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10 CFR 50.4  
10 CFR 52.79

August 31, 2010

UN#10-225

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 244, Fitness for Duty

- References:
- 1) Surinder Arora (NRC) to Robert Poche (UniStar Nuclear Energy), "FINAL RAI 244 NSIR ISCP 4258" email dated June 3, 2010
  - 2) UniStar Nuclear Energy Letter UN#10-213, from Greg Gibson to Document Control Desk, U.S. NRC, Response to RAI 244, Fitness for Duty, dated July 30, 2010

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 June 3, 2010 (Reference 1). This RAI addresses Fitness for Duty, as discussed in Section 13.7 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.

Reference 2 provided an August 31, 2010 schedule for the responses to Questions 13.07-1 through 13.07-3. The enclosure provides our responses to RAI 244, Questions 13.07-1 through 13.07-3, 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.

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Our response does not include any new regulatory commitments. 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. Wayne A. Massie at (410) 470-5503.

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

Executed on August 31, 2010

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

Greg Gibson

Enclosure: Responses to NRC Request for Additional Information RAI 244, Questions 13.07-1 through 13.07-3, Fitness for Duty, 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

UN#10-225

**Enclosure**

**Responses to NRC Request for Additional Information, RAI 244  
Questions 13.07-1 through 13.07-3, Fitness for Duty,  
Calvert Cliffs Nuclear Power Plant, Unit 3**

**RAI 244**

**Question 13.07-1**

Under 10 CFR 52.79(a)(44), the Applicant's FSAR must contain a description of the fitness for duty (FFD) program required by 10 CFR Part 26 and its implementation. UniStar stated in Section 13.7 of the FSAR that the construction phase program is consistent with NEI 06-06. Describe how the Applicant intends to update its FFD program for the construction phase. NEI 06-06 provides FFD program examples to meet the regulatory requirement and, if this guidance is endorsed by the NRC, will provide an acceptable method of complying with the NRC's regulations. If the NRC endorses NEI 06-06, explain how the Applicant intends to update its FFD program for the construction phase to comply with NEI 06-06, or provide an acceptable alternative. If future revisions to NEI 06-06 are endorsed by the NRC, describe how the Applicant intends to update its FFD program for the construction phase to comply with certain clarifications, additions, and exceptions in these future, endorsed revisions, as necessary.

**Response**

UniStar Nuclear Energy (UNE) will implement a construction phase Fitness for Duty (FFD) program that follows the guidance in the NRC endorsed NEI 06-06. Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 FSAR, Section 13.7 currently commits to NEI 06-06 Revision 1. FSAR Section 13.7 is being updated to commit to the NRC-endorsed version of NEI 06-06. UNE will evaluate changes in subsequent revisions of NEI 06-06 and modify the construction phase FFD program to incorporate substantial changes determined to be appropriate.

**COLA Impact**

FSAR Table 1.6-1 is being updated as follows:

**Table 1.6-1-{Reports Referenced}**

<b>Report No.</b>	<b>Title/Revision</b>	<b>Date Submitted to the NRC</b>	<b>FSAR Section</b>
UN-TR-08-001	Spent and New Fuel Storage Analyses for U.S. EPR Topical Report	March 2008	9.1
NEI 07-08	Generic FSAR Template Guidance for Ensuring that Occupational Radiation Exposures Are As Low As Is Reasonably Achievable (ALARA), Revision 3	November 2008	12.1.3
NEI 07-03A	Generic FSAR Template Guidance for Radiation Protection Program Description, Revision 0	May 2009	12.1.3 12.5
NEI 06-13A	Template for an Industry Training Program Description, Revision 1	March 2008	13.2
UN-TR-06-001-A	Quality Assurance Program Description, Revision 0	April 2007	17.5
NEI 07-02A	Generic FSAR Template Guidance for Maintenance Rule Program Description for Plants Licensed Under 10 CFR Part 52, Revision 0	March 2008	17.7
<u>NEI 06-06</u>	<u>Fitness for Duty Program Guidance for New Reactor Power Plant Construction Sites, Revision 5</u>	<u>August 2009</u>	13.7

FSAR Section 13.5.1.1.9 is being updated as follows:

#### **13.5.1.1.9 Conduct of Operations**

The administrative procedures regarding the Conduct of Operations shall address the requirements regarding:

- ◆ Standing orders to shift personnel including the authority and responsibility of the {Shift Manager, Senior Reactor Operators}, Reactor Operators, and Shift Technical Advisor (these procedures shall be prepared 6 months before the start of the first licensed operator training class).
- ◆ Assignment of shift personnel to duty stations and the definition of "surveillance area" (these procedures shall be prepared 6 months before the start of the first licensed operator training class).
- ◆ Shift relief and turnover (these procedures shall be prepared 6 months before initial fuel load).
- ◆ Fitness for duty (FFD) (~~Construction FFD—these procedures shall be prepared 6 months before onsite construction of safety-related or security-related systems, structures, or components prior to the applicable milestone provided in Table 13.4-1~~ Operation FFD—these procedures shall be prepared 6 months before initial fuel load).

FSAR Section 13.7 is being updated as follows:

#### **13.7 FITNESS FOR DUTY**

This section of the U.S. EPR FSAR is incorporated by reference with the following supplements.

The U.S. EPR FSAR includes the following COL Item in Section 13.7:

A COL applicant that references the U.S. EPR design certification will submit a PSP to the NRC to fulfill the fitness for duty requirements of 10 CFR Part 26.

This COL Item is addressed as follows:

~~The Fitness for Duty (FFD) Program is implemented and maintained in two phases; the construction phase program and the operating phase program. The construction phase program is consistent with NEI 06-06 (NEI, 2007), which is currently under NRC review. NEI 06-06 provides implementation guidance consistent with the revised 10 CFR Part 26 regulations that are expected to be issued and become effective in early 2008. The construction phase program is implemented, as identified in Table 13.4-1, prior to on-site construction of safety or security-related structures, systems, or components. The operations phase program also is consistent with 10 CFR Part 26, and is implemented prior to initial receipt of fuel, as identified in Table 13.4-1.~~

~~The FFD Program is based on 10 CFR Part 26. A request for an exemption from the current Part 26 regulations is discussed in COL Application Part 7.~~

~~A comprehensive Security Plan is provided in COL Application Part 8.~~

{The Fitness for Duty Program (FFD) is implemented and maintained in multiple and progressive phases dependent on the activities, duties, or access afforded to certain individuals at the construction site. In general, two different FFD programs will be implemented: a construction FFD program and an operations FFD program. The construction and operations phase programs are illustrated in Table 13.4-1.

The construction FFD program is consistent with NEI 06-06 (NEI, 2009). NEI 06-06 applies to persons constructing or directing the construction of safety- and security-related structures, systems, or components performed onsite where the new reactor will be installed and operated. Management and oversight personnel, as further described in NEI 06-06, and security personnel prior to the receipt of special nuclear material in the form of fuel assemblies (with certain exceptions) will be subject to the operations FFD program that meets the requirements of 10 CFR Part 26, Subparts A through H, N, and O. At the establishment of a protected area, all persons who are granted unescorted access will meet the requirements of an operations FFD program. Prior to issuance of a combined license, the construction FFD program at a new reactor construction site for those subject to Subpart K will be reviewed and revised as necessary should substantial revisions occur to NEI 06-06 following NRC endorsement.

The following site-specific information is provided:

- The construction site area is defined in the Physical Security Plan and will be under the control of UniStar Nuclear Operating Services, LLC. The 10 CFR Part 26 requirements will be implemented for the construction site area based on the descriptions provided in Table 13.4-1.
- Construction Workers & First Line Supervisors are covered by the Constellation Energy Corporate Security FFD Program (elements Subpart K).
- UniStar Nuclear Energy (UNE) employees and UNE subcontractor construction management and oversight personnel are covered by a Constellation Energy Corporate Security Operations FFD Program. Bechtel Power Corp. employees and Bechtel Power Corp. subcontractors, construction management, and oversight personnel will be covered by the Constellation Energy Corporate Security FFD Program (elements Subpart A - H, N and O).
- UNE security personnel are covered by a Constellation Energy Corporate Security Operations FFD Program. Bechtel Power Corp. security personnel are covered by the Constellation Energy Corporate Security FFD Program (elements Subpart A - H, N and O). This coverage is applicable from the start of construction activities to the earlier of (1) the receipt of SNM in the form of fuel assemblies, or (2) the establishment of a Protected Area, or (3) the 10 CFR 52.103(g) finding.

- UNE FFD Program personnel are covered by a Constellation Energy Corporate Security Operations FFD Program. Bechtel Power Corp. FFD Program personnel will be covered by the Constellation Energy Corporate Security FFD Program (elements Subpart A - H, N and O).
- UNE security personnel protecting fuel assemblies are covered by a Constellation Energy Corporate Security Operations FFD Program (elements Subpart A - I, N and O).
- Personnel required to physically report to the Technical Support Center (TSC) or Emergency Operations Facility (EOF) when that requirement is in effect are covered by a Constellation Energy Corporate Security Operations FFD Program.

The operations phase FFD program is consistent with the applicable subparts of 10 CFR Part 26.

#### **13.7.1 REFERENCES**

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

NEI, ~~2007~~ 2009. NEI 06-06, Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites, Revision 4 5, Nuclear Energy Institute, ~~September 2007~~ August 2009.)

**Question 13.07-2**

Under 10 CFR 52.79(a)(44), the Applicant's FSAR must contain a description of the fitness for duty (FFD) program required by 10 CFR Part 26 and its implementation. Describe how the COLA Application, FSAR, Part 2, Table 13.4-1, item 15, (Page 4 of 5, 13-33), complies with 10 CFR 26, Sections 26.3 and 26.4. Specifically address the guidance in NRC's letter to the Nuclear Energy Institute dated December 2, 2009, entitled "Status of U.S. Nuclear Regulatory Commission Review and Endorsement of NEI 06-06, 'Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites'", or describe an acceptable alternative. For example, provide site-specific information to clearly and sufficiently describe your FFD program in terms of the scope and level of detail to allow a reasonable assurance finding of acceptability. This information may include, but is not limited to, any condition in which the Applicant intends to deviate from or take exception to the requirements of 10 CFR Part 26 as further described in NEI 06-06 if it is endorsed by the NRC.

**Response**

The response to RAI Question 13.07-1 provides the changes to the COLA that describe the FFD program required by 10 CFR Part 26, including the site-specific information for the various classifications of workers that must be covered per 10 CFR Part 26. FSAR Table 13.4-1 is being updated to address the guidance provided in the NRC December 2, 2009 letter.

**COLA Impact**

See the response to RAI 244 Question 13.07-1 for the associated changes to FSAR Section 13.7.

FSAR Table 13.4-1 is being updated as follows:

**Table 13.4-1—{Operational Programs Required by NRC Regulations and Program Implementation}**

Item	Program Title	Source (Required By)	FSAR Section	Implementation	
				Milestones	Requirements
15	Security Program	10 CFR 50.34(c)	13.6		
	Physical Security Program	10 CFR 73.55; 10 CFR 73.56; 10 CFR 73.57;	13.6	Prior to initial receipt of fuel	License Condition
	Safeguards Contingency Program	10 CFR 50.34(d); 10 CFR 73, App. C	13.6	Prior to initial receipt of fuel	License Condition
	Training and Qualification Program	10 CFR 73, App. B	13.6	Prior to initial receipt of fuel	License Condition
	Cyber Security Plan	10 CFR 73.54	13.6	Prior to initial receipt of fuel	License Condition
	Fitness for Duty Program (Construction—Management and Oversight Personnel)	10 CFR Part 26 Subparts A-H, N, and O	13.7	Prior to initiating construction of safety-related or security-related SSCs	License Condition
	Fitness for Duty Program (Construction—Workers & First-Line Supervisors)	10 CFR Part 26 Subpart K	13.7	Prior to initiating construction of safety-related or security-related SSCs	License Condition
	Fitness for Duty Program (Operation)	10 CFR 26	13.7	Prior to initial receipt of fuel	License Condition
	<u>Fitness for Duty (FFD) Program for Construction (workers and first-line supervisors)</u>	<u>10 CFR Part 26.4(f), Subpart K</u>	<u>13.7</u>	<u>Prior to initiating 10 CFR Part 26 construction activities</u>	<u>License Condition</u>
	<u>FFD Program for Construction (management and oversight personnel)</u>	<u>10 CFR Part 26.4(e), Subparts A-H, N, and O</u>	<u>13.7</u>	<u>Prior to initiating 10 CFR Part 26 construction activities</u>	<u>License Condition</u>

Item	Program Title	Source (Required By)	FSAR Section	Implementation	
				Milestones	Requirements
	<u>FFD Program for Security Personnel</u>	<u>10 CFR Part 26.4(e)(1), Subparts A-H, N, and O</u>  <u>10 CFR 26.4(a)(5), Subparts A-I, N, and O</u>	<u>13.7</u>	<u>Prior to initiating 10 CFR Part 26 construction activities</u>  <u>Prior to the earlier of:</u> A. <u>Licensee's receipt of SNM in the form of fuel assemblies, or</u> B. <u>Establishment of a Protected Area, or</u> C. <u>The 10 CFR 52.103(g) finding</u>	<u>License Condition</u>
	<u>FFD Program for FFD Program personnel</u>	<u>10 CFR Part 26.4(g), Subparts A-H, N, and O and C per licensee's discretion</u>	<u>13.7</u>	<u>Prior to initiating 10 CFR Part 26 construction activities</u>	<u>License Condition</u>
	<u>FFD Program for persons required to physically report to the Technical Support Center (TSC) or Emergency Operations Facility (EOF)</u>	<u>10 CFR Part 26.4(c), Subparts A-I, N, and O, except for §§ 26.205-209</u>	<u>13.7</u>	<u>Prior to the conduct of the first full-participation emergency preparedness exercise under 10 CFR Part 50, App.E, Section F.2.a</u>	<u>License Condition</u>
	<u>FFD Program for Operation</u>	<u>10 CFR Part 26.4(a) and (b), Subparts A-I, N, and O, except for individuals listed in § 26.4(b), who are not subject to §§ 26.205-209</u>	<u>13.7</u>	<u>Prior to the earlier of:</u> A. <u>Establishment of a protected area or</u> B. <u>The 10 CFR 52.103(g) finding</u>	<u>License Condition</u>

### **Question 13.07-3**

Under 10 CFR 52.79(a)(44), the Applicant's FSAR must contain a description of the fitness for duty (FFD) program required by 10 CFR Part 26 and its implementation. In the COL Application, Part 7, 1.2.5 (pages 1-17 through 1-20), UniStar Nuclear Operating Services requests an exemption from the requirements of 10 CFR 52.79(a)(44). The Applicant states that UniStar requires an exemption related to the FFD program description because of the pending, at the time of the Application, Part 26 rule amendments. Considering the amended 10 CFR Part 26, published on March 31, 2008 (73 Fed. Reg. 16966), revise the justification for your exemption request or provide the FFD program description required by the revised rule.

### **Response**

The exemption request related to the schedule requirements of 10 CFR 52.79(a)(44) is being removed from the COLA.

### **COLA Impact**

COLA Part 7, Section 1.2 is being revised as follows (subsequent listed exemption requests will be renumbered accordingly):

#### **1.2 EXEMPTION REQUESTS**

These exemption requests have been developed assuming approval and issuance of a design certification for the U.S. EPR and are based on the current version of the U.S. EPR FSAR.

Calvert Cliffs 3 Nuclear Project and UniStar Nuclear Operating Services request the following exemptions related to:

1. Maximum Groundwater Level,
2. Maximum Differential Settlement (across the basemat),
3. Maximum Annual Average Atmospheric Dispersion Factor (0.5 mile – limiting sector),
4. Accident Atmospheric Dispersion Factor (0-2 hour, Low Population Zone, 1.5 miles),
5. ~~Fitness For Duty Program~~
6. Use of M5™ Advanced Zirconium Alloy Fuel Rod Cladding, and
7. Toxic Gas Detection and Isolation.
8. Shear Wave Velocity
9. Generic Technical Specifications and Bases - Setpoint Control Program

COLA Part 7, Section 1.2.5 is being deleted as follows (subsequent sections will be renumbered accordingly):

#### **1.2.5 — FITNESS FOR DUTY PROGRAM**

Applicable Regulation: ~~10 CFR 52.79(a)(44)~~

Specific wording from which a schedule exemption is requested:

~~(a) The application must contain a final safety analysis report that describes the facility, presents the design bases and limits on its operation, and presents a safety analysis of the structures, systems, and components of the facility as a whole. The final safety analysis report shall include the following information, at a level of information sufficient to enable the Commission to reach a final conclusion on all safety matters that must be resolved by the Commission before issuance of a combined license:~~

~~(44) A description of the fitness for duty program required by 10 CFR part 26 and its implementation.~~

~~Pursuant to 10 CFR 52.7 and 10 CFR 52.93 Calvert Cliffs 3 Nuclear Project, LLC, and Unistar Nuclear Operating Services, LLC, request a schedule exemption from the requirement of 10 CFR 52.79(a)(44) to provide a "description of the fitness for duty program required by 10 CFR part 26 and its implementation" in its application for a combined license for CCNPP Unit 3. Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC, propose to provide the Fitness for Duty (FFD) Program description required by 10 CFR 52.79(a)(44) based on the revised 10 CFR Part 26 regulations that are expected to be promulgated and become effective in early 2008 since these are the regulations that are expected to be in effect at the time of implementation of the program.~~

#### **Discussion:**

~~In an April 17, 2007, affirmation session (ADAMS ML071070361), the Commission approved a final rule amending FFD regulations in 10 CFR Part 26 for both the construction and operating phases for a new nuclear plant. The new and revised Part 26 regulations are expected to be promulgated and become effective in 2008. Implementation of a fitness for duty program at this station is not expected to be required until after 2008.~~

~~The construction phase of the Fitness for Duty Program as applied to new plants is not required to be implemented until the commencement of on-site construction to safety of security-related systems, structures and components. Calvert Cliffs 3 Nuclear Project LLC, and UniStar Nuclear Operating Services, LLC, will not begin these activities until after the amendments to 10 CFR Part 26 regulations are expected to take effect. The operational phase of the FFD Program is required to be implemented prior to fuel load.~~

~~In view of the near term effectiveness of new FFD regulations, it would be more efficient for Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC, and the NRC to submit the FFD Program description required by 10 CFR 52.79(a)(44) based on the revised Part 26 rules rather than the rules currently in effect. Accordingly,~~

~~Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC, submits a request for a schedule exemption from current Part 52 regulations pursuant to 10 CFR 52.7, "Specific Exemption," and 10 CFR 52.93, "Exemptions and Variances."~~

~~Granting this request, which is authorized by law, would allow the NRC to conduct its acceptance review of the CCNPP Unit 3 COL Application based on the revised rules that will become effective in the near future. Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC, do not expect the NRC to issue the requested COL until the revised FFD rules take effect. For this and other reasons, granting this exemption request will not present an undue risk to the public health and safety, and is consistent with the common defense and security.~~

~~The pending amendments to Part 26 create "special circumstances," as defined in 10 CFR 50.12 (Specific Exemptions) that warrant granting this exemption. Applying the current Fitness for Duty regulations in reviewing the FFD Program description required by 10 CFR 52.79(a)(44) would not serve, and is not necessary to achieve, the underlying purposes of this rule. Further, the underlying purpose of 10 CFR 52.79(a)(44) can be satisfied by meeting the requirements of the revised FFD regulations that will become effective in the near future.~~

~~Moreover, compliance with the current rule would cause undue hardship for Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC, and would also be inefficient and burdensome for the NRC staff. That approach would require Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC, to prepare, and NRC to review, information based on Fitness for Duty regulations that will soon be superseded by Part 26 amendments, and then (presumably complete a similar submittal under the revised FFD rules.~~

~~For these reasons, Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC, request approval of the requested schedule exemption from the Part 52 requirements to provide a description (in the FSAR) of the fitness for duty program that meets the current Part 26 Fitness for Duty regulations.~~