From:	Brent Ballard
Sent:	Tuesday, November 8, 2022 4:13 PM
To:	Goodman, Josh
Cc:	Lashley, Phil H; Hipo Gonzalez
Subject:	Beaver Valley Power Station, Units 1 and 2 - Request for Additional Information re: LAR to Consolidate Fuel Decay Time Technical Specifications in a New Limiting Condition for Operation Titled "Decay Time" (EPID L-2022-LLA-0071)
Attachments:	Final RAI Beaver Valley Decay Time TS Changes.docx

Good afternoon Josh,

By letter dated May 16, 2022, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22137A049), Energy Harbor Nuclear Corp. submitted a license amendment request for Beaver Valley, Units 1 and 2, to revise the technical specifications (TS) to add a limiting condition for operation (LCO) titled, “Decay Time” restricting movement involving fuel or over fuel that has occupied part of a critical reactor core within the previous 100 hours. The proposed LAR would consolidate current TS restrictions on fuel movement involving recently irradiated fuel, which appear in the applicability statements and conditions of several TS LCOs, into the new LCO.

The NRC staff has determined that additional information is needed to complete its review. Attached is the NRC staff’s request for additional information (RAI).

The NRC staff is requesting the licensee respond to the RAI by December 8, 2022. Please let me know if you have any questions.

Thank you,
Brent

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REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST TO

CONSOLIDATE FUEL DECAY TIME TECHNICAL SPECIFICATIONS TO NEW LCO

BEAVER VALLEY UNITS 1&2

DOCKET NOS. 50-334 AND 50-412

Background

By letter L-22-053 dated May 16, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22137A049), Energy Harbor Nuclear Corp. (the licensee) submitted a license amendment request (LAR) for Beaver Valley Power Station, Units 1 and 2. The proposed LAR would revise the Technical Specifications (TS) to add a Limiting Condition for Operation (LCO) titled "Decay Time" restricting movement involving fuel or over fuel that has occupied part of a critical reactor core within the previous 100 hours. The current TS restrictions on fuel movement involving fuel that has occupied part of a critical reactor core within the previous 100 hours appear in the applicability statements and conditions of several TS LCOs. The proposed LAR would consolidate those restrictions in the new LCO.

After reviewing your request, the U.S. Nuclear Regulatory Commission (NRC) staff has determined additional information is required to complete its review. The request is described below.

Regulatory Basis

Criterion 3 of Title 10 of the *Code of Federal Regulations*, part 50.36(c)(2)(ii)(C) states a technical specification limiting condition for operation of a nuclear reactor must be established for a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The prohibition of fuel movements involving recently irradiated fuel (fuel that has occupied part of a critical reactor core within the previous 100 hours), as required by the fuel handing analysis, appears in the applicability statements of TS 3.3.7, "Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation," and TS 3.3.11, "Control Room Emergency Air Cooling System (CREACS)."

Request for Additional Information

SCPB RAI-01:

The proposed LCO 3.7.11, "Control Room Emergency Air Cooling System (CREACS)," requires two CREACS trains be operable.

LCO 3.7.11	Two CREACS trains shall be OPERABLE. **- NOTE -** For Unit 1, the heat removal function of CREACS is not required OPERABLE to support fuel movement involving irradiated fuel assemblies.
APPLICABILITY:	MODES 1, 2, 3, and 4, During movement of irradiated fuel assemblies (Unit 1), During movement of fuel assemblies over irradiated fuel assemblies (Unit 1) ~~During movement of recently irradiated fuel assemblies (Unit 2),~~ ~~During movement of fuel assemblies over recently irradiated fuel assemblies (Unit 2).~~

Section 2.1 of Attachment 1 to the LAR describes that the function of the CREACS is to provide (1) a control room heat removal function following isolation of the control room, and (2) control room atmosphere purge capability for the combined units' main control room.

The staff has reviewed the proposed LCO 3.7.11, and request the licensee to clarify the following:

1) Section 2.1 of Attachment 1 to the LAR states that

> Control room isolation, …, the control room heat removal function of CREACS, is not credited for either unit for an FHA… in MODES 5 and 6… As such, the heat removal function of CREACS is not required in MODES 5 and 6 or during fuel movement involving non-recently irradiated fuel.

However, the NOTE in LCO 3.7.11 states that for Unit 1 only, the heat removal function of CREACS is not required OPERABLE to support fuel movement involving irradiated fuel assemblies. It is not clear whether the heat removal function of Unit 2 is required, or not. The licensee is requested to clarify the applicability of this NOTE for Unit 2.

Further, if the heat removal function were required for Unit 2, the APPLICABILITY of LCO 3.7.11 should have included Unit 2 for its heat removal function.

2) The APPLICABILITY of this TS includes the following:

   a) MODES 1, 2, 3, and 4

   b) During movement of irradiated fuel assemblies (Unit 1)

   c) During movement of fuel assemblies over irradiated fuel assemblies (Unit 1)

   Applicability (b) and (c) are for Unit 1 only. Section 2.1 of Attachment 1 to the LAR indicates that control room ventilation purge is required for Unit 1 FHA analysis but is

not credited for Unit 2 FHA analysis. The licensee is requested to provide applicable UFSAR sections, previous amendment, or referenced analysis to demonstrate that Unit 2 FHA analysis has not taken credit of CREACS control room atmosphere purge.

SCPB RAI-02:

The APPLICABILITY of current TS 3.3.7, "Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation," specifies several ESFAS signals for the CREVS actuation. Containment Isolation – Phase B (CIB) is one of those signals to actuate CREVS. Function 3 in Table 3.3.7-1 for CIB is removed in the proposed TS 3.3.7.

Section 3.0 of Attachment 1 (page 16 of 41) to the LAR relating to "TS 3.3.7 CREVS provides the following justifications for the removal of this actuation signal from the current TS APPLICABILITY requirements.

> Containment Isolation – Phase B
> Table 3.3.7-1 Item 3, Containment Isolation – Phase B (CIB), is proposed for deletion. Currently, Table 3.3.7-1 lists CIB as part of the CREVS Actuation Instrumentation but does not list any requirements for the instrumentation. Instead, the Table 3.3.7-1 entry appears to be for information only and simply states: *Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3.b, for all initiation functions and requirements.* References to LCO 3.3.2 for the CIB appear in the TS Bases. As such, there is no need to repeat this information in the TS LCO.
>
> In Modes 1 through 4, the LOCA accident analysis assumes an automatic Control Room Ventilation System isolation on a CIB signal and subsequent manual initiation of a CREVS fan for filtered makeup and pressurization of the control room. As stated in Table 3.3.7-1, the Operability requirements for CIB, in Modes 1 through 4, are specified in LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS)."

The staff reviewed LCO 3.3.2 Function 3.b and found no mention of CREVS Actuation Instrumentation. It is not clear how operability is addressed to ensure automatic Control Room Ventilation System isolation on CIB signal. The licensee is requested to provide additional justifications for deleting Function 3 for CIB from TS 3.3.7. Specifically, the licensee is requested to explain how LCO 3.3.2 Function 3.b addresses CREVS Actuation Instrumentation.