



August 16, 2007  
25237-000-T7C-GAMC-00250

Mr. R. Krich  
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Baltimore, MD 21202

Subject: **CCNPP Cooling System Selection and Site Layout Study Addendum**  
Constellation COLA - Bechtel Job Number 25237  
PO Number: 500117

Dear Mr. Krich:

Attached for your use is the addendum to the Calvert Cliffs Nuclear Power Plant Cooling System Selection and Site Layout Study. The original basis for the Cooling System Selection and Site Layout Study issued in March 2006 was for locating 2 U.S. EPR units on the Calvert Cliffs site near Lusby, MD. Since issuance of this study, UniStar Nuclear has changed the basis for licensing activities to a single Unit at the Calvert Cliffs site. As a result, this addendum was prepared to evaluate any resulting changes in cooling system and site selection due to a change in basis from two Units to one.

Previously, a multi-discipline team was assembled to provide consulting input for evaluation of the CCNPP site. A technical evaluation was made regarding the cooling system selection and a rigorous analysis was made of various site layouts. Since it is not feasible to reassemble the team that scored various site layout options, subjective arguments are developed from the evaluation criteria and results to evaluate the layout of a single unit versus two units.

The evaluation concludes that the selection of a close cooling water system and southern layout option from the previous study are valid given the decision for licensing a single unit at the CCNPP site.

If you have any questions regarding the foregoing, please contact me at 301-228-8655 or David Murphy at 301-228-6587

Sincerely,  
BECHTEL POWER CORPORATION

Nar Goel  
Project Manager

25237-000-T7C-GAMC-00250

August 16, 2007

Mr. Rod Krich

Page 2 of 2

SSR:;gcs

Enclosure: Addendum to CCNPP Cooling System Selection / Site Layout Study (3 pages)

Action Summary

Response Required: No

Due Date: N/A

Bechtel AIL/Schedule: N/A

cc:

Bechtel

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D. Murphy

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✓

## Addendum

### Cooling System Selection /Site Layout Study

#### Purpose

The original basis for the Cooling System Selection and Site Layout Study issued in March 2006 was for locating 2 U.S. EPR units on the Calvert Cliffs site near Lusby, MD. Since issuance of this study, UniStar Nuclear has changed the basis for licensing activities to a single Unit at the Calvert Cliffs site. As a result, this addendum is prepared to evaluate any changes to the cooling system or site selection required by a change of the basis from two Units to one.

#### Background / Methodology

Previously, a multi-discipline team was assembled to provide consulting input for evaluation of the CCNPP site. A technical evaluation was made regarding the cooling system selection and a rigorous analysis was made of various site layouts.

Since it is not feasible to reassemble the team that scored various site layout options, subjective arguments will be developed from the evaluation criteria and results to evaluate the layout of a single unit versus two units.

#### Evaluation of Cooling Water System

Based on the information compiled regarding applicable federal and state regulatory requirements, the feasibility of implementing various compliance alternatives, and the risks and impacts to Project economics and schedule, changing the basis from two units to one would not result in a change to the cooling water system selected. Due to the extremely large volume of water needed to supply a once through cooling system for a single unit – approximately 2.5 million gpm, an enormous intake and discharge structure with offshore pipes would be required. This configuration was determined to be cost-prohibitive for a two unit plant and the same reasoning would apply to a single unit.

Therefore, a closed cooling system (i.e, cooling towers) remains the most feasible selection for a single unit.

#### Site Layout Selection

Using the exclusion criteria developed in section 4.1, a single unit would not affect the decision to avoid these locations. A single unit could not be located west of the existing units in the Lake Davies area. This area represents unknown subsurface conditions especially considering the extreme loading from a single reactor building and would require excavation and backfill with suitable fill material.

In the original study, evaluation criteria were developed based on the following eight categories:

1. Environmental
2. Land use and zoning (State, Local)
3. Construction Considerations
4. Construction Facilities
5. Switchyard /Transmission Lines
6. Security
7. Permanent Facility Considerations
8. Impact to Existing Facilities or Structures

The following is a subjective evaluation of each category based on a single EPR unit.

#### *Environmental*

Changing the basis to one unit would not affect the results of the evaluation of the north and south locations. The north location remains not as desirable as compared to the southern location due to its impact to probable wetlands and historic and cultural sites since the single unit foot print continues to affect the wetlands and historic/cultural sites.

#### *Land use and zoning (State, Local)*

Due to space requirements for the power block, switchyard, and cooling tower, the northern location impacts the 1000' critical area more than the southern location. Changing the basis to a single unit would not change this negative impact.

#### *Construction Considerations*

Changing the basis to a single unit would not change the previous conclusion with regard to construction considerations since the southern location allows for better segregation of construction traffic and activities from the operating plant traffic and activities than a northern location.

#### *Construction Facilities*

Construction facilities were evaluated based on distance from the barge area and the need to cross under the existing transmission lines for all construction activities for a northern site. Changing the basis to a single unit does not change this negative impact.

#### *Switchyard /Transmission Lines*

The northern option required extending the existing switchyard south and reconfiguring the transmission lines south to the new bay to allow for space on the

north end to connect with the new switchyard. Also the northern option presents the possibility for plume and drift effects from the cooling tower on the main transmission lines.

*Security*

Changing the basis to a single unit does not change the previous conclusion where a northern layout may facilitate a single site protected area connected with CCNPP Units 1 and 2 and a southern site would require a separate protected area due to distance and location from CCNPP Units 1 and 2.

*Permanent Facility Considerations*

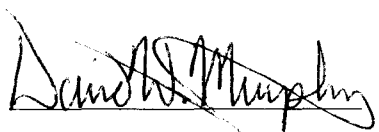
Changing the basis to a single unit would not change the previous conclusion for the northern location where special compensatory measures may be necessary during construction due to the location of the new unit and construction roads near the existing diesel generator buildings.

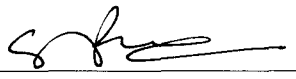
*Impact to Existing Facilities or Structures*

Impacts to existing facilities remain the same for either locations whether a single unit is considered or two. Therefore, a change in basis to one unit does not change the previous conclusion.

Conclusion

Changing the basis of the cooling system selection / site layout study from two units to one does not affect the overall decision to recommend a closed cooling water system along with the southern layout option as the base case for which to conduct further site investigation studies.

Prepared:  8/16/07

Verified:  8/16/07