NRR-PMDAPEm Resource

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To: Feintuch, Karl; Krsek, Robert; Barclay, Kevin; Jandovitz, John
Subject: RAI for KPS RR-2-4 (May 3, 2012)
Attachments: RAI RR-2-4.docx

Attached are the NRC staff's questions for KPS RR-2-4.

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"Feintuch, Karl" <Karl.Feintuch@nrc.gov>
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REQUEST FOR ADDITIONAL INFORMATION
10 CFR 50.55a REQUEST NO. RR-2-4

By application dated May 3, 2012 (Reference 1), Dominion Energy Kewaunee, Inc. (DEK), requested approval of 10 CFR 50.55a Request RR-2-4 for the Fourth Ten-year Interval of the Inservice Inspection (ISI) Program for Kewaunee Power Station (KPS). 10 CFR 50.55a Request RR-2-4 proposed a temporary deviation from the requirements of ASME Section XI, Appendix IX, Article IX-1000, Paragraph (c)(2), which prohibits the use of clamping devices on "… portions of a piping system that forms the containment boundary" and ASME Section XI, Appendix IX, Article IX-6000(a), which states that the area immediately adjacent to the clamping device shall be examined using a volumetric method.

On May 3, 2012, the Nuclear Regulatory Commission (NRC) staff requested additional information (RAI) regarding 10 CFR 50.55a Request RR-2-4.

The RAI questions are provided below.

NRC Question 1

DEK's Request RR-2-4, Attachment 2, page 3, states the following.

> Of note is that the drain path for the repair activities by valve RHR-600 is at a high point in the system. This will require evacuating the water at the weld line when repairing the affected piping. This condition also allows a water column of approximately 12 feet between RHR-600 and inside containment valves RHR-11 and SI-302A, which provides additional protection of the containment boundary.

Please provide additional details about this process.

Response:

NRC Question 2

DEK's Request RR-2-4, Attachment 2, page 7, final bullet discusses a temporary plugging device. The staff is trying to understand the specific purpose of the temporary plugging device that will be staged at the work location. If leakage develops, does the licensee intend to install the plug to prevent leakage from coming out of the hole and then reroute the leakage to higher vents while weld repair activities continue?

Response:

NRC Question 3

With the lack of the previously failed fillet weld, how does DEK intend to meet the friction requirements of ASME Code, Article IX, 3200(d), with the proposed designs in the temporary modifications provided (Request RR-2-4, Enclosure 1, Att. 3, p. 9 of 12 and Enclosure 2, Att. 3, p. 9 of 13); or, does the structural restraint satisfy the Article IX, 3200(d) friction requirements?

Response:

NRC Question 4

If valve RHR-11 leaks by, how will DEK be able to remove the water that would flow into the 10-inch line?

Response:

NRC Question 5

If the water leaks too fast into the 10-inch pipe, would the weld repair be able to be properly completed?

Response:

NRC Question 6

Will the temporary plugging device allow effecting a permanent ASME Code repair by transitioning through to MODE 6 and defueling (without leakage past the plug)? If leakage is expected, what is the maximum expected leakage and would that affect RHR availability?

Response:

NRC Question 7

Please provide a reasonable time limit on the duration that may be needed to complete all associated activities that rely on Request RR-2-4 (time at which point RR-2-4 would expire).

Response:

NRC Question 8

DEK's Request RR-2-4, Enclosure 1, Attachment 1 (Temporary Modification 2012-11), shows the design drawing of the structural restraining clamp.

1. Provide dimensions of: clamps (Item 1); bolts (item 4); and steel plate (Item 2).
2. Provide stress calculation for: clamps (Item 1); bolts (item 4); and steel plate (Item 2). If this information is in the submittal, please specify the location.
3. Provide a detailed drawing (with dimensions) of the coupling (Item 3 on the drawing), on the top of valve RHR-600, that would limit the axial movement of the 3/4-inch pipe.
4. Item 4 in the bill of material indicates that it is a 1-inch pipe; however, in the drawing, it appears that it is a bolt or nuts. Clarify how Item 4 (1-inch pipe) is constructed.

Response:

NRC Question 9

DEK's Request RR-2-4, Enclosure 2, (Temporary Modification 2012-12), page 10 discusses the pipe hangers and supports (RHR-H9 and RHR-H29) in the vicinity of valve RHR-600 and the degraded ¾" pipe.

1. Provide a drawing showing the location of the hangers and pipe supports in the vicinity of valve RHR-600. The drawing should show the distance of the pipe supports from the ¾" pipe and the direction of the support (hangers or lateral

supports). Discuss whether RHR-H9 and RHR-H29 are rigid hangers or spring hangers.

2. It is not clear whether enclosure 2 includes the stress analysis for the parts/components in the second mechanical clamp enclosure. The stress analysis in Enclosure 2 appears to be for the original mechanical clamp enclosure design (TM 2012-11). Clarify or identify where the stress analysis for the second mechanical clamp design is.

Response:

NRC Question 10

Please provide DEK's stress analysis of the bolts in the structural restraint.

Response:

NRC Question 11

Please provide the isometric drawings for all piping discussed in Request RR-2-4, Attachment 2.

Response:

NRC Question 12

Please provide an estimate of the heat generation currently being removed by the reactor coolant system (decay heat and pump heat). Please include the following information.

- The current approximate RCS water volume.
- The current approximate steam generator (secondary side) water volume.

Response:

NRC Question 13

Is the temporary plugging device that is discussed in RR-2-4, Attachment 2, intended to allow DEK to continue the weld repair if excessive leakage is encountered?

Response:

NRC Question 14

If the temporary plugging device needs to be used, will DEK proceed to MODE 6 to effect repairs (with a functional and available RHR system)?

Response:

NRC Question 15

Regarding Request RR-2-4, Attachment 2, page 2 ("Pressure and Temperature Range for Proposed Repair"), please provide additional detail on how RCS leakage will be monitored. RR-2-4 states "No RCS leakage is expected into the affected section of piping and the ASME Code repair will commence." Does DEK have specific acceptance criteria for leakage prior to allowing permanent repair to commence? Does DEK have specific acceptance criteria for leakage during the repair activities?

Response:

NRC Question 16

Regarding "Preventing Pressure Boundary Leakage", in RR-2-4, Attachment 2, page 3, is valve RHR-701 another valve that is being used for isolation to affect permanent repair. If yes, please provide a discussion on this valve for this purpose. If not, why is it not needed for isolation?

Response:

NRC Question 17

Please provide additional information regarding the statement in RR-2-4, Attachment 2, page 4, that "The affected portion of piping will be depressurized and water level will be monitored." Specifically, details are needed on how water level will be monitored and what leakage acceptance criteria have been established. Include the following in the above discussion.

- Are the vent valves referred to in RR-2-4 normally closed in MODE 4 (how does this affect containment requirements)?
- Will both sides of RHR-11 be monitored for leakage?

Response:

NRC Question 18

Request RR-2-4, Attachment 2, page 4, states "If leakage into the affected section of piping develops while the piping is breached for repair activities, TS LCO 3.4.13 would be evaluated." Please clarify whether leakage into the affected section of piping would be treated as identified, unidentified, or pressure boundary leakage.

Response:

NRC Question 19

Regarding the "Sequence of Activities" in Request RR-2-4, Attachment 2, page 6, will leak monitoring, to verify that leakage is below established criteria, take place prior to breaching the affected pipe by RHR-600?

Response:

NRC Question 20

Describe, in detail, the draindown process for draining the piping in the affected area for establishing the conditions for effecting ASME Code class repairs.

Response:

NRC Question 21

How does the licensee know that the pipe is dry before being cut and how will it remain dry while being welded?

Response:

NRC Question 22

Please explain how the structural restraining clamp fits with the hub clamp (ref DWG F-003143).

Response:

NRC Question 23

How will any potential leakage be monitored prior to removing the clamp/defective pipe and how will DEK assure that no untoward condition (wetness) in the weld area occurs?

Response:

NRC Question 24

Enclosure 2 (TM 2012-12) Attachment 3, page 2 of 13, states that vendor provided no torque specifications for the bolting. Please explain.

Response:

NRC Question 25

10 CFR 50.2, “Definitions”, defines the term *reactor coolant pressure boundary*. This definition of the term would apply to Kewaunee Power Station (KPS) unless an exemption from this regulation has been approved or unless 10 CFR 50.2 contained different language for this term at the time of plant licensing in 1973. The staff notes that the 1973 definition of *reactor coolant pressure boundary* contained in 10 CFR 50.2 is unchanged from the current definition of that term. If DEK believes that the 50.2 definition of *reactor coolant pressure boundary* is not applicable to KPS, please provide a basis for that position.

Response:

REFERENCE

1. Letter from A. J. Jordan (DEK) to Document Control Desk (NRC), “Inservice Inspection Program Fourth Ten-Year Interval 10 CFR 50.55a Request No. RR-2-4”, dated May 3, 2012.