From:	Feintuch, Karl
To:	"Craig D Sly"
Cc:	Alvarado, Rossnyev
Subject:	ME7110 Kewaunee Amendment Request Re: Chi-over-Q - EICB Request for Additional Information (RAI) <ae>
Date:	Thursday, December 01, 2011 9:09:00 AM
Attachments:	ME7110 Chi-over-Q RAI status Tracking.xlsx ME7110 RAII-EICB 2011-11-29.docx

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(DRAFT) REQUEST FOR ADDITIONAL INFORMATION
KEWAUNEE POWER STATION
LICENSE AMENDMENT REQUEST (TAC No. ME7110):
MODIFYING THE TECHNICAL SPECIFICATIONS (TS) AND
THE CURRENT LICENSING BASIS (CLB)
TO INCORPORATE CHANGES TO
THE CURRENT RADIOLOGICAL ACCIDENT ANALYSIS (RAA) OF RECORD
(KNOWN AS CHI-OVER-Q)
DOCKET NO. 50-305

By letter dated August 30, 2011, Dominion Energy Kewaunee (DEK) submitted a license amendment request (LAR)-244 (ADAMS Accession No. ML11252A521) to revise the Kewaunee Power Station (KPS) Operating License by modifying the Technical Specifications (TS) and the current licensing basis (CLB) to incorporate changes to the current radiological accident analysis (RAA) of record. This proposed amendment would revise the current RAA for the design-basis accidents (DBAs) described in Chapter 14 of the KPS Updated Safety Analysis Report (USAR). This amendment would also fulfill a commitment made to the NRC in response to Generic Letter 2003-01, “Control Room Habitability.”

In the course of their technical review, the Instrument and Controls Technical Branch (EICB) has requested further information items to enable completion of its respective Safety Evaluation efforts. These items are provided in draft form for you to review for clarification. We seek to confirm your understanding of the items and the determination of a firm date for response, typically within 30 days of the date of this Request for Additional Information (RAI). The items we seek are attached.

Please contact me by 12/2/2011 to confirm: (1) that the items are clear to you and to the responsive DEK staff without further discussion or (2) that a clarifying conference call is needed. Upon determination that the RAI items are clear and confirmation of when responses to these items are due, these draft RAI items will be considered to be in final form.

ME7110 is a complex project and we (Craig Sly of DEK and myself) have discussed methods for (1) improved movement of RAI information, (2) improved responsiveness to NRC staff requests, and (3) more flexibility for DEK to schedule RAI response activity, over that associated with more rigidly defined RAI milestone events. This group of seven EICB RAIs will be the first RAI items to be managed by the attached spreadsheet. This and subsequent RAI traffic will be tracked by an individual identifier to provide the associated response by the individualized “request by” date.

Docketing of this information by submittal under oath or affirmation will be managed by a

reference to the associated ADAMS Accession No. (ML#) on the spreadsheet. Docketing will take place on groups of RAI item responses based on close completion schedules rather than close issuance schedules, as is now customary. Thus, if DEK can respond with individual information in 5 days, the “request by” date will be shortened and will be received sooner than the rest of the items, although its docketing event might coincide with the original set of items or with those RAI items originating from another Technical Branch.

We will periodically assess when this new process is of mutual benefit while conforming to the regulation for processing amendment requests and their associated RAIs.

The attached EICB RAI items are assigned the following tracking numbers. The associated entries are defined in the “Legend” tab of the spreadsheet:

1. ME7110-RAII-EICB-Alva-001-2011-12-29
2. ME7110-RAII-EICB-Alva-002-2011-12-29
3. ME7110-RAII-EICB-Alva-003-2011-12-29
4. ME7110-RAII-EICB-Alva-004-2011-12-29
5. ME7110-RAII-EICB-Alva-005-2011-12-29
6. ME7110-RAII-EICB-Alva-006-2011-12-29
7. ME7110-RAII-EICB-Alva-007-2011-12-29

	A	B	C	D	E	F	G	H
1	**TAC**	**Doc type**	**Source TB**	**Source TB Reviewer**	**Request by date**	**Status**	**RAI Response ML# MLnnnnnnnnn**	**Description**
2	ME7110	RAII	EICB	Alva-001	12/29/2011	draft		1, In DEK's License Amendment Request (LAR)-210, DEK proposed incorporating the control room envelope operability and surveillance requirements, R-23 operability requirements, and the control room post-accident recirculation (CRPAR) system requirements into the KPS Technical Specification (TS) ensures the systems, structures, or components (SSCs) credited for mitigating the consequences of an accident for control room occupants were included in the TS. At the same time, DEK requesting removing crediting R-23 and the control room envelope boundary from the KPS Waste Gas Decay Tank (GDT) and Volume Control (VCT) rupture accident analysis, since it determined that occupant dose consequences are achieved without crediting the control room envelope boundary or the CRPAR system. Later DEK withdrew LAR-210. However, based on the information provided in LAR-210, it is not clear why DEK in LAR-244 is requesting deleting R-23 from the TS, even though in the accident analysis performed for both LARs, DEK stated that R-23 was not credited in the proposed accident analysis. Please explain the reason to remove R-23 and replace with analysis and manual operation of the isolation dampers.
3	ME7110	RAII	EICB	Alva-002	12/29/2011	draft		2. NUREG-0737, "Clarification of TMI Action Plan Requirements," Item III.D.3.4, "Control Room Habitability Requirements," required licensees to assure that control room operators will be adequately protected against the effects of accidental release of toxic and radioactive gas and that the plant can be safely operated or shutdown under design basis accident conditions. LAR proposed removing radiation monitor channel R-23 as a required channel for CRPAR initiation, modifying DEK previously approved by the NRC compliance with NUREG-0737. Please describe if R-23 is removed, how DEK will comply with NUREG-0737.

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1	**TAC**	**Doc type**	**Source TB**	**Source TB Reviewer**	**Request by date**	**Status**	**RAI Response ML# MLnnnnnnnnn**	**Description**
4	ME7110	RAII	EICB	Alva-003	12/29/2011	draft		3. During the NRC staff review of LAR-210, EICB issued RAI January 30, 2008 letter (ADAMS Accession No. ML080280107). DEK provided a response on its April 3, 2008 letter (ADAMS Accession No. ML080950096); the response to question 1b included a logic diagram for operation of the control room ventilation radiation monitor. To assist NRC staff review, please address the following: a. Section 3.1.1 of Attachment 1 of LAR-244 (ADAMS Accession No. ML11252A521) states that radiation monitor R-23, as a single channel, initiates both trains of the CRPAR system and each SI train initiates the associated CRPAR fan and filtration unit train. If R-23 is removed from the logic, will it be necessary that both SI trains be actuated to initiate CRPAR fans, filtration unit trains, and close dampers ACC-1A, ACC-1B, ACC-2, and ACC-5? b. This logic shows that safety injection (SI) train A closes dampers ACC-1A and ACC-1B, and SI train B closes dampers ACC-2 and ACC-5. If R-23 is removed, how will dampers ACC-2 and ACC-5 close if the SI train B actuation signal fails? c. Provide a marked logic for the control room ventilation radiation monitor assuming that R-23 is removed from the logic.
5	ME7110	RAII	EICB	Alva-004	12/29/2011	draft		4. LAR-244 is requesting removal of R-23 from the CRPAR system. Please describe how DEK would reflect removal of R-23 from the CRPAR system in an update of the FSAR for the following items: a. Figure 9.6-6, "Control Room Air Conditioning System-Flow Diagram," in the Final Safety Analysis Report (FSAR) shows R-23 location in the CRPAR system. Provide a marked diagram for an update of the FSAR after removal of R-23. b. Section 7.7.1, "Control Room," in the FSAR describes how R-23 monitors and activates the control room ventilation.
6	ME7110	RAII	EICB	Alva-005	12/29/2011	draft		5. LAR-244, Attachment 1, Section 4.2.3 and Attachment 4, Section 2.7 state that revised radiological accident analysis (RAA) credits R-23 to limit consequences of the Locked Rotor Action (LRA) and Fuel Handling Accident (FHA). However, the RAA approved in license amendment 190 (current radiological analysis of record for KPS) credited R-23 high radiation signal for mitigating the radiological consequences to control room occupants for the LRA, GDT and VCT Rupture, and FHA. Please explain why the revised RAA (submitted in LAR-244) does not state whether credit for R-23 is considered for mitigating GDT and VCT rupture.

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1	**TAC**	**Doc type**	**Source TB**	**Source TB Reviewer**	**Request by date**	**Status**	**RAI Response ML# MLnnnnnnnnn**	**Description**
7	ME7110	RAII	EICB	Alva-006	12/29/2011	draft		6. LAR-244, Section 4.2.3 describes that removal of R-23 would require manual actions to ensure post-accident control room dose is maintained within limits and are required to limit consequences of the FHA and LRA events. Note that the current accident analysis does not credit operator action to isolate the control room during for FHA. Attachment 3, Section B.3.3.7 states that manual actuation of the CRPAR System is a backup for the SI signal actuation. To assist NRC staff review, please address the following: a. Manual actuation is not part of the logic diagram for operation of the control room ventilation radiation monitor (FSAR Figure 9.6-6). Please clarify if this would be included in the logic diagram. b. SI signal is not considered for all accident events (i.e., FHA, LRA, and GDT/VCT ruptures don't consider SI). In these cases manual action would be required. Please clarify if this would be included in the logic diagram.
8	ME7110	RAII	EICB	Alva-007	12/29/2011	draft		7. LAR-244, Attachment 4, Section 2.7, 3.3.1, and 3.6.1, state that full control room isolation require action by the operator to close monitor dampers that are not included in the isolation logic (of the control room ventilation radiation monitor). This was not discussed in previous LARs or in FSARs. Please explain the following: a. Where is this information described? Provide a logic diagram and a description for operation of all dampers required for the control room ventilation radiation system. b. Are these monitor dampers closed by the SI signal? If not, what signal actuates them?
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TAC	Doc type	Source Tech Branch	Source Reviewer and Ser#	Request by date	Status	ML#	Description
ME7110	RAII	EICB	Alva-001	12/29/2011			Assigned TAC No. This may be different than ME7110 if future sub-projects need other TAC No.
	RAII						RAII = Request for information item RAIR = Request for information response Suppl = docketed supplement
		EICB					EICB = Instrumentation and Control Branch IHPB = Human Performance Branch AADB = Accident Dose Branch ITSB = Technical Specifications Branch
			Alva-001				Alva-nnn = Items from Alvarado
				12/29/2011			Request by date (updated as mutually understood by PM, Reviewer and Licensee; maintained by PM and Licensee)
					draft		draft = as issued prior to clarification firm = as mutually understood and to be respond to by licensee resp = contains docketed response
						ML#	If RAIR, then = docketed ML# If RAII, then = issued RAI If Suppl, then = docketed supplement letter

REQUEST FOR ADDITIONAL INFORMATION
DOMINION ENERGY KEWAUNEE POWER STATION MODIFICATION TO TECHNICAL SPECIFICATION 3.3.7 (TAC# ME7110)

1. **(ME7110-RAII-EICB-Alva-001-2011-12-29)** In DEK's License Amendment Request (LAR)-210, DEK proposed incorporating the control room envelope operability and surveillance requirements, R-23 operability requirements, and the control room post-accident recirculation (CRPAR) system requirements into the KPS Technical Specification (TS) ensures the systems, structures, or components (SSCs) credited for mitigating the consequences of an accident for control room occupants were included in the TS. At the same time, DEK requesting removing crediting R-23 and the control room envelope boundary from the KPS Waste Gas Decay Tank (GDT) and Volume Control (VCT) rupture accident analysis, since it determined that occupant dose consequences are achieved without crediting the control room envelope boundary or the CRPAR system. Later DEK withdrew LAR-210. However, based on the information provided in LAR-210, it is not clear why DEK in LAR-244 is requesting deleting R-23 from the TS, even though in the accident analysis performed for both LARs, DEK stated that R-23 was not credited in the proposed accident analysis. Please explain the reason to remove R-23 and replace with analysis and manual operation of the isolation dampers.

2. **(ME7110-RAII-EICB-Alva-002-2011-12-29)** NUREG-0737, "Clarification of TMI Action Plan Requirements," Item III.D.3.4, "Control Room Habitability Requirements," required licensees to assure that control room operators will be adequately protected against the effects of accidental release of toxic and radioactive gas and that the plant can be safely operated or shutdown under design basis accident conditions. LAR proposed removing radiation monitor channel R-23 as a required channel for CRPAR initiation, modifying DEK previously approved by the NRC compliance with NUREG-0737. Please describe if R-23 is removed, how DEK will comply with NUREG-0737.

3. **(ME7110-RAII-EICB-Alva-003-2011-12-29)** During the NRC staff review of LAR-210, EICB issued RAI January 30, 2008 letter (ADAMS Accession No. ML080280107). DEK provided a response on its April 3, 2008 letter (ADAMS Accession No. ML080950096); the response to question 1b included a logic diagram for operation of the control room ventilation radiation monitor. To assist NRC staff review, please address the following:

    a. Section 3.1.1 of Attachment 1 of LAR-244 (ADAMS Accession No. ML11252A521) states that radiation monitor R-23, as a single channel, initiates both trains of the CRPAR system and each SI train initiates the associated CRPAR fan and filtration unit train. If R-23 is removed from the logic, will it be necessary that both SI trains be actuated to initiate CRPAR fans, filtration unit trains, and close dampers ACC-1A, ACC-1B, ACC-2, and ACC-5?

    b. This logic shows that safety injection (SI) train A closes dampers ACC-1A and ACC-1B, and SI train B closes dampers ACC-2 and ACC-5. If R-23 is removed, how will dampers ACC-2 and ACC-5 close if the SI train B actuation signal fails?

    c. Provide a marked logic for the control room ventilation radiation monitor assuming that R-23 is removed from the logic.

4. **(ME7110-RAII-EICB-Alva-004-2011-12-29)** LAR-244 is requesting removal of R-23 from the CRPAR system. Please describe how DEK would reflect removal of R-23 from the CRPAR system in an update of the FSAR for the following items:

    a. Figure 9.6-6, "Control Room Air Conditioning System-Flow Diagram," in the Final Safety Analysis Report (FSAR) shows R-23 location in the CRPAR system. Provide a marked diagram for an update of the FSAR after removal of R-23.

    b. Section 7.7.1, "Control Room," in the FSAR describes how R-23 monitors and activates the control room ventilation.

5. **(ME7110-RAII-EICB-Alva-005-2011-12-29)** LAR-244, Attachment 1, Section 4.2.3 and Attachment 4, Section 2.7 state that revised radiological accident analysis (RAA) credits R-23 to limit consequences of the Locked Rotor Action (LRA) and Fuel Handling Accident (FHA). However, the RAA approved in license amendment 190 (current radiological analysis of record for KPS) credited R-23 high radiation signal for mitigating the radiological consequences to control room occupants for the LRA, GDT and VCT Rupture, and FHA. Please explain why the revised RAA (submitted in LAR-244) does not state whether credit for R-23 is considered for mitigating GDT and VCT rupture.

6. **(ME7110-RAII-EICB-Alva-006-2011-12-29)** LAR-244, Section 4.2.3 describes that removal of R-23 would require manual actions to ensure post-accident control room dose is maintained within limits and are required to limit consequences of the FHA and LRA events. Note that the current accident analysis does not credit operator action to isolate the control room during for FHA. Attachment 3, Section B.3.3.7 states that manual actuation of the CRPAR System is a backup for the SI signal actuation. To assist NRC staff review, please address the following:

    a. Manual actuation is not part of the logic diagram for operation of the control room ventilation radiation monitor (FSAR Figure 9.6-6). Please clarify if this would be included in the logic diagram.

    b. SI signal is not considered for all accident events (i.e., FHA, LRA, and GDT/VCT ruptures don't consider SI). In these cases manual action would be required. Please clarify if this would be included in the logic diagram.

7. **(ME7110-RAII-EICB-Alva-007-2011-12-29)** LAR-244, Attachment 4, Section 2.7, 3.3.1, and 3.6.1, state that full control room isolation require action by the operator to close monitor dampers that are not included in the isolation logic (of the control room ventilation radiation monitor). This was not discussed in previous LARs or in FSARs. Please explain the following:

    a. Where is this information described? Provide a logic diagram and a description for operation of all dampers required for the control room ventilation radiation system.

    b. Are these monitor dampers closed by the SI signal? If not, what signal actuates them?