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October 28, 2009

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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 No. 176, Radiation Protection Design Features

Reference: Surinder Arora (NRC) to Robert Poche (UniStar Nuclear Energy), "FINAL RAI  
No. 176 CHPB 3192" email dated September 29, 2009

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 September 29, 2009 (Reference). This RAI addresses Radiation Protection Design Features, as discussed in Section 12.3 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 6.

The enclosure provides our response to RAI No. 176, Question 12.03-12.04-5, and includes revised COLA content. A Licensing Basis Document Change Request has been initiated to incorporate these changes into a future revision of the COLA.

Our response to RAI No. 176, Question 12.03-12.04-5 does not include any new regulatory commitments. This letter does not contain any sensitive or proprietary information.

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If there are any questions regarding this transmittal, please contact me at (410) 470-4205, or Mr. Michael J. Yox at (410) 495-2436.

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

Executed on October 28, 2009

A handwritten signature in black ink, appearing to read 'Greg Gibson', with a long horizontal flourish extending to the right.

Greg Gibson

Enclosure: Response to NRC Request for Additional Information RAI No. 176, Question 12.03-12.04-5, Radiation Protection Design Features, Calvert Cliffs Nuclear Power Plant, Unit 3

cc: Surinder Arora, NRC Project Manager, U.S. EPR Projects Branch  
Laura Quinn, NRC Environmental Project Manager, U.S. EPR COL Application  
Getachew Tesfaye, NRC Project Manager, U.S. EPR DC Application (w/o enclosure)  
Loren Plisco, Deputy Regional Administrator, NRC Region II (w/o enclosure)  
Silas Kennedy, U.S. NRC Resident Inspector, CCNPP, Units 1 and 2  
U.S. NRC Region I Office

GTG/RDS/mdf

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**Enclosure**

**Response to NRC Request for Additional Information  
RAI No. 176, Question 12.03-12.04-5, Radiation Protection Design Features,  
Calvert Cliffs Nuclear Power Plant, Unit 3**

**RAI No. 176**

**Question 12.03-12.04-5**

Section 12.3.1.6 of the EPR FSAR contains conceptual design information that is outside the scope of the U.S. EPR design certification related to the following facilities: access building, personnel decontamination area, portable instrument calibration facility, respiratory facility, equipment decontamination facility, radioactive material storage facility, and facility for dosimetry processing and bioassay.

RG 1.206, Part C.I.1.8, "Site and Plant Design Interfaces and Conceptual Design Information," states that the NRC staff expects COL applicants who reference a certified design to provide complete designs for the entire facility including appropriate site-specific design information to replace the conceptual design portions of the design control document (DCD) for the referenced certified design.

The applicant incorporated EPR FSAR Section 12.3.1 by reference without addressing the site-specific facilities identified in Section 12.3.1.6. Update section 12.3 of the CCNPP Unit 3 FSAR to include those portions of the conceptual design information described in Section 12.3.1.6 of the EPR FSAR that will be incorporated into the CCNPP Unit 3 site-specific design. Alternatively, provide the site-specific design information which will replace the conceptual design provided in the DCD.

**Response**

FSAR Section 12.3 will be updated in a future revision of the COLA to incorporate the conceptual design information described in U.S. EPR FSAR Section 12.3.1.6.

**COLA Impact**

FSAR 12.3 will be updated as follows in a future COLA revision:

**12.3.1 FACILITY DESIGN FEATURES**

No departures or supplements.

**12.3.1.1 Reactor Building**

No departures or supplements.

**12.3.1.2 Safeguard Building**

No departures or supplements.

**12.3.1.3 Fuel Building**

No departures or supplements.

#### **12.3.1.4 Nuclear Auxiliary Building**

No departures or supplements.

#### **12.3.1.5 Radioactive Waste Processing Building**

No departures or supplements.

#### **12.3.1.6 Access Building**

The U.S. EPR FSAR includes the following conceptual design information in Section 12.3.1.6 for the Access Building:

Access control facilities control the entrance and exit of personnel and materials into and from the radiologically controlled area (RCA) of the plant. [[Separate change areas for male and female personnel are located at the access control facility. These facilities are located at elevations -13 feet and 0 feet of the Access Building. The change areas are sufficiently sized to support routine operations, maintenance and typical refueling outage conditions.

Radiation protection offices sufficient to support staff oversight of the radiological control program are located at elevation +39 feet of the Access Building. Space is provided for storage and issuance of radiation protection equipment, instrumentation, dosimetry, and supplies.

Access control facilities are shown in Figures 12.3-14—[[Access Building at Elevation -31 Ft Radiation Zones]] through 12.3-20— [[Access Building at Elevation +54 Ft Radiation Zones.]]

#### **Personnel Decontamination Area**

[[Once a worker has entered the RCA within the Access Building, entrance to the portions of the connecting buildings in the RCA is at elevation 0 feet, where the worker enters Safeguard Building Division 4. From there, the worker can follow a passageway around the Reactor Building and enter the Fuel Building and Nuclear Auxiliary Building or access other divisions of the Safeguard Building.

Personnel decontamination areas are located near the exit side of the primary access control facility at elevation 0 feet of the Access Building near the control point. The personnel decontamination area is supplied with sinks and showers with drains that are routed to the liquid waste management system.]]

#### **Portable Instrument Calibration Facility**

[[A portable instrument calibration facility is located at elevation 0 feet of the Access Building and is designed so that radiation fields created during calibrations do not unnecessarily expose personnel and do not interfere with low-level monitoring or counting systems. This facility is in a low-background

radiation area so that ambient radiation fields from plant operation do not interfere with low-range instrument calibrations.]]

#### **Respiratory Facility**

[[A respirator facility is located with the laundry and consumables storage area at elevation 0 feet in the Access Building. Room is provided for respirator inspection, maintenance, repair, storage, inventory, control, and issuance.]]

#### **Equipment Decontamination Facility**

[[Decontamination and cleaning of personnel protective equipment, instrumentation, and small items are performed in a facility set up for that specific purpose at elevation 0 feet of the Access Building. The washdown area and sink drains are routed to the liquid waste management system, and positive air flow is maintained into the decontamination facility and exhausted into a monitored building ventilation system. The facility is provided with coated walls and floors to ease cleanup and decontamination.]]

#### **Radioactive Materials Storage Area**

[[A radioactive materials storage area is located at elevation 0 feet of the Access Building and provides for secure storage of calibration sources.]]

#### **Facility for Dosimetry Processing and Bioassay**

[[A bioassay room is located at elevation 0 feet of the Access Building outside of the radiological controlled area for dosimetry processing and bioassays collection. The facility is sufficiently shielded to maintain low background radiation levels.]]

The above conceptual design information is addressed as follows:

The reference Access Building designs are utilized. The design information as stated in the U.S. EPR FSAR is incorporated by reference.

#### **12.3.1.7 Layout Design features for ALARA**

No departures or supplements.

#### **12.3.1.8 Access to Radiologically Restricted Areas**

No departures or supplements.

#### **12.3.1.9 Equipment Design Features and Shielding for ALARA**

No departures or supplements.