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November 19, 2009

UN#09-481

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. 172, Emergency Planning – Inspections, Tests, Analyses, and
Acceptance Criteria

- References:
- 1) Surinder Arora (NRC) to Robert Poche (UniStar Nuclear Energy), "FINAL RAI No. 172 NSIR 2948" email dated September 29, 2009
 - 2) UniStar Nuclear Energy Letter UN#09-453, from Greg Gibson to Document Control Desk, U.S. NRC, Submittal of Response to RAI No. 172, Emergency Planning – Inspections, Tests, Analyses, and Acceptance Criteria, dated October 23, 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 1). This RAI addresses Emergency Planning – Inspections, Tests, Analyses, and Acceptance Criteria, as submitted in Part 10 of the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA), Revision 6.

Reference 2 provided a November 19, 2009 schedule for the response for RAI No. 172, Question 14.03.10-3.

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The enclosure provides our response to RAI No. 172, Question 14.03.10-3. Our response does not include any new regulatory commitments and does not impact COLA content. This letter does not contain any sensitive or proprietary information.

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 November 19, 2009



Greg Gibson

Enclosure: Response to NRC Request for Additional Information RAI No. 172, Question 14.03.10-3, Emergency Planning – Inspections, Tests, Analyses, and Acceptance Criteria, 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

Enclosure

**Response to NRC Request for Additional Information
RAI No. 172, Question 14.03.10-3,
Emergency Planning – Inspections, Tests, Analyses, and Acceptance Criteria,
Calvert Cliffs Nuclear Power Plant, Unit 3**

RAI No. 172

Question 14.03.10-3

Basis: 10 CFR 50.47(b)(11); 10 CFR 52.80(a)

SRP ACCEPTANCE CRITERIA: Requirement E; Acceptance Criteria 2 and 3

ITAAC-3. Part II, Section K of the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 COL Application, Part 5, Emergency Plan, does not indicate to what extent, if any, the Radiation Exposure Control Program relies on the existing programs and expertise of Calvert Cliffs Units 1 and 2. If substantial credit is given for the existing Radiation Exposure Control Program and expertise, then amend the application to describe the interface with and degree of reliance on that program at Units 1 and 2. If substantial credit cannot be given for the existing Radiation Exposure Control Program and expertise, and the program for Unit 3 is independent of Units 1 and 2, then propose Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) in the CCNPP Unit 3 COL Application, Part 10, Table 2.3-1—"Emergency Preparedness Inspections, Tests, Analyses, and Acceptance Criteria."

For guidance on developing an ITAAC, refer to Table C.II-B1 in Regulatory Guide 1.206, Appendix B and/or Standard Review Plan (SRP) 14.3.10 (Table 14.3.10-1).

Response

The Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Emergency Plan radiation controls procedures and practices do not rely on the CCNPP Unit 1 and Unit 2 program or expertise. The methods and processes for radiation controls established for CCNPP Unit 3 are documented in Section K of the Emergency Plan and based on the evaluation criteria of NUREG-0654 as follows:

1. The means exists to provide onsite radiation protection. CCNPP Unit 3 Emergency Plan, Section K.2, states:

The {Radiation Protection Manager} is the individual responsible for the implementation of the radiation protection actions during an emergency. Radiation protection guidelines include the following:

- Volunteers over forty-five years of age are considered first for any emergency response action requiring exposure greater than normal limits. Routine dose limits shall not be extended to emergency dose limits for declared pregnant individuals. As in the case of normal occupational exposure, doses received under emergency conditions should be maintained as low as reasonably achievable.
- Persons undertaking any emergency operation in which the dose will exceed 25 Rem (0.25 Sv) TEDE should do so only on a voluntary basis and with full awareness of the risks involved including the numerical levels of dose at which acute effects of radiation will be incurred and numerical estimates of the risk of delayed effects.
- In the context of the emergency limits, exposure of workers that is incurred for the protection of large populations may be considered justified for situations in which the

collective dose avoided by the emergency operation is significantly larger than that incurred by the workers involved.

- Exposure accountability is maintained and proper personnel radiological monitoring equipment is provided for all personnel during emergency conditions.
 - Access to high radiation areas is only permitted with prior approval of the applicable {Radiation Protection Manager}. Personnel are not allowed to enter known or potential high radiation areas unless their exposure has been properly evaluated.
 - Periodic habitability surveys of emergency facilities are performed during an emergency. If the facility is determined to be uninhabitable, the facility is evacuated in order to prevent or minimize exposure to radiation and radioactive materials. Alternate assembly areas are established, as necessary, to relocate and monitor evacuated personnel.
2. The means exists to provide 24-hour-per-day capability to determine the doses received by emergency personnel and maintain dose records. CCNPP Unit 3 Emergency Plan, Section K.3, (as revised in response to RAI 155, Question 13.03-16¹) states:
- a. Emergency workers will receive TLD badges and personal self-reading dosimeters capable of measuring expected exposures on a real time basis. The capability exists for the emergency processing of TLDs on a 24-hour per day basis, if necessary. Refer to Section B.8.d for information on TLD laboratory capabilities.
 - b. Emergency worker dose records are maintained by the TSC and EOF Radiation Protection Groups (as appropriate) in accordance with the emergency and radiological protection procedures. Emergency workers are instructed to read their dosimeters frequently. TLDs may be processed with increased periodicity.

CCNPP Unit 3 Emergency Plan, Section B.8.d, (as revised in response to RAI 155, Question 13.03-13¹) states:

{Ft. Smallwood (REMP Laboratory). The Laboratory Services Section, Technical Services Department, General Services Division, Constellation Generation Group maintains a fixed counting laboratory in the Fort Smallwood Road Shops Complex. It is available in about two hours. General capabilities include:

- Dosimetry of legal record processing.
- Radiological environmental monitoring equipment and sample media.
- Radiological environmental sampling, and analysis of soil, water, air, vegetation, etc.
- Radiological environmental consulting.}

¹ G. Gibson (UniStar Nuclear Energy) to Document Control Desk (NRC), Letter UN#09-446, Response to RAI 155, Emergency Planning, dated November 19, 2009.

3. The means exists to decontaminate relocated onsite and emergency personnel, including waste disposal. CCNPP Unit 3 Emergency Plan, Section K.5, (as revised in response to RAI 155, Question 13.03-16¹) states:

During an emergency, the {Emergency Plant Manager} is responsible for preventing or minimizing personnel exposure to radioactive materials deposited on the ground or other surfaces. Special consideration should be given to setting up contamination control arrangements for personnel entering the OSC after completion of assigned activities.

- a. Contamination Limits: During emergency conditions, normal plant contamination control criteria will be adhered to as much as possible. Station radiation protection procedures will provide on-site contamination and decontamination control measures for:

- Area access control
- Equipment, supplies, and instruments
- Personnel (including wounds)

These procedures will specify levels at which decontamination needs to be performed and provides for decontaminants suitable for expected contamination types including radioiodine skin contamination.

However, these limits may be modified by the applicable {Radiation Protection Manager} should conditions warrant.

- b. Contamination Control Means: Personnel found to be contaminated will normally be attended to at decontamination areas located onsite. Temporary decontamination areas can also be set up inside at various locations. Decontamination showers and supplies are provided onsite with additional personnel decontamination equipment and capabilities. Shower and sink drains in the controlled area are routed to the miscellaneous waste processing system where the liquid is processed and monitored prior to discharge. Potentially contaminated emergency vehicles will be surveyed before they released from the plant or offsite assembly area for non-emergency use. If the survey area is not suitable for monitoring and decontamination due to radiological or other concerns, vehicles will be surveyed at an alternate location.

CCNPP Unit 3 Emergency Plan, Section K.7, states:

Nonessential onsite personnel may be evacuated to an offsite relocation center or assembly area, as discussed in Section J. Radiological controls personnel at that location monitor evacuees and determine the need for decontamination. Existing and temporary facilities to limit contamination and exposure will be utilized and established at the site as necessary during an emergency situation. In the event that decontamination of evacuees locally is not possible, personnel will be sent to designated locations for monitoring and decontamination. Provisions for extra clothing are made and suitable decontaminates are available for the expected type of contaminations, particularly with regards to skin contaminations, including radioiodine contamination of the skin.

4. The means exists to provide onsite contamination control measures. CCNPP Unit 3 Emergency Plan, Section K.6, states:

Controls are established 24 hours per day to contain the spread of loose surface radioactive contamination.

- a. Contaminated areas are isolated as restricted areas with appropriate radiological protection and access control. Personnel leaving contaminated areas are monitored to ensure they and their clothing are not contaminated. If contamination above acceptable levels is found, they will be decontaminated in accordance with plant procedures. If normal decontamination procedures do not reduce personnel contamination to acceptable levels, the case will be referred to a competent medical authority. Supplies, instruments, and equipment that are in contaminated areas or have been brought into contaminated areas will be monitored prior to removal. If found to be contaminated, they will be decontaminated using normal plant decontamination techniques and facilities or may be disposed of as radwaste. Contaminated vehicles will be decontaminated before being released.
- b. Measures will be taken to control onsite access to potentially contaminated potable water and food supplies. Under emergency conditions when uncontrolled releases of activity have occurred, eating, drinking, smoking, and chewing are prohibited in all site emergency response facilities until such time as habitability surveys indicate that such activities are permissible.
- c. Restricted areas and contaminated items will be returned to normal use when contamination levels have been returned to acceptable levels. Contamination control criteria for returning areas and items to normal use are contained in the plant procedures.

Since the CCNPP Unit 3 Emergency Plan Section K addresses the demonstration criteria of NUREG-0654 Part II Section K, there is no need to develop ITAAC elements in the radiation controls area.

COLA Impact

The COLA FSAR will not be revised as a result of this response.