

PMNorthAnna3COLPEmails Resource

From: Dozier, Tamsen
Sent: Thursday, February 24, 2011 1:25 PM
To: Tony Banks
Cc: Davis, Adam J; Sandusky, William F III; Emch, Richard; Ramsdell, James V Jr (Van)
Subject: Updated Post Audit Follow Up Items
Attachments: NAPS Post Audit Items 24Feb2011.docx

Tony

Attached is the most recent version of NRC post audit follow up tracking spreadsheet. The red font shows the information we have updated based on our audit close out discussions with you and clarification phone calls we have held since then.

Concerning the staff audit of the accidents sections of the ER, some of the SAMA items were missed in our close out report and they have been added as ACC-11. Let me know if you have any questions and we will provide additional clarification if necessary.

Tami

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Post Audit Follow Up Items

North Anna Power Station Unit 3 New and Significant Audit February 2-3, 2011

| Audit Item # | Audit Item | Follow Up Item or Status | Updated 02/22/2011 |
|---------------------|---|--|--|
| G- | General B. Sandusky/A. Davis | | |
| G-1 | Provide a knowledgeable expert(s) to discuss the current status of authorizations from consultations with Federal, State, Regional, and local governments as well as affected Native American tribal agencies | Resolved for audit. | Resolved for audit. Will be updated as requested by NRC. |
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| H- | Hydrology M. Masnik / L. Vail / P. Meyer | | |
| H-1 | Make available information detailing the approximate locations of the two to three domestic wells described in Revision 3 of the Environmental Report (ER) Section 4A.6 and the expected pumping rates and duration of pumping for these wells. | Applicant will provide additional information regarding maximum water usage and rationale for any additional wells including future use of the wells after completion of construction. | Information requested from MHI. Not yet available. |
| H-2 | Provide a knowledgeable expert(s) to more specifically identify the methods and data used to determine the impact of tritium discharge on the tritium concentration in Lake Anna. (see RHH-4) | See RHH-4 | See RHH-4 |

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|--------------|--|---|--|
| H-3 | Make available a diagram(s) of all plant water use, including rates, for anticipated plant operational modes for the proposed Unit 3. | Applicant to provide figure similar to what appeared in the ESP ER. | Figure is being developed and will be provided in the reading room at a later date; can be submitted to the docket if requested and necessary information is clear from available diagram. |
| H-4 | Provide a knowledgeable expert(s) to identify new information, if any, relating to the operation of the Unit 3 Wet/Dry Tower cooling system in view of current plans for reservoir management and the results of the instream flow incremental methodology (IFIM) study. (see AE-1) | Resolved as to information that is available to date. | Resolved for audit. |
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| AE- | Aquatic Ecology M. Masnik / J. Ward | | |
| AE-1 | Provide a knowledgeable expert(s) to discuss the status of the final reservoir management agreement with VDGIF/ Virginia Department of Environmental Quality (VDEQ). | See H-4. Dominion will provide redacted version of existing MOA with VDGIF/VDEQ that describes reservoir management agreement and projects within the North Anna watershed | Requested item will be available to reading room on or about Feb 24. |
| AE-2 | Provide a knowledgeable expert(s) to more specifically identify how the water budget estimates were developed with respect to a) consumptive water use for Unit 3, and b) projections of low flow (20 cfs) releases over the North Anna dam under existing (two unit) and proposed (three unit) operation. | Resolved for audit. | Resolved for audit. |

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|--------------|--|---|--|
| AE-3 | Provide a knowledgeable expert(s) to more specifically identify any aquatic monitoring that has been conducted in Lake Anna, the Waste Heat Treatment Facility (WHTF), or the North Anna River since the development of Rev. 2 of the ER (e.g., 2008-2010), or monitoring that will be required based on the final IFIM report and resulting reservoir management agreement between Dominion and VDGIF/VDEQ. | <p>Applicant will submit 2008 and 2009 reports to be docketed. Applicant also to provide citation for study plan that is part of the NPDES permit that was renewed in 2008 VA0052451.</p> <p>Dominion to provide copies of</p> <ol style="list-style-type: none"> 1) Current study plan for Lake Anna, the WHTF, and the North Anna River, 2) Aquatic monitoring reports for 2008 and 2009 3) Aquatic monitoring report for 2010 when it is available on March 31, 2011. | Annual report and monitoring plan for 2008 will be available in the reading room on or about Feb 24. The annual report for 2009 is available in part III of the JPA. The mussel survey is also available in the JPA. |
| AE-4 | Provide a knowledgeable expert(s) to identify new information, if any, related to the potential impacts to ephemeral streams in the vicinity of the cooling tower area from construction of Unit 3. | Resolved for audit. | Resolved for audit |
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|--------------|--|--|--|
| TE- | Terrestrial Ecology M. Masnik / M. Sackschewsky | | |
| TE-1 | Provide a knowledgeable expert(s) to determine if new information is available regarding important species in any correspondence with U.S. Fish and Wildlife Service (USFWS), Virginia Department of Game and Inland Fisheries (VDGIF), and Virginia Natural Heritage Program (VNHP) over the past two years. | Resolved for audit. | Resolved for audit |
| TE-2 | Provide a knowledgeable expert(s) to provide information regarding the results of the springtime survey for Eppling's hedge-nettle. | Applicant to provide a copy of the June 2010 species specific surveys for the Eppling's hedge-nettle within the Blanton Conservation area in the reading room. | Requested item will be available to reading room on or about Feb 24. |
| TE-3 | Provide a knowledgeable expert(s) to more specifically identify new information regarding the evaluation of the potential presence of endangered, threatened, or otherwise rare species along the large component transport route or at the barge unloading site on the Mattaponi River. Make available any correspondence with State (VDGIF and VNHP) and federal (USFWS and National Marine Fisheries Service [NMFS]) agencies with regard to this evaluation. | Resolved for audit. | Resolved for audit |
| TE-4 | Make available GIS shapefiles of the large component transport road for the purpose of using as overlays to determine whether there is potential for impact to endangered species in the Walkerton area or elsewhere along the route. Make available copies of the results or reports from any ecological surveys for Federal or State endangered or threatened species along the proposed route and at the proposed Walkerton unloading station. | Resolved for audit. | Resolved for audit |

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|--------------|--|--|--|
| TE-5 | Provide a knowledgeable expert(s) to more specifically identify any changes to the expected quantity and pattern of salt deposition from the Ultimate Heat Sink (UHS) cooling towers – including interactions with the main cooling tower. | Staff will review FSAR RAI 02.03.02-2 to be revised based on new technology. Revised RAI response will include new deposition rates. Applicant to provide contour deposition map(s) from Bechtel calc package in the reading room. | Requested item will be available to reading room on or about Feb 24. |
| TE-6 | Provide a knowledgeable expert(s) to discuss the status of coordination with the U.S. Army Corps of Engineers (USACE) regarding onsite and additional property wetlands and the 404 permit. | Resolved for audit. | Resolved for audit |
| TE-7 | Provide a knowledgeable expert(s) to discuss the status of coordination with the USACE regarding wetlands potentially affected by lake level changes due to increased operating elevation (i.e., 250.25 ft) or operation of Unit 3. | Applicant to provide shoreline delineation report. Specifically the two summary maps and E-2 key sheet in the shoreline wetland delineation report. | Information is publicly available. Resolved for audit |
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| S/EJ- | Socioeconomics/Environmental Justice D. Mussatti / M. Niemeyer | | |
| S/EJ-1 | Provide a knowledgeable expert(s) to identify new information, if any, on local roads and traffic in the North Anna vicinity, specifically, Route 208 and 606 and any updates on construction or future plans. | Applicant to provide VDOT traffic study in reading room with VDOT approval if not publicly available. | No answer from VDOT yet. Expected to be coming at a later date. |

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| S/EJ-2 | Provide a knowledgeable expert(s) to identify new information, if any, on the potential impact of the large component transport road and any related construction to any EJ communities. | Resolved for audit. | Resolved for audit |
| S/EJ-3 | Provide a knowledgeable expert(s) to identify new information, if any, on the construction workforce estimate for Unit 3. | Resolved for audit. | Resolved for audit |
| S/EJ-4 | Provide a knowledgeable expert(s) to identify new information, if any, on the aesthetic impacts and recreational implications of the 500kV transmission lines. | Resolved for audit. | Resolved for audit |
| CB / NFP | Cost Benefit / Need for Power D. Mussatti / M. Niemeyer | | |
| CB / NFP-1 | Provide a knowledgeable expert(s) to identify how updated cost estimates for Unit 3 compare to recently published estimates such as the U.S. Department of Energy/ Energy Information Administration (DOE/EIA) recently published costs. | Resolved for audit. | Resolved for audit |
| NFP-2 | Provide a knowledgeable expert(s) to identify new information, if any, related to the updated power demand, supply forecasts, and the reserve margin provided in the need for power analysis. | Resolved for audit. | Resolved for audit |
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| CR- | Cultural Resources J. Cushing / T. O'Neil | | |
| CR-1 | Make available any new consultation correspondence and/or cultural resources reports that have been generated by the applicant and any responses to these from Tribes, SHPO and interested parties regarding the COLA since the last letter received by NRC from the SHPO (2/3/ 2009) that has not already been provided to the NRC (ER Table 1.2-1). Specifically, in regards to avoidance plan for archaeological site 44SP0618, be prepared to discuss the assessment of eligibility and effect to architectural resources 088-054, 088-0169, and 088-0133, the status of avoidance plans for 44LS0233, and any formal cultural resources surveys, analysis and consultation completed for the large component transport route. | <p>Applicant will place Cultural and Historic Resource Management Plan in the Reading room.</p> <p>Applicant will place in reading room access database list of cultural historic reports surveys.</p> <p>Applicant to place any new reports that have been generated by the applicant and any response to these from Tribes, SHPO and interested parties after the Feb 2, 2009 that has not already been provided to the NRC in the reading room.</p> | Copies of Correspondence with SHPO; status of communication with tribes (emails); and 2 lists of consultation activities will be available in reading room on or about Feb 24. Draft copy of cultural resource plan will be available at a later date. |
| CR-2 | Provide a knowledgeable expert to identify new information, if any to land acreage to be disturbed and the effect on cultural resources. | Resolved for audit. | Resolved for audit |
| CR-3 | Provide a knowledgeable expert to identify any changes to Dominion's management plans or procedures for those assertions made in their August 2008 letter to the NRC regarding cultural resources and interactions with VDHR. | Resolved for audit. | Resolved for audit |

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| MET- | Meteorology V. Ramsdell / J. Flaherty | | |
| MET-1 | Provide a knowledgeable expert(s) to discuss the new and significant information review for Section 2.3 (Meteorology and Air Quality), including any changes to the Exclusion Area Boundary (EAB), low population zone (LPZ), or site receptors (nearest garden, goat, cow) distances that might change the site χ /Qs or D/Qs. | Applicant to provide clarification and a description of changes and evaluation to support their conclusions. | Applicant to provide this documentation in reading room as an update to IAM files. |
| MET-2 | Make available any updated evaluation of air quality attainment status for counties in the vicinity of North Anna Power Station site. | Resolved for audit. | Resolved for audit |
| MET-3 | Provide a knowledgeable expert(s) to identify the locations of release points for design basis accidents (DBAs) for the Advanced Pressure Water Reactor (APWR) relative to those assumed for an Economic Simplified Boiling Water Reactor (ESBWR). Identify any instance in which the distances to the EAB and LPZ were affected by the change in reactor designs. | Resolved for audit. | Resolved for audit |
| MET-4 | Make available all electronic input and output files for XOQDOQ used to calculate updated long-term χ /Q and D/Q. | Resolved for audit. | Resolved for audit |
| MET-5 | Provide a knowledgeable expert(s) prepared to discuss the applicant's approach to the new and significant information review of those calculations in the revised ER which used the 1996-1998 meteorological data collected at the site." | Applicant to describe process for determining data is still representative and provide a brief summary of results. | To be discussed in clarification phone call. |

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| MET-6 | Provide a knowledgeable expert(s) to provide new information regarding changes in expected air-related emissions, either from the cooling towers or supplementary systems related to the change from ESBWR to APWR. | Applicant to provide a pollutant emissions table for APWR operations. | This is acceptable to provide estimates based on scaling. Applicant working on obtaining this information; not yet available. |
| MET-7 | Provide a knowledgeable expert(s) to more specifically identify new information regarding the confirmatory study discussed in ER Rev. 3 Section 5.3. | Resolved for audit. | Resolved for audit |
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| RHH- | Radiological Human Health/Fuel Cycle/Waste Management R. Emch / G. Stoetzel | | |
| RHH-1 | Provide a knowledgeable expert(s) to more specifically identify new information regarding the routine liquid radioactive effluent source term for the APWR provided in Table 3.1-10 and Table 5.4-1 in ER Rev. 3. | Resolved for audit. | Resolved for audit |
| RHH-2 | Provide a knowledgeable expert(s) to more specifically identify new information relating to the sources of direct radiation from the existing two units and Independent Spent Fuel Storage Installation (ISFSI) to include data from protected area thermoluminescent dosimeters (TLDs) for the past two years. | Resolved for audit. | Resolved for audit |
| RHH-3 | Provide a knowledgeable expert(s) to more specifically identify new information relating to the orientation of the proposed APWR unit on the ESP site. | Resolved for audit. | Resolved for audit |

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| RHH-4 | Provide a knowledgeable expert(s) to more specifically identify new information relating to the impact of the "greater than plant parameter envelope (PPE)" tritium liquid effluent release source term on Lake Anna tritium concentrations. (see H-2) | See RHH-10 | Upon examination of RHH-10 response, NRC will inform applicant of any further information needs.. |
| RHH-5 | Provide a knowledgeable expert(s) to more specifically identify new information regarding the gaseous effluent release points for the APWR. | Resolved for audit. | Resolved for audit |
| RHH-6 | Provide a knowledgeable expert(s) to specifically identify new information related to the calculation of dose to the maximally exposed individual from routine gaseous effluents provided in Tables 5.4-4, 5.4-5, and 5.4-6 in ER Rev. 3. | Resolved for audit. | Resolved for audit |
| RHH-7 | Provide a knowledgeable expert(s) to more specifically identify the assumptions used to determine the gaseous effluent contribution to biota dose. | Resolved for audit. | Resolved for audit |
| RHH-8 | Provide a knowledgeable expert(s) to more specifically identify new information related to how low level radwaste will be handled and disposed of. | Applicant to provide copy of shielding dose calc package (URS Calculation No. 29376-IRSF-25-05-500-002) for the Interim Radwaste Storage Facility (IRSF) in reading room. | Requested item will be available to reading room on or about Feb 24. |
| RHH-9 | Provide a knowledgeable expert(s) to more specifically identify new information related to the calculation of dose to the maximally exposed individual from routine liquid effluents provided in Tables 5.4-2 and 5.4-6 in ER Rev. 3. | Resolved for audit. | Resolved for audit |

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| RHH-10 | Make available all electronic input and output files for the LADTAP II code calculation of annual liquid effluent doses to the maximally exposed individual. | <p>1) Applicant to provide copy of Bechtel's calculation package (Calc # 25161-M-501) on the Radiological Impacts of APWR Normal Operation dated April 29, 2010 in the reading room.</p> <p>2) Applicant will provide electronic input and output files for the LADTAP II code. Courtesy copy to EnvPM</p> | <p>1) Requested item will be available to reading room on or about Feb 24.</p> <p>2) Electron submittal of LADTAP II code input and output files for docket will be submitted soon.</p> |
| RHH-11 | Make available all electronic input and output files for the GASPARE II code calculation of annual gaseous effluent doses to the maximally exposed individual. | <p>Applicant will provide electronic input and output files for GASPARE II code. Courtesy copy to EnvPM</p> | <p>Electron submittal of GASPARE II code input and output files will be submitted soon.</p> |
| RHH-12 | Make available any technical basis documents or calculation packages showing the assessment of the dose contribution from the Interim Radwaste Storage Facility (IRSF) designed for on-site storage of radiological waste generated during 10 years of normal operation including the methodology, basis, and assumptions used to develop the source term and calculate the doses. | <p>Resolved for audit.</p> | <p>Resolved for audit</p> |
| RHH-13 | Make available the reports on the liquid and gaseous dose contributions from existing units mentioned in Notes 2 and 3 of Table 5.4-6 in ER Rev. 3. | <p>Resolved for audit.</p> | <p>Resolved for audit</p> |

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| RHH-14 | Provide a knowledgeable expert(s) to identify new information, if any, regarding the potential for exposure by construction workers to radioactive materials due to material buried under 10 CFR 20.304 or 10 CFR 20.2002, or as a result of construction activities at approved release points. | Resolved for audit. | Resolved for audit |
| RHH-15 | Provide a knowledgeable expert(s) to identify new information, if any regarding the sources of direct radiation not currently described, such as; the steam generator storage facility, the south side of the existing Units 1 and 2, near at the proposed Unit 3 discharge structure, onsite shielded storage container (OSSC) storage locations, and replaced Reactor Head storage areas. | Resolved for audit. | Resolved for audit |
| RHH-16 | Provide a knowledgeable expert(s) to identify new information, if any, regarding the potential for exposure by construction workers to migration of radioactive materials deposited from leakage or spills at the existing units to the construction site. | Resolved for audit. | Resolved for audit |
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| ACC- | Accidents R. Emch / V. Ramsdell | | |
| ACC-1 | Provide a knowledgeable expert(s) to discuss the US-APWR DBA analyses. | Resolved for audit. | Resolved for audit |

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| ACC-2 | Provide a knowledgeable expert(s) to discuss the 0 to 2 hr isotopic release rates for APWR DBAs presented in Tables 3.0-3a, 3.0-3b, 3.0-4, 3.0-5, 3.0-6, 3.0-7a, 3.0-7b, 3.0-8, and 3.0-9 in ER Rev. 3. | <p>The 0 to 2 hr isotopic release rates for APWR DBAs are not available in the DCD. NRC will request this in an RAI.</p> <p>Applicant to provide a revised description for how DBAs were calculated in the ER.</p> <p>Applicant to provide isotopic source terms for the 2 hr period giving the high doses at the EAB for those DBA with releases extending more than 2 hr.</p> <p>Applicant to provide bases for calculation of the LPZ DBA doses using the ratio method</p> <p>Applicant to provide description for how the DBA doses were calculated.</p> <p>Applicant to provide documentation of the changes in EAB distances and support for the conclusion that the changes in distance do not alter the DBA X/Qs. (MET-1)</p> | To be discussed in clarification phone call. |

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|--------------|--|---|---|
| ACC-3 | Provide a knowledgeable expert(s) to discuss severe accident consequence assessments based on updated site information and severe accident source terms for the US-APWR. | Resolved for audit. | Resolved for audit |
| ACC-4 | Make available the input to and output from a revised severe accident consequence assessment (MACCS runs). | Applicant to provide input and output files for MACCS runs. As new simulations are completed output will be provided. | Electronic files to be sent after clarification phone call |
| ACC-5 | Provide a knowledgeable expert(s) to identify new information, if any, regarding the site and regional population, land use, and economic data used to evaluate the severe accident consequences for Unit 3. | Applicant to provide a documentation to support the use of site-specific information that is more than 10 years old in APWR consequence assessments.. | To be discussed in clarification phone call. |
| ACC-6 | Provide a knowledgeable expert(s) to discuss the use of core damage frequencies for internally initiated events, internal flood events, internal fire events, and low power and shutdown events to estimate severe accident risks. | Applicant to provide consequence information or all consequence categories in NUREG-1811 Table 5-19. Applicant to verify calculation of average individual latent cancer fatality risk for consistency with the NRC's safety goals set forth in the safety goals policy statement (51 FR 30028). | This can be provided in the short term to the reading room. Will be discussed in call |

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| ACC-7 | Provide a knowledgeable expert(s) to discuss the consequences and risks associated with externally initiated events. | Resolved for audit. | Resolved for audit |
| ACC-8 | Provide a knowledgeable expert(s) to discuss the surface water pathway severe accident consequences for a US-APWR at the NAPS site. | Resolved for audit. | Resolved for audit |
| ACC-9 | Provide a knowledgeable expert(s) to discuss the groundwater pathway severe accident consequences for an US-APWR at the NAPS site. | Resolved for audit. | Resolved for audit |
| ACC-10 | Provide a knowledgeable expert(s) to discuss input and output files for PAVAN calculations* | Applicant to provide a statement that input to PAVAN has not changed. | Applicant to provide this documentation in reading room as an update to IAM files. |
| ACC-11 | Clarification of follow up item from SAMA discussions held at audit, not captured in audit closeout discussions. | Request the applicant address the difference in capacity factors used in scaling of the cost for replacement power for the APWR design; Applicant to update the SAMA analysis to account for difference in capacity factors, if appropriate; Request the applicant address the issue of inconsistent cost estimates. The SAMA costs appear to be from 2007. (Neither Rev. 3 of the Dominion ER nor the DCD ER submitted in support of the MHI application for certification of the APWR design considers the effects of inflation from the 1993 time frame of the onsite decontamination and replacement power cost estimates in NUREG/BR-0184 to the time frame for the SAMA costs) | |
| | *Added during audit | | |

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| NRHH- | Non-Radiological Human Health Williamson / L. Aston A. | | |
| NRHH-1 | Make available any update of communications with VDEQ and VDH regarding etiological agents (disease-causing microorganisms) in the receiving waters (i.e. beach closures). | Resolved for audit. | Resolved |

The NRC staff did not have any information needs for alternatives, land use, or transportation.