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UniStar
NUCLEAR ENERGY

10 CFR 50.4
10 CFR 52.79

September 27, 2013

UN#13-127

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: UniStar Nuclear Energy, NRC Docket No. 52-016
Response to Request for Additional Information for the
Calvert Cliffs Nuclear Power Plant, Unit 3,
RAI 394, Other Regulatory Considerations

References:
1) Surinder Arora (NRC) to Paul Infanger (UniStar Nuclear Energy), "CCNPP3 - FINAL RAI 394 LB1 7171," email dated July 29, 2013

2) UniStar Nuclear Energy Letter UN#13-116, from Mark T. Finley to Document Control Desk, U.S. NRC, RAI 394, Other Regulatory Considerations, dated August 16, 2013

The purpose of this letter is to respond to the request for additional information (RAI) identified in the NRC e-mail correspondence to UniStar Nuclear Energy, dated July 29, 2013 (Reference 1). RAI 394 addresses Other Regulatory Considerations, as discussed in Section 1.1.1 of the Final Safety Analysis Report (FSAR), as submitted in Part 2 of the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA), Revision 9.

Reference 2 indicated that a response to RAI 394, Question 01.05-1 would be provided to the NRC by September 27, 2013.

Enclosure 1 provides our response to RAI 394, Question 01.05-1, and includes revised COLA content. Enclosure 2 provides the COLA impact of the response to RAI 394, Question 01.05-1. A Licensing Basis Document Change Request has been initiated to incorporate these changes into a future revision of the COLA.

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Enclosure 3 provides a table of changes to the CCNPP Unit 3 COLA associated with the RAI 394, Question 01.05-1 response.

Our response does not include any new regulatory commitments. This letter and its enclosures do not contain any sensitive or proprietary information.

If there are any questions regarding this transmittal, please contact me at (410) 369-1907 or Mr. Paul Infanger at (410) 369-1987.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on September 27, 2013

For

Mark T. Finley

Enclosures:
1) Response to NRC Request for Additional Information RAI 394, Other Regulatory Considerations, Calvert Cliffs Nuclear Power Plant, Unit 3
2) Changes to CCNPP Unit 3 COLA Associated with the Response to RAI 394, Question 01.05-1, Calvert Cliffs Nuclear Power Plant, Unit 3
3) Table of Changes to CCNPP Unit 3 COLA Associated with the Response to RAI 394, Question 01.05-1, Calvert Cliffs Nuclear Power Plant, Unit 3

cc: Surinder Arora, NRC Project Manager, U.S. EPR Projects Branch
Laura Quinn-Willingham, NRC Environmental Project Manager, U.S. EPR COL Application
Tomeka Terry, NRC Environmental Project Manager, U.S. EPR COL Application
Amy Snyder, NRC Project Manager, U.S. EPR DC Application, (w/o enclosures)
Patricia Holahan, Acting Deputy Regional Administrator, NRC Region II, (w/o enclosures)
Silas Kennedy, U.S. NRC Resident Inspector, CCNPP, Units 1 and 2,
David Lew, Deputy Regional Administrator, NRC Region I (w/o enclosures)

Enclosure 1

Response to NRC Request for Additional Information
RAI 394, Other Regulatory Considerations,
Calvert Cliffs Nuclear Power Plant, Unit 3

RAI No. 394

Question 01.05-1

10 CFR 52.79(a)(31) requires that COL applicants include the following information:

For nuclear power plants to be operated on multi-unit sites, an evaluation of the potential hazards to the structures, systems, and components important to safety of operating units resulting from construction activities, as well as a description of the managerial and administrative controls to be used to provide assurance that the limiting conditions for operation are not exceeded as a result of construction activities at the multi-unit sites.

The requirement in 10 CFR 52.79(a)(31) was included in the 2007 update to Part 52 (72 FR 49352) as part of the changes necessary to conform with Part 50 requirements. While the Calvert Cliffs Unit 3 combined license application is a single unit application, the proximity of Calvert Cliffs Unit 3 to the operating Calvert Cliffs Units 1 and 2 makes it part of a multiunit site. Accordingly, the elements of the multiunit site evaluation need to be addressed in your application.

Based on the information contained in the FSAR, Section 1.1.1, the applicant is requested to provide additional information for inclusion in the FSAR that addresses the issues described in the ISG COL-ISG-022 and/or propose suitable licensing conditions to establish the necessary plans and programs to fully address these elements.

This additional information should include a construction impact plan evaluation that demonstrates that the limiting conditions for operation of the operating units are not exceeded as a result of the construction activities for the new unit and specifically, the evaluation to include the following:

- Discusses the process and the criteria used to evaluate the construction activities that may pose potential hazards to the SSCs important to safety for operating unit(s).
- Provides a table of those construction activities and the potential hazards that are identified and the proposed mitigation methods.
- Identifies the managerial and administrative controls, (or propose license conditions) that may involve construction schedule constraints or other restrictions on construction activities, that are credited to preclude and/or mitigate the impacts of potential construction hazards.
- Discusses the process for communications and interactions planned and credited between the construction organization and the operations organization.
- Provides a memorandum of understanding or agreement (MOU or MOA) between the COL applicant and the operating unit(s) licensee.
- Discusses the process for reviewing the construction impact evaluation plan on a recurring basis.

Response:

COL-ISG-022 provides NRC staff guidance for nuclear power plants to be operated on multi-unit sites to conform to 10 CFR 52.79(a)(31) by addressing potential hazards to structures, systems, and components (SSCs) important to safety of the operating units resulting from construction activities for a new unit. NRC question 01.05-1 requests to include, in the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA) Final Safety Analysis Report (FSAR), descriptions to address issues in the interim staff guidance (ISG) COL-ISG-022 or to propose suitable licensing conditions to establish the necessary plans and programs to fully address these elements.

CCNPP Unit 3 COLA Revision 2 FSAR Section 1.1.1 (submitted in March 2008) provided an assessment of the potential hazards to the CCNPP Units 1 and 2 operating units' SSCs important to safety resulting from CCNPP Unit 3 construction activities in accordance with 10 CFR 52.79(a)(31), which remains unchanged in the current COLA Revision 9 FSAR Section 1.1.1. The assessments include managerial and administrative controls to be used to provide assurance that the limiting conditions for operation (LCOs) at the operating units are not exceeded as a result of new plant construction activities.

NRC ISG COL-ISG-022 was finalized in May 2012 supplementing the guidance provided in Regulatory Guide 1.206 Section C.III.I (Chapter 1) in June 2007 and Revision 2 of Standard Review Plan (NUREG-0800) for Chapter 1 was revised in December 2011 for applications to address compliance with 10 CFR 52.79(a)(31). NRC ISG COL-ISG-022 suggests for the application to address the potential hazards to SSCs at operating units resulting from the construction activities under the COLA FSAR Chapter 1 as a new Section 1.10. Therefore, the applicable information in COLA FSAR Section 1.1.1 is being relocated to COLA FSAR new Section 1.10 as part of the response to this NRC question for conforming to 10 CFR 52.79(a)(31), as described below.

Construction Impact Plan Evaluation to Demonstrate CCNPP Units 1 and 2 Limiting Conditions for Operation (LCOs) are Not Exceeded as a Result of CCNPP Unit 3 Construction Activities

COLA FSAR new Section 1.10 provides a description of the assessment of the potential hazards to the SSCs important to safety of the CCNPP 1 and 2 operating units resulting from CCNPP Unit 3 construction activities. This FSAR section also identifies the managerial and administrative controls that are to be used to provide assurance that the LCOs at the operating units are not exceeded as a result of new plant construction activities. The response to the NRC question is further discussed below. Note that the RAI 394, Question 01.05-1 bullets have been numbered for clarity in presenting the response for each bullet.

1. Discussion of Process/Criteria to Evaluate CCNPP Unit 3 Construction Activities Posing Potential Hazards to the SSCs Important to Safety for CCNPP Units 1& 2

The steps involved in the evaluation of potential impact of the construction of CCNPP Unit 3 on CCNPP Units 1 and 2 SSCs important to safety is summarized below:

- Identification of potential construction activity hazards

- Identification of SSCs important to safety
- Identification of LCOs
- Identification of impacted SSCs and LCOs.
- Identification of applicable managerial and administrative controls

COLA FSAR new Sections 1.10.1, 1.10.2, and 1.10.3 and Tables 1.10-1, 1.10-2 and 1.10-3 are being added to address this part of the response.

2. Table of Construction Activities, Potential Hazards and Proposed Mitigation Method

Three tables have been added to COLA FSAR new Section 1.10 to describe the construction activities and the potential hazards that are identified and the proposed mitigation methods resulting from the evaluation described in Item 1 above.

FSAR Table 1.10-1, "Potential Hazards to Units 1 and 2 from Unit 3 Construction Activities," identifies construction activities and the potential hazards associated with each of them.

FSAR Table 1.10-2, "Potential Consequences to Units 1 and 2 Due to Potential Hazards Resulting from Unit 3 Construction Activities," identifies the SSCs important to safety that may be impacted by the potential hazards described in FSAR New Table 1.10-1 and the potential consequences of those hazards.

FSAR Table 1.10-3, "Managerial and Administrative Controls for Unit 3 Construction Activity Hazards," describes the managerial and administrative controls that may be implemented to mitigate the impacts of the hazards described in FSAR Table 1.10-1.

3. Managerial and Administrative Controls Involving Schedule Constraints or other Restrictions on Construction Activities Credited to Preclude and/or Mitigate Impacts of Potential Construction Hazards

Managerial and administrative controls involving schedule constraints or other restrictions on construction activities credited to preclude and/or mitigate impacts of potential construction hazards are identified in FSAR Table 1.10-3.

Known and scheduled construction activities and interactions between CCNPP Unit 3 new construction and CCNPP Units 1 & 2 which physically affect the operating units will be coordinated with the CCNPP Units 1 & 2 management team for scheduling and processing their work activities in accordance with the operating plants work control program, which will involve schedule constraints and other restrictions.

4. Process for Communications and Interactions Planned/Credited between Construction and Operations Organizations

The CCNPP Unit 3 new construction project will coordinate with CCNPP Units 1 & 2 management team any scheduled construction activities, associated potential hazards and potential consequences as outlined in FSAR Tables 1.10-1, 1.10-2, and 1.10-3.

Any emergent or imminent potential hazard identified during the course of construction will immediately be reported to the CCNPP Unit 1 & 2 management team.

Interactions between CCNPP Unit 3 new construction and CCNPP Units 1 & 2 which physically affect the operating units will be coordinated with the CCNPP Units 1 & 2 management team as necessary.

5. Memorandum of Understanding/Agreement (MOU or MOA) Between CCNPP Unit 3 COL Applicant and CCNPP Units 1 & 2 Licensee

CCNPP Unit 3 has multiple MOUs with CCNPP Units 1 and 2 relating to different aspects of the construction process including traffic patterns (UN#09-449[1]), Emergency Planning (COLA Part 5) and the Independent Spent Fuel Storage Installation (UN#13-114[2]) as well as others in the Certificate of Public Convenience and Necessity (CPCN). The Reciprocal Easement Agreement (REA), dated June 2008, exists between Calvert Cliffs Nuclear Power Plant, Inc (CCNPP Units 1 & 2 Licensee) and the Calvert Land Corporation (CCNPP Unit 3). The REA contains work rules for the two parties. The work rules apply to construction, installation, cleaning, testing, operation, maintenance, repair, restoration, alteration or other work which is reasonably capable of damaging the property of the other party. The REA is an extensive document (several hundred pages). A copy of the REA will be made available upon request.

6. Process for Reviewing Construction Impact Evaluation Plan on a Recurring Basis

New FSAR Section 1.10.5, "Managerial and Administrative Controls," indicates that specific hazards, impacted SSCs, and managerial and administrative controls will be developed and implemented as work progresses on site. For example, prior to construction activities that involve the use of large construction equipment such as cranes, managerial and administrative controls will be in place to prevent adverse impacts on CCNPP Units 1 and 2 overhead power lines, switchyard, security boundary, etc., by providing the necessary restrictions on the use of large construction equipment.

COLA Impact

The CCNPP Unit 3 COLA Part 2, FSAR, Sections 1.1.1 and 1.1.7 have been revised. New FSAR Section 1.10 and new Tables 1.10-1, -2, and -3 have been added. The COLA changes are provided in Enclosure 2.

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[1] UniStar Nuclear Energy Letter UN#09-449, from Greg Gibson to the Maryland State Highway Administration, Calvert Cliffs Nuclear Power Plant, Unit 3 Memorandum of Agreement, Related to Construction of CCNPP Unit 3, dated October 22, 2009

[2] UniStar Nuclear Energy Letter UN#13-114, from Mark T. Finley to Document Control Desk, U.S. NRC, Response to Request for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3, RAI 391, Radiation Protection Design Features, dated August 16, 2013

Enclosure 2

Changes to CCNPP Unit 3 COLA Associated with the Response to RAI 394, Question 01.05-1, Calvert Cliffs Nuclear Power Plant, Unit 3

The U.S. EPR FSAR includes the following COL Item in Section 1.1:

> A combined license (COL) applicant that references the U.S. EPR design certification and proposes a multi-unit license application will provide the changes and additional information needed to license a multi-unit plant.

This COL Item is addressed as follows:

{This COL application is for a single unit U.S. EPR. As such, no changes or additional information are needed to address this COL Item.}

1.1.1 Plant Location

The U.S. EPR FSAR includes the following COL Item in Section 1.1.1:

> A COL applicant that references the U.S. EPR design certification will identify the specific plant site location.

This COL Item is addressed as follows:

{CCNPP Unit 3 is co-located with two currently licensed reactors (CCNPP Units 1 and 2). CCNPP Unit 3 is located south of the existing nuclear power plant on the existing CCNPP site. The CCNPP site consists of 2070 acres (838 hectares) in Calvert County, Maryland, on the west bank of Chesapeake Bay, approximately halfway between the mouth of the bay and its headwaters at the Susquehanna River. As reflected in Figure 2.1-1, CCNPP Unit 3 is within the CCNPP Units 1 and 2 Exclusion Area Boundary and the CCNPP Units 1 and 2 Independent Spent Fuel Storage Installation Exclusion Area Boundary. The site is approximately 40 mi (64 km) southeast of Washington D.C. and 7.5 mi (12 km) north of Solomons Island, Maryland. Figure 1.1-1 through Figure 1.1-3 illustrate the location of the site, and the arrangement of the three units.

CCNPP Unit 3 shares the following structures, systems, and components with CCNPP Units 1 and 2:

- Offsite transmission system
- Chesapeake Bay intake channel and embayment
- Meteorological tower
- Emergency Operations Facility (EOF)
- Barge dock

~~In accordance with 10 CFR 52.79(a)(31) (CFR, 2008), the following provides an assessment of the potential hazards to the structures, systems, and components (SSCs) important to safety of operating units resulting from construction activities at a multi-unit site and identifies that managerial and administrative controls are to be used to provide assurance that the limiting conditions for operation (LCOs) at the operating units, are not exceeded as a result of new plant construction activities.~~

~~The managerial and administrative controls include coordination, with CCNPP Units 1 and 2, of construction activities which have the potential for causing CCNPP Units 1 and 2 to exceed LCOs or have an adverse impact on the availability of safety and risk significant SSCs. CCNPP~~

~~Units 1 and 2 procedures and processes are currently in place to control activities that could affect compliance with an LCO or availability of safety and risk significant SSCs, e.g., equipment clearance and tagout procedures, access controls, and switchyard controls.~~

~~The potential hazards associated with CCNPP Unit 3 construction activities include, but are not limited to general construction activities such as site exploration, grading, clearing, and installation of drainage and erosion control measures; boring, drilling, dredging, pile driving and excavating; transportation, storage and warehousing of equipment; construction, erection, and fabrication of new facilities; and connection, integration, and testing. Specific potential impacts to CCNPP Units 1 and 2 SSCs include the following:~~

- ~~Relocation and construction of transmission lines/towers~~
- ~~Construction of Sheetpile wall and Intake Pipes on the shore of the Chesapeake Bay next to the embayment for the intake structures for CCNPP Units 1 and 2~~
- ~~Meteorological data transmission modifications (electrical and instrumentation tie-ins and connections to provide input to CCNPP Unit 3 facilities)~~
- ~~Modification to the existing Emergency Operations Facility to accommodate CCNPP Unit 3 Emergency Planning activities~~

~~The majority of the CCNPP Units 1 and 2 SSCs important to safety are contained and protected within safety-related structures. Managerial controls will protect these internal SSCs from postulated construction hazards by maintaining the integrity and design basis of the safety-related structures and foundations. Heavy load drop controls, crane boom failure standoff requirements, ground vibration controls and construction generated missiles controls are examples of managerial controls that shall be established to provide this reasonable assurance.~~

~~Other managerial controls shall be established to ensure that hazardous materials and gasses are controlled, cooling water supplies are protected, instrumentation is protected from vibrations, and the SSCs are protected from site excavation issues. These managerial controls prevent or mitigate external construction impacts that could affect these SSCs. These controls also prevent or mitigate unnecessary challenges to CCNPP Units 1 and 2 safety systems that could be caused by potential CCNPP Unit 3 construction activity hazards, such as disruption of offsite transmission lines or impact to cooling water supplies. Onsite construction activities with potential safety significance to the operating units shall also be addressed in accordance with established CCNPP Unit 1 and 2 procedures and processes, as described above.~~

~~Construction impacts on security controls are addressed in the CCNPP Unit 3 Security Plan. The CCNPP Unit 3 Security Plan is provided in Part 8 of the COL application.}~~

Additional site details are provided in Chapter 2.

Section 1.10 provides an assessment of the potential hazards to the structures, systems, and components (SSCs) important to safety of the operating units resulting from new unit construction activities in accordance with 10 CFR 52.79(a)(31) (CFR, 2008) and Interim Staff Guidance (ISG) COL-ISG-022 (NRC, 2012).

1.1.2 Containment Type

No departures or supplements.

1.1.3 Reactor Type

No departures or supplements.

1.1.6.2 Standard Review Plan

No departures or supplements.

1.1.6.3 Text, Tables and Figures

Tables and figures are identified by the section or subsection in which they appear and are numbered sequentially. For example, Table 1.1-1 and Figure 1.1-1 would be the first table and figure appearing in Section 1.1. Figures consist of diagrams, plots, pictures, graphs or other illustrations. Tables and figures are located at the end of the applicable section (X.Y) immediately following the text.

1.1.6.4 Numbering of Pages

Pages are numbered sequentially within each chapter.

1.1.6.5 Proprietary Information

This document contains no proprietary information.

1.1.6.6 Acronyms

Table 1.1-1 provides a list of acronyms that are used in this document.

1.1.6.7 COL Information Items

The COL Items in the U.S. EPR FSAR are discussed in Section 1.8.

1.1.6.8 Tense

This section is added as a supplement to the U.S. EPR FSAR.

This FSAR is a licensing basis document that will control plant design and operations after the COL is issued and is generally written in the present tense. Plant design and configuration are described in the present tense although the plant is not yet built. Similarly, programs, procedures, and organizational matters are generally described in the present tense although such descriptions may not yet be implemented. Accordingly, the use of the present tense in this FSAR should be understood as describing the plant, programs and procedures, and organization as they will exist when in place, and not as a representation that they are already in place.

1.1.7 References

{This section is added as a supplement to the U.S. EPR FSAR.

AREVA, 2012. Re-Submittal of Revision 4 of the U.S. EPR Final Safety Analysis Report for Design Certification, P. Salas letter to U. S. Nuclear Regulatory Commission Document Desk, dated November 15, 2012.

CFR, 2008. Title 10, Code of Federal Regulations, Part 52.79, Contents of Applications; Technical Information in Final Safety Analysis Report, U.S. Nuclear Regulatory Commission, 2008.

NRC, 2007. Combined License Applications for Nuclear Power Plants (LWR Edition), Regulatory Guide 1.206, Revision 0, U.S. Nuclear Regulatory Commission, March 2007.

NRC, 2012. Interim Staff Guidance COL-ISG-022 on Impact of Construction (Under a Combined License) of New Nuclear Power Plant Units on Operating Units at Multi-Unit Sites, 2012.

Table 1.9-1— {Conformance with Regulatory Guides}
(Page 3 of 3)

RG / Rev	Description	Exception Descriptions	Reference
8.8, R3	Information Relevant to Ensuring That Occupational Radiation Exposures at Nuclear Power Stations Will Be As Low As Reasonably Achievable	Section C.3.b – Regulatory Guide 1.16 Section C.1.b (3) data is no longer reported. Reporting is also no longer required for Section C.1.b (2). Sections C.4.b – C.4.d – Conformance is with the latest revision of NUREG-0041.	FSAR 12.5

Editors Note: Add Insert for FSAR New Section 1.10 after page 1-59.

{1.10 Hazards Posed by New Unit Construction on the Operating Units

This section is added as a supplement to the U.S. EPR FSAR.

Paragraph 10 CFR 52.79(a)(31) requires that the FSAR include the following information:

For nuclear power plants to be operated on multi-unit sites, an evaluation of the potential hazards to the structures, systems, and components important to safety of operating units resulting from construction activities, as well as a description of the managerial and administrative controls to be used to provide assurance that the limiting conditions for operation are not exceeded as a result of construction activities at the multi-unit sites.

In accordance with 10 CFR 52.79(a)(31), the following provides an assessment of the potential hazards to the structures, systems, and components (SSCs) important to safety of CCNPP 1 and 2 operating units resulting from CCNPP Unit 3 construction activities and identifies that managerial and administrative controls are to be used to provide assurance that the limiting conditions for operation (LCOs) at the operating units, are not exceeded as a result of new plant construction activities.

The managerial and administrative controls include coordination, with CCNPP Units 1 and 2, of construction activities which have the potential for causing CCNPP Units 1 and 2 to exceed LCOs or have an adverse impact on the availability of safety and risk significant SSCs, CCNPP Units 1 and 2 procedures and processes are currently in place to control activities that could affect compliance with an LCO or availability of safety and risk significant SSCs, e.g., equipment clearance and tagout procedures, access controls, and switchyard controls.

The potential hazards associated with CCNPP Unit 3 construction activities include, but are not limited to, general construction activities such as site exploration, grading, clearing, and installation of drainage and erosion-control measures; boring, drilling, dredging, pile driving and excavating; transportation, storage and warehousing of equipment; construction, erection, and fabrication of new facilities; and connection, integration, and testing. Specific potential impacts to CCNPP Units 1 and 2 SSCs include the following:

- Relocation and construction of transmission lines/towers (including modifications to CCNPP Units 1 and 2 switchyard)
- Construction of Sheetpile wall and Intake Pipes on the shore of the Chesapeake Bay next to the embayment for the intake structures for CCNPP Units 1 and 2
- Meteorological data transmission modifications (electrical and instrumentation tie-ins and connections to provide input to CCNPP Unit 3 facilities)

- Modification to the existing Emergency Operations Facility to accommodate CCNPP Unit 3 Emergency Planning activities

The majority of the CCNPP Units 1 and 2 SSCs important to safety are contained and protected within safety-related structures. CCNPP Unit 3 managerial controls will protect these internal SSCs from postulated construction hazards by maintaining the integrity and design basis of the safety-related structures and foundations. Heavy load drop controls, crane boom failure standoff requirements, ground vibration controls and construction generated missile controls are examples of managerial controls that shall be established to provide reasonable assurance.

Other managerial controls shall be established to ensure that hazardous materials and gasses are controlled, cooling water supplies are protected, instrumentation is protected from vibrations, and the SSCs are protected from site excavation issues. These managerial controls prevent or mitigate external construction impacts that could affect these SSCs. These controls also prevent or mitigate unnecessary challenges to CCNPP Units 1 and 2 safety systems that could be caused by potential CCNPP Unit 3 construction activity hazards, such as disruption of offsite transmission lines or impact to cooling water supplies. Onsite construction activities with potential safety significance to the operating units shall also be addressed in accordance with established CCNPP Units 1 and 2 procedures and processes, as described above.

Construction impacts on security controls are addressed in the CCNPP Unit 3 Security Plan. The CCNPP Unit 3 Security Plan is provided in Part 8 of the COL application.

The evaluation of potential impact of the construction of CCNPP Unit 3 on CCNPP Units 1 and 2 SSCs important to safety is summarized below, along with a description of the managerial and administrative controls used to provide assurance that CCNPP Units 1 and 2 LCOs are not exceeded as a result of CCNPP Unit 3 construction activities. This evaluation involves several sequential steps:

- Identification of potential construction activity hazards
- Identification of SSCs important to safety
- Identification of LCOs
- Identification of impacted SSCs and LCOs
- Identification of applicable managerial and administrative controls

1.10.1 Potential Construction Activity Hazards

CCNPP Unit 3 is located on the existing Calvert Cliffs Nuclear Power Plant (CCNPP) site on a parcel of land adjacent to and generally south of the two operating units, CCNPP Units 1 and 2, as shown in Figures 2.1-1, 2.1-4, and 2.1-6.

CCNPP Unit 3 construction activities include site exploration, boring, drilling, clearing, grading, demolition and excavation; installation of drainage and erosion control measures, dredging, storage and warehousing of equipment; and construction, erection and

fabrication of new facilities. These activities involve major standard plant and site-specific structures such as the Reactor Building, Nuclear Auxiliary Building, Safeguards Buildings, Fuel Building, Emergency Diesel Generator Buildings, Essential Service Water Building, Ultimate Heat Sink Related Structures; Circulating Water Structure, Turbine Building, as well as related support facilities such as transformers, switchyard(s), transmission lines, cooling water structures and systems, water treatment facilities, storage tanks, etc.

The applicable time period for such activities starts when work is first performed under the COL for CCNPP Unit 3 (structural backfill) and ends for each CCNPP Unit 3 SSC when responsibility for that SSC is transferred to the responsible and accountable operating organization. In addition any major site preparation work performed prior to COL issuance, such as excavation, grading, blasting, etc., will be coordinated with CCNPP Units 1 and 2.

Each of the types of construction activities necessary to build CCNPP Unit 3 was examined to identify the potential hazards to the existing CCNPP Units 1 and 2. The resulting list of construction activities and potential hazards is shown in Table 1.10-1.

1.10.2 Structures, Systems and Components Important to Safety

Consistent with 10 CFR 50.34 and 10 CFR 50, Appendix A, CCNPP Units 1 and 2 SSCs important to safety are identified in Chapter 3 through 9 of the CCNPP Units 1 and 2 Updated Final Safety Analysis Report (UFSAR), Revision 45, dated October 2, 2012 (CC1&2, FS2012).

1.10.3 Limiting Conditions for Operation

Pursuant to 10 CFR 50.36, LCOs are the lowest functional capability or performance levels of equipment required for safe operation of a facility and are established in operating unit technical specifications for each item meeting one or more of the following criteria:

- Criterion 1 – Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary (RCPB).
- Criterion 2 – A process variable, design feature, or operating restriction that is an initial condition of a design basis accident (DBA) or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
- Criterion 3 – A SSC that is part of the primary success path and which functions or actuates to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

- Criterion 4 – A SSC which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

The applicable LCOs are found in the CCNPP Units 1 and 2 Technical Specifications (CC1&2, TS2013).

1.10.4 Impacted Structures, Systems and Components and Limiting Conditions for Operation

The information described in Sections 1.10.1–1.10.3 was evaluated to identify CCNPP Units 1 and 2 SSCs and LCOs that might be impacted by CCNPP Unit 3 construction activities. For example, internal/in-plant CCNPP Units 1 and 2 LCO parameters were eliminated by examination. Similarly, SSCs both internal and specific to CCNPP Units 1 and 2 are not affected.

For each of the potential hazards listed in Table 1.10-1, Table 1.10-2 presents the potential consequences to the SSCs of the existing units that were identified in the above process.

1.10.5 Managerial and Administrative Controls

Managerial and administrative controls are utilized to identify preventive and mitigating measures and provide notification of hazardous activity initiation in order to prevent or minimize exposure of SSCs to the identified hazards. Applicable managerial and administrative controls are listed in Table 1.10-3.

Specific hazards, impacted SSCs, and managerial and administrative controls will be developed and implemented as work progresses on site. For example, prior to construction activities that involve the use of large construction equipment such as cranes, managerial and administrative controls will be in place to prevent adverse impacts on CCNPP Units 1 and 2 overhead power lines, switchyard, security boundary, etc., by providing the necessary restrictions on the use of large construction equipment.

1.10.6 References

CC1&2, FS2012 Calvert Cliffs Nuclear Power Plant, Units 1 and 2, Updated Final Safety Analysis Report, Revision 45, dated October 2, 2012.

CC1&2, TS2013 Calvert Cliffs Nuclear Power Plant, Units 1 and 2, Operating License Appendix A, Technical Specifications, Revised 7/31/2013.}

Table 1.10-1 {Potential Hazards to Units 1 and 2 from Unit 3 Construction Activities}
(Page 1 of 2)

Construction Activity	Potential Hazards
Site Exploration, Grading, Clearing, Installation of Drainage and Erosion Control Measures, etc.	Impact on Overhead Power Lines
	Impact on Transmission Towers
	Impact on Underground Conduits, Piping, Tunnels, etc.
	Impact on Site Access and Egress
	Impact on Drainage Facilities and Structures
	Impact on Onsite Transportation Routes
	Impact on Slope Stability
	Impact of Increased Soil Erosion and Local Flooding
	Impact of Construction-Generated Dust and Equipment Exhausts
	Impact of Encroachment on Plant Protected or Vital Areas
	Impact of Encroachment on Structures and Facilities
Boring, Drilling, Pile Driving, Dredging, Demolition, Excavation, etc.	Impact on Underground Conduits, Piping, Tunnels, etc.
	Impact on Foundation Integrity
	Impact on Structural Integrity
	Impact on Slope Stability
	Impact of Ground Vibration
	Impact of Overpressure from Use of Explosives
Equipment Movement, Material Delivery, Vehicle Traffic. etc.	Impact on Overhead Power Lines
	Impact on Transmission Towers
	Impact on Underground Conduits, Piping, Tunnels, etc.
	Impact of Crane Load Drops
	Impact of Crane or Crane Boom Failures
	Impact of Vehicle Accidents
	Impact of Vehicle Runaways

Table 1.10-1 {Potential Hazards to Units 1 and 2 from Unit 3 Construction Activities}
(Page 2 of 2)

Construction Activity	Potential Hazards
Equipment and Material Laydown, Storage, Warehousing, etc.	Impact of Releases of Stored Flammable, Hazardous or Toxic Materials
	Impact of Increase Local Flooding
	Impact of Wind-Generated, Construction-Related Debris and Missiles
General Construction, Erection, Fabrication, etc., Including Installation of the Sheet Pile Wall	Impact on Instrumentation and Control Systems and Components
	Impact on Electrical Systems and Components
	Impact on Cooling Water Systems and Components
	Impact on Radioactive Waste Release Points and Parameters
	Impact of Abandonment of SSCs
	Impact of Relocation of SSCs
	Impact on Instrumentation and Control Systems and Components
Connection, Integration, Tie-In, Testing, etc., Including Connection to the CCNPP Unit 1 and 2 Switchyard and Meteorological Tower	Impact on Electrical and Power Systems and Components
	Impact on Cooling Water Systems and Components
	Impact on Site Security Systems
General Site Construction Activities	

Table 1.10-2 {Potential Consequences to Units 1 and 2 Due to Potential Hazards Resulting from Unit 3 Construction Activities}
(Page 1 of 2)

Potential Hazard	Potential Consequences
Containment Structure	
Impact of Crane or Crane Boom Failures	Building Degradation Due to Crane Boom Failure
Impact of Wind-Generated Construction-Related Debris and Missiles	Effects of Construction-Related Debris or Missiles
Impact of Overpressure from Use of Explosives	Building Degradation Due to Structural Damage as a Result of Explosion
Control Room Emergency HVAC Systems	
Impact of Construction-Generated Dust and Equipment Exhausts	Effects of Construction-Generated Dust and Equipment Exhausts on Control Room Habitability Systems Air Intakes
Impact of Releases of Flammable, Hazardous or Toxic Materials	Effects of Releases of Flammable, Hazardous or Toxic Materials on Control Room Habitability Systems Design Basis
Impact of Vehicle Accidents	Effects of Releases of Flammable, Hazardous or Toxic Materials on Control Room Habitability Systems Design Basis
Diesel Generators	
Impact of Construction-Generated Dust and Equipment Exhausts	Effects of Construction-Generated Dust and Equipment Exhausts on Emergency Diesel Generator Combustion Air Intakes
Fire Protection System	
Impact on Underground Conduits, Piping, Tunnels, etc.	Degradation of Fire Protection System (FPS) Availability or Capacity
Impact of the Relocation of SSCs	Degradation of FPS Availability or Capacity
Fuel Building	
Impact of Wind-Generated Construction-Related Debris and Missiles	Effects of Construction-Related Debris or Missiles
Gaseous Radioactive Waste Management System	
Impact on Radioactive Waste Release Points and Parameters	Building and Facility Effects on Gaseous Release X/Q and D/Q Assumptions

Table 1.10-2 {Potential Consequences to Units 1 and 2 Due to Potential Hazards Resulting from Unit 3 Construction Activities}
(Page 2 of 2)

Potential Hazard	Potential Consequences
Offsite Power System	
Impact on Overhead Power Lines	Transmission line disruptions due to grading or clearing, equipment movement, crane boom failures, etc.
Impact on Transmission Towers	Transmission line disruptions due to grading or clearing, equipment movement, crane boom failures, etc.
Impact of Vibratory Ground Motion	Operability disruptions due to vibration induced spurious trips
Impact on Electrical Systems and Components	Operability disruptions due to equipment movement, system interconnections, etc.
Onsite Power Systems	
Impact of Vibratory Ground Motion	Operability disruptions due to vibration induced spurious trips
Impact on Electrical Systems and Components	Operability disruptions due to vibration induced spurious trips, system interconnections, etc.
Service Building	
Impact of Crane or Crane Boom Failures	Building degradation due to crane boom failure
Impact of Wind-Generated Construction-Related Debris and Missiles	Construction-related debris or missile
Service Water System	
Impact on Underground Conduits, Piping, Tunnels, etc.	Degradation of Service Water System availability or capacity
Impact on Cooling Water Systems and Structures	Degradation of Service Water System availability or capacity
Impact of the Relocation of SSCs	Degradation of Service Water System availability or capacity
Salt Water System	
Impact on Underground Conduits, Piping, Tunnels, etc.	Degradation of Salt Water System availability or capacity
Impact on Cooling Water Systems and Components	Degradation of Salt Water System availability or capacity

Table 1.10-3 {Managerial and Administrative Controls for Unit 3 Construction Activity Hazards}
(Page 1 of 2)

Hazard	Control
Impact on Overhead Power Lines	Administrative controls for appropriate standoff and/or installation of temporary support towers
Impact on Transmission Towers	Administrative controls for appropriate standoff and/or installation of temporary support towers
Impact on Underground Conduits, Piping, Tunnels, etc.	Administrative controls to identify potentially affected SSCs; evaluation to ensure structural integrity during construction; and/or temporary measures to mitigate impacts
Impact of Construction-Generated Dust and Equipment Exhausts	Administrative controls to avoid or minimize construction dust (for example, use of water spray trucks) and/or enhanced monitoring of potentially affected system intakes, filters, etc.
Impact of Overpressure From Use of Explosives	Administrative controls to coordinate transport, storage and use of explosives and/or temporary measures to mitigate impacts
Impact of Vehicle Accidents	Administrative controls to respond to site accidents (for example, construction fire brigade and/or hazardous materials response team)
Impact of Ground Vibration	Administrative controls to identify potentially affected SSCs, and/or temporary measures to mitigate impacts
Impact of Crane or Crane Boom Failures	Administrative controls for appropriate standoff and/or load limits (for example, minimum standoff distances and/or load limitations)
Impact of Releases of Flammable, Hazardous or Toxic Materials	Administrative controls on quantities and types of flammable, hazardous or toxic materials Administrative controls on equipment and material storage and transport, and for reducing power or shutting down Units 1 and 2 during high winds or high wind warnings
Impact of Wind-Generated, Construction-Related Debris and Missiles	Administrative controls to identify potentially affected SSCs; evaluation to ensure system and component integrity during construction; and/or temporary measures to mitigate impacts
Impact on Electrical Systems and Components	Administrative controls to identify potentially affected SSCs; evaluation to ensure system and component integrity during construction; and/or temporary measures to mitigate impacts
Impact on Cooling Water Systems and Components	

Table 1.10-3 {Managerial and Administrative Controls for Unit 3 Construction Activity Hazards}
(Page 2 of 2)

Hazard	Control
Impact on Radioactive Waste Release Points and Parameters	Enhanced monitoring and control to ensure releases are within limits
Impact of Relocation of SSCs	Administrative controls to identify potentially affected SSCs effects of releases of flammable, hazardous or toxic materials on control room habitability systems design basis evaluation to ensure system and component integrity during construction; and/or temporary measures to mitigate impacts
Impact on Site Security Systems	Administrative controls to coordinate construction activities with Units 1 and 2 physical protection personnel and procedures

Enclosure 3

Table of Changes to CCNPP Unit 3 COLA
Associated with the Response to
RAI 394, Question 01.05-1,
Calvert Cliffs Nuclear Power Plant, Unit 3

Table of Changes to CCNPP Unit 3 COLA

Associated with the Response to RAI No. 394

Change ID #	Subsection	Type of Change	Description of Change
Part 2 – FSAR			
CC3-10-0302	1.1.1	Incorporated COLA markups associated with the response to RAI 253 Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53[3].	The response to RAI 253 Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53 added mention of the potential impact to CCNPP Units 1 and 2 from the construction of the sheetpile wall and intake pipes on the shore of the Chesapeake Bay.
CC3-13-0129	1.1.1, 1.1.7, and 1.10	Incorporated COLA markups associated with the response to RAI 394, Question 01.05-1 (this response).	The response to RAI 394, Question 01.05-1 (this response) involved the relocation of text from FSAR Section 1.1.1 to new FSAR Section 1.10. COL-ISG-022 was added as a reference to Section 1.1.7. New Section 1.10, "Hazards Posed by New Unit Construction on the Operating Units" was added in response to RAI 394, Question 01.05-1 (this response).

[3] UniStar Nuclear Energy Letter UN#10-285, from Greg Gibson to Document Control Desk, U.S. NRC, Ultimate Heat Sink Makeup Water Intake Structure and Response to Request for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3, RAI 253, Seismic System Analysis, dated November 16, 2010