offsite transmission lines were not planned to support Unit 3. However, the PJM Interconnection regional transmission operator has identified three options for upgrading or adding transmission lines from Calvert Cliffs. The first requires no new offsite transmission lines, but some upgrades on-site. The second option adds two new transmission lines from Calvert Cliffs to substations about 20 to 30 miles away to the north and west. The third adds one new transmission line and upgrades circuit breakers. The new lines would be needed to avoid reducing power from the proposed Unit 3 when the existing lines are out of service for maintenance. Provide a description of the environmental impacts (land use, ecology, hydrology, socioeconomic, cultural resources) of options two and three if either appears likely.
GC-4	10 CFR 52.79	Provide corrections and changes to the ER since its release in July 2007.
GC-5	10 CFR 51.45(c)	Provide a description the environmental impacts of pre-construction activities at the site and an analysis of the cumulative impacts of the activities to be authorized by the COL in light of the preconstruction impacts, as explained in COL/ESP-ISG-4, available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-esp-isg-4.pdf on the NRC's public Web site.
		TRANSMISSION LINES
TL-1	5.6	The PJM Generator Interconnection Q48 Calvert Cliffs 1640MW Impact Study, dated September 2007, available at http://www.pjm.com/planning/project-queues/impact_studies/q48_imp.pdf, last visited April 2, 2008, states that options are under consideration to add circuits to the existing transmission corridors from Calvert Cliffs to Chalk Point and Waugh Chapel to Brighton to support the operation of Calvert Cliffs Unit 3. However, Sec. 5.6.3.1 of the Environmental Report limits consideration of impacts to the CCNPP site. Describe the circuit additions that are under consideration and discuss the environmental impacts.
		TERRESTRIAL ECOLOGY
TE-1	2.4.1	Provide the basis for stating that none of the six State of Maryland noxious weeds are present on the CCNPP site.
TE-2	2.4.1	Provide consultation correspondence with USFWS to determine which federally listed species may occur on the CCNPP site.
TE-3	2.4.1	Describe bald eagle nest activity within the last 5 years on the Calvert Cliffs site and describe methods used to acquire this information.
TE-4	2.4.1	What is the current distribution and abundance of the eastern narrowmouth toad within the construction footprint and within any wetland or stream that would be influenced by the proposed actions, including wetlands that may potentially be affected by changes in surface and groundwater flow alterations? How were these data derived?

Calvert Cliffs COL – ESRP-Based RAIs for Drafting EIS

Item	ESRP/ER Section	Requests for Additional Information (resulting from site audit discussions)
TE-5	2.4.1	What were the criteria used to determine whether or not beach/cliff habitats are considered unique or rare and identify any state/federal agency consulted to make this determination.
TE-6	4.3.1	Define specific management actions to the laydown areas with respect to reclamation and/or restoration.
TE-7	5.6.1	How would the proposed actions contribute to the regional ecology with respect to the new Mid-Atlantic 500kV line and the expansion of the Cove Point L&G power facility?
TE-8	2.4.1	How might the proposed actions affect certification of the Calvert Cliffs' site as wildlife habitat by the Wildlife Habitat Institute?
TE-9	4.3.1	How much of the historic bluff would be impacted by the construction of the new make-up and emergency water intake structures, as well as the new fish return facility? How much forested area would be removed for stabilization?
TE-10	4.3.1	What wetland mitigation would occur to offset impacts of Unit 3 construction? Where would this occur and what is the expected impact of mitigation actions (quality/quantity)?
TE-11	5.3	Does the characterization of salt deposition from the cooling tower in the ER adequately describe what is expected with a hybrid system? If not, provide an updated description.
TE-12	4.3.1	How would the alteration of surface and subsurface water flow impact the quality and quantity of water flowing into wetlands during construction?
TE-13	5.1	How would the alteration of surface and subsurface water flow impact the long-term quality and quantity of water flowing into area wetlands after construction?
TE-14	2.4.1	Provide the State of Maryland environmental review report when received (June/July timeframe) as discussed at the site audit in March.
TE-15	4.6	Provide Wetland Mitigation Plan as discussed at the site audit in March.
TE-16	4.6	Provide the Forest Conservation Plan as discussed at the site audit in March.
		AQUATIC ECOLOGY
AE-1	2.4.2	Clarify the characterization of Lake Davies and Lake Conoy. The Surface Waters section of the ER (2.3.1.1) does not include adequate descriptions of either impoundment. The aquatic ecology section (2.2.4.1.1.3) provides some information about the fauna present in each, but does not describe physical features. Provide information about the history, size, physical features, and current status of both. Describe what actions, if any, are taken to maintain or adjust the water level in each water body.
AE-2	2.4.2	Clarify that the “blue dots” shown in Figure 2 of the Aquatic Surveys Report (EA 2007) are freshwater sampling stations. Some appear to be “on land” (e.g., LC-02, LD-01, LD-03).
AE-3	2.4.2	The Faunal Survey Report (Tetra Tech 2007) lists a crayfish burrow as being seen in Goldstein Branch. Are there any records indicating the species of crayfish present on the CCNPP site? Is there any information to indicate that crayfish on the site do not include the invasive Rusty Crayfish (Orconectes rusticus)?
AE-4	2.4.2	What are the units for the depth contours shown in Figure 3 of the Aquatic Survey Report (EA 2007)? .

Item	ESRP/ER Section	Requests for Additional Information (resulting from site audit discussions)		
AE-5	2.4.2	The Aquatic Survey Report (EA 2007) shows that there appears to be a deep "channel" perpendicular to the intake area. Was this channel dredged? If so, are there any plans to dredge the channel for the installation of Unit 3? Does the channel require maintenance dredging?		
AE-6	2.4.2	Discussions during the site tour (March 2008) indicated that the location and design of the cooling intake and discharge systems, including the fish return system for the new unit, had not been finalized. Also, there was some expectation that the fish return system for Unit 3 would be combined with that for Units 1 and 2 at a new location. Describe the impacts of closing the fish return system for Units 1 and 2 while it is being relocated to the site of the return system for Unit 3. Provide the final location and design of the cooling intake and discharge systems, including the fish return system for the new unit.		
AE-7	2.4.2	During the site tour, it was mentioned that stream modification is being considered as a possible mitigation for impacts. Describe the specific modifications that would be made and how the success of this mitigation would be evaluated.		
AE-8	2.4.2	Provide one clear, readable map that shows the complete footprint of the new plant in relation to all of the freshwater bodies that would be impacted.		
AE-9	2.4.2	The lower part of Johns Creek is shown as potential flood area (ER Figure 2.3.1-7). How would the stormwater discharge system affect the ecology of downstream Johns Creek and St. Leonard Creek?		
SOCIOECONOMICS				
SE-1	2.5.1	Population numbers within 10 and 50 miles are different in Tables 2.5-2 and 2.5-6. Numbers in Table 2.5-6 are consistent with FSAR Tables 2.1.3-1 and 2.1.3-2. Verify numbers in these ER tables		
SE-2	2.5.1	Clarify how the exponential growth rate for each county was determined, covering the 0-50 miles from the center of the site. Identify the number of years of population data considered in growth rate determination.		
SE-3	2.5.1	Clarify the process used to project populations into the future (2010 through 2060) by decade using the above determined growth rate. Was growth rate by county determined above used to project population into future as exponential basis or linear basis?		
SE-4	2.6.2, 10.3	Provide Phase 2 Traffic Impact Study when completed.		
SE-5	9.3	Regarding the Crane alternative site, provide present population, projections, and density determinations. If this exceeds 500 persons/mi^2, provide a justification for considering this site as an alternative and present rationale for selecting this as more advantageous than others considered.		
SE-6	9.3.2	On page 9.3-10, the second line in this discussion of CCNPP refers to Baltimore County. Verify that the correct county is Calvert County.		
SE-7	9.3.2	The discussions in the Environmental Justice sections (9.3.2.1.9, 9.3.2.2.1.9, 9.3.2.2.2.9, 9.3.2.2.3.9) for Baltimore County, Calvert County, Oswego County, and Wayne County state that "These data demonstrate that the population of this area is similar in composition to the State of Maryland [New York for Ginna and NMP sites] and to the U.S. as a whole." Resolve these statements with the data presented in Tables 9.3-1 through 9.3-4 or revise the tables		

Item	ESRP/ER Section	Requests for Additional Information (resulting from site audit discussions)
		appropriately.
CULTURAL RESOURCES		
CR-1	2.5.3, 4.1.3, 5.1.3	Based on conversations during the site audit 3/17/08 specifically tours of the cultural resources – the proposed area of potential effect (APE) may be altered and expanded due to the change in lay down areas. Describe the expanded APE, the cultural resources within the expanded APE, and the impacts to the cultural resources from construction and operation of the proposed action.
METEOROLOGY		
MET-1	2.7, 5.4, 7.1	Provide the input and output for X/Q calculation codes.
ACCIDENTS		
AC-1	2.7	Provide the input and output for the Aeolus code (Areva's X/Q calculation code).
AC-2	7.2	Please clarify whether distance to nearest residence 2700 ft or 4000 ft.
AC-3	7.2.1.1	For the offsite consequences evaluation, provide descriptions of the scenarios representing the following release categories in the U.S. EPR PR (same as release categories listed in Table 7.2-1): RC101, RC201, RC205, RC206, RC303, RC304, RC404, RC504, RC701, and RC702.
AC-4	7.2	Supply MAAP input/output files that characterize the RCs (plus calculations or access to calculations) to examine the time sequence of events and timing of key events.