August 14, 2007

MEMORANDUM TO: H. Brent Clayton, Chief
Environmental Technical Support Branch
Division of Site and Environmental Reviews
Office of New Reactors

FROM: Robert G. Schaaf, Senior Project Manager ***/RA/***
Environmental Projects Branch A
Division of Site and Environmental Reviews
Office of New Reactors

SUBJECT: TRIP REPORT - JUNE 5 - 7, 2007, PRE-APPLICATION VISIT FOR A COMBINED LICENSE APPLICATION AT THE CALVERT CLIFFS SITE

This report summarizes the staff's June 5 - 7, 2007, pre-application visit related to the environmental portion of a future combined license (COL) application for the Calvert Cliffs site. UniStar Nuclear Operating Company (UniStar) has indicated its intent to submit a COL application for this site late in 2007 or early 2008. UniStar also indicated its intent to submit the environmental report (ER) associated with this application by July 13, 2007. The ER was received by the staff on July 16, 2007 and is undergoing acceptance review.

The purpose of this visit was to allow the staff to gather information regarding the applicant's plans for the COL application, to become familiar with the site, and to assess the readiness of the applicant's ER, a key component of the COL application. The visit took place at the site in Calvert County, Maryland, and the UniStar corporate offices in Baltimore, MD. Enclosure 1 provides a list of attendees. Enclosure 2 is the agenda used during the visit. Enclosure 3 is a summary of the more significant issues that were discussed.

The next pre-application activity in which the environmental staff will be involved will be a public information meeting scheduled for August 14, 2007.

Project No.: 746

Enclosures: As stated

CONTACT: Robert Schaaf, NRO/DSER/RAP1
(301) 415-1312

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ADAMS ACCESSION NUMBER: ML072250125

OFFICE	DSER/RAP1/PM	DSER/RAP1/BC
NAME	Rschaaf RGS w/ changes	WBurton
DATE	08/13/07	08/14/07

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Calvert Cliffs Combined License
Pre-Application Visit on June 5 - 7, 2007

List of Attendees

NAME	AFFILIATION
Robert Schaaf	U.S. Nuclear Regulatory Commission (NRC)
Paul Kallan	NRC
Laura Quinn	NRC
Michael Masnik	NRC
Dan Mussatti	NRC
Allen Fetter	NRC
Alan Bjornsen	NRC
Larry Burkhart	NRC
Joe Hoch	NRC
Thomas Galletta	NRC
Hosung Ahn	NRC
Henry Jones	NRC
Getachew Tesfaye	NRC
Joe Colaccino	NRC
Mary Ann Parkhurst	Pacific Northwest National Laboratory (PNNL)
Tara O'Neil	PNNL
Gene Whelan	PNNL
Adam Davis	PNNL
Corey Duberstein	PNNL
Jeff Ward	PNNL
Roy Kropp	PNNL
Bill Sandusky	PNNL
Michael Smith	PNNL
Mike Scott	PNNL
Tom Secrest	PNNL
Paul Hendrickson	PNNL

NAME	AFFILIATION
Rod Krich	UniStar Nuclear (UniStar)
Gerry van Noordennen	UniStar
Carla Logan	UniStar
Dan Green	UniStar
Karl Gross	UniStar
Christine Papageorgis	UniStar
John Price	UniStar
Ed Miller	Constellation
Brenda Nuse	Constellation
Jim Burkman	Constellation
Joe Mihalcik	Constellation
Richard Connelly	UniStar Contractors
Tamar Cerafici	UniStar Contractors
Mark Hunter	Constellation Generation
Tom Roberts	Constellation Generation
Brian Allen	Constellation Generation
Clyde Thomas	Constellation Generation
Rich McLain	Maryland Department of Natural Resources
Jerry McLane	Bechtel
Yifan Zheng	Bechtel
Mustofa Samad	Bechtel
Melissa Dubinsky	Paul C. Rizzo Associates
Joe Pavletich	TetraTech NUS
Kathy Roxlau	TetraTech NUS
Joe Pavlatich	TetraTech NUS
Ross Dimmick	TetraTech NUS
Barbara Munford	GAI Consultants Inc
B. Knisley	Randolph-Macon College
Greg Poremba	Aliant

NAME	AFFILIATION
Melissa Dubrinski	Amerion
Mark Strum	AREVA NP Inc. (Areva)
Pedro Perez	Areva
Richard Turcotte	Areva
Midi Surram	Areva
Andrew Hodgdon	Areva
Barbara Hubbard	Areva
David Causey	Areva
Craig Schmiesing	Areva
Chad Bryant	Areva
Adam Mancini	Areva

Agenda
Calvert Cliffs NRC Environmental Staff Site Visit
Locations: Calvert Cliffs Site, Calvert County, MD;
UniStar Corporate Offices, Baltimore, MD
June 5 - 7, 2007

Tuesday, June 5, 2007

0800 Meet at Calvert Cliffs site in Lusby, MD

- Welcome
- Introductions
- Opening Remarks
- Orientation to Calvert Cliffs Site, Health and Safety Briefing

0900 General Tour of Site including

- Onsite transmission line corridor
- Proposed locations for
  - Cooling Tower
  - Switchyard
  - Nuclear Island
  - Intake Structure
  - Discharge
- Barge Dock

1200 Lunch

1300 Presentations

- Site Selection Process
- Status of Environmental Monitoring
- State and Local Regulators and Permitting

1400 Specialized Tours and Discussions

- Meteorological Tower/Air Quality
- Aquatic & Terrestrial Ecology
- Hydrology
- Cultural Resources

1700 General Discussion and Concluding Remarks

1730 Adjourn

Wednesday, June 6, 2007

0900 Meet at UniStar offices in Baltimore, MD

Begin assessment of draft Environmental Report and supporting documents

1700 Adjourn

Thursday, June 7, 2007

0800 Meet at UniStar offices in Baltimore, MD

Continue document assessment (for those disciplines that need to)

1530 General Discussion and Concluding Remarks

1600 Adjourn

Additional Information Summarizing the
Calvert Cliffs NRC Environmental Staff Site Visit
Locations: Calvert Cliffs Site, Calvert County, MD;
UniStar Corporate Offices, Baltimore, MD
June 5 - 7, 2007

The areas around the site that were visited by the staff are listed in the Agenda (Enclosure 2). In addition, the staff made initial contacts with the following individuals/organizations:

- Dr. Thomas Miller, Dr. Ed Houde, Chesapeake Biological Laboratory (Fisheries)
- Linda Vassallo, Director, Calvert County Department of Economic Development
- Greg Bowen Director of Planning, Calvert County Planning and Zoning
- Terry Carlson, Director, Calvert County Department of Public Works
- Colonel Peter Dunbar, Director, Power Plant Research Program, Maryland Department of Natural Resources
- Rich McLean, Energy Resource Administrator, Power Plant Research Program, Maryland Department of Natural Resources
- Susan Gray, Power Plant Research Program, Maryland Department of Natural Resources
- Lee Starkloff, Deputy Director, Office of Traffic and Safety, Maryland Department of Transportation
- Elizabeth "Beth" Cole, Section 106 Coordinator, Maryland Department of Planning and Historical Trust
- Dixie Henry, archaeologist
- Jonathon Sager, Historic Architect

General Observations

The staff noted that many of the environmental report (ER) sections lacked sufficient detail, such as data, calculations, analyses, or reference citations, to support assessment of potential environmental impacts. In general, the staff noted in its discussions with applicant personnel that the applicant has the relevant supporting data, analyses, references; and appeared to have a good understanding of the issues to be addressed in the environmental review. The staff noted its concern that significant effort appeared to be needed to incorporate this information into the ER in the time remaining before it is submitted.

The staff noted several areas where the information needed to support evaluation of environmental impacts might not be available in time to support the staff's review. In particular, the staff identified data availability concerns in the areas of radiological impacts, accident analyses, and cultural resources, as discussed below.

The Design Control Document (DCD) for the U.S. EPR reactor design has not been submitted and initiation of the certification process is in its early stages; therefore, the level of detail that is usually included in a DCD may not be available for reference at the time the application is scheduled to be submitted. As a result, the applicant may be challenged in providing sufficient detail in the ER and related documentation supporting a partial application for the staff to effectively review the radiological impacts and accident analyses.

The applicant has been in consultation with the State Historic Preservation Office (SHPO) and has conducted Phase I surveys under the National Historic Preservation Action Section 106

process. This process may not be complete for several months at a minimum depending upon communications between the applicant and the SHPO as it relates to the field work during recovery. It may be difficult to make a determination of impact to the cultural resources if the applicant is still in the process of collecting information to make a determination of eligibility for listing under the National Register.

Meteorology and Air Quality

No ambient atmospheric moisture data of any form is collected onsite. The applicant is using data collected at the Patuxent Naval Air Station (NAS) to estimate the impacts resulting from operation of the cooling tower associated with the proposed unit. The staff expects the applicant to provide information to demonstrate that moisture data from Patuxent NAS is sufficiently representative of site conditions.

Hydrology/Water Use and Quality

During the operation of the plant, fresh water will be supplied by a desalinization plant, and the ER includes a water mass balance diagram that describes the operational aspects of providing water to the proposed unit. The staff expects a similar water mass balance discussion or diagram to be developed for the construction phase to indicate how much fresh water will be provided by additional pumping from the Aquia aquifer and how much water will be brought in from offsite.

Terrestrial and Aquatic Ecology

No formal surveys were conducted to document eagle nesting activities within the proposed project area, nor were mitigation measures identified for the removal of a tree containing an apparently abandoned bald eagle nest.

Elimination of existing wetlands was quantified, but no discussion of impacts to wetlands outside the construction footprint was presented. Extensive cut-and-fill activities may alter surface and shallow subsurface water flow dramatically, but these impacts were not discussed as they relate to wetlands. In this and other aspects, options for mitigation of impacts were discussed, but at this point, commitments were not identified, which would prevent an evaluation of any mitigating actions.

The ER descriptions of ecological conditions in aquatic habitats lacked the detail necessary to allow an estimate of the potential impacts to be described, especially those to higher-level ecosystem interactions, such as food webs. For example, the infaunal (aquatic animals living in the substrate of a water body, especially a soft sea bottom) communities near the Barge Dock, which were characterized by data from only three stations, were described in terms of the Benthic Index of Biotic Integrity, but this description did not contain details of the community constituents necessary to evaluate potential higher-level impacts. The data necessary is contained in an internal technical report to which the staff will need access to support key findings.

Fish and plankton communities in the Bay near the Barge Dock were not described in the ER, nor were any baseline data on the communities collected. The ER did discuss fisheries

resources on a Bay-wide scale, but this may not be adequate to evaluate potential local-scale impacts.

Radiological Issues and Accident Analysis

Sections on groundwater and plume monitoring were incomplete, awaiting new guidance from industry organizations and NRC, which is expected to be completed in July or August 2007 for incorporation into the ER. The staff noted that use of nonstandard codes for population dose calculations is likely to complicate the review process. The staff expects the applicant to provide justification to support use of the subject codes. Also, the staff expects the applicant to provide the specific chemical constituents of the radiological waste system effluent.

The staff expects additional justification to support the proposed approach of using varied meteorological data sets for the design basis accident, severe accident, and normal operations analyses.

Alternative Sites

The general alternative site selection process seemed well thought out. The staff expects clarification of the sites selected to ensure that at least a minimum number of reasonable alternative sites are identified and evaluated. The staff also expects the applicant to clarify its selection of the region of interest used in the site selection process.

Coordination with the State of Maryland

The State of Maryland Department of Natural Resources (DNR) has a long-standing program to evaluate the environmental, economic, and cultural resources impacts related to the construction and operation of power plants, known as the Power Plant Research Program (PPRP). The PPRP will be actively involved in the permitting process for the proposed new plant. The applicant must obtain a Certificate of Public Convenience and Necessity (CPCN) from the Maryland Public Service Commission (PSC). The PPRP's analysis will provide a basis for the PSC's decision. The applicant will submit a separate environmental analysis document to the state to support the PPRP’s analysis.

There are likely to be coordination issues regarding the simultaneously conducted PPRP/CPCN process and the NRC's COL application review process. The staff will need to ensure that issues that arise in the State process are reflected, as appropriate, in the NRC EIS.

Socioeconomic and Environmental Justice

Census mapping to identify minority and low income groups for environmental justice analysis has been done, but it appears that additional efforts to further identify minority and low income populations have not been conducted. For example, the applicant has conducted extensive outreach with State of Maryland and Calvert County officials over the last two years; however, direct evidence of an outreach attempt to engage minority and low income communities for environmental justice purposes was not presented.