

From: Darl Hood
To: Internet:clara.rushworth@nmcco.com; internet:ken.putnam@nmcco.com
Date: 6/26/02 3:28PM
Subject: Draft Questions for DAEC's RI-ISI Submittal

Clara

Attached are draft questions from the two NRC staff technical branches (EMCB and SPSB) involved with the review of your 03/29/02 relief request to implement a risk-informed ISI program at DAEC. Let me know if you would like to discuss them and how you would like to proceed.

CC: Lakshminaras Raghavan; Mark Rubin; Prakash Patnaik; Sarah Malik; Stephen Dinsmore; Terence Chan

DRAFT

REQUEST FOR ADDITIONAL INFORMATION REGARDING THE RISK-INFORMED INSERVICE INSPECTION (RI-ISI) PROGRAM FOR DUANE ARNOLD

Provide the following information regarding your letter of March 29, 2002, requesting NRC staff approval to implement a Risk-Informed Inservice Inspection (RI-ISI) Program for the Duane Arnold Energy Center (DAEC) as an alternative to Section XI requirements of the existing American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) for the selection and examination of Class 1 and 2 piping welds:

1. In your letter dated March 29, 2002, you state that the DAEC Level 1 and 2 Probabilistic Safety Assessment (PSA) was used to evaluate the consequences of pipe ruptures in the RI-ISI assessment. What is the model name and date of the PSA version used in your RI-ISI assessment?
2. Will DAEC's RI-ISI program be updated every 10 years and submitted to the NRC consistent with the current ASME Code, Section XI, requirements?
3. Under what conditions would DAEC's RI-ISI program be resubmitted to the NRC before the end of any 10-year interval?
4. In your letter, you state that 61.3% of the RI-ISI examinations will be performed during the second and third periods of the third inspection interval. What percentage will be examined by the end of the second period and by the end of the third period?
5. What percentage of RI-ISI examinations was covered in the 38.7% of ASME Code, Section XI, examinations conducted in the first inspection period of the current interval?

Mail Envelope Properties (3D1A15C2.52A : 17 : 21158)

Subject: Draft Questions for DAEC's RI-ISI Submittal
Creation Date: 6/26/02 3:28PM
From: Darl Hood

Created By: DSH@nrc.gov

Recipients	Action	Date & Time
clara rushworth (Internet:clara.rushworth@nmcco	Transferred	06/26/02 03:28PM
ken putnam (internet:ken.putnam@nmcco.com)	Transferred	06/26/02 03:28PM
nrc.gov owf2_po.OWFN_DO MPR CC (Mark Rubin) PXP CC (Prakash Patnaik) SCD1 CC (Stephen Dinsmore) SMM4 CC (Sarah Malik) TLC CC (Terence Chan)	Delivered	06/26/02 03:28PM
nrc.gov owf4_po.OWFN_DO LXR1 CC (Lakshminaras Raghavan)	Delivered	06/26/02 03:28PM
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No
Standard

To Be Delivered:
Status Tracking:

Immediate
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From: T.J. Kim (Tae Kim)
To: Tony.browning@nmcco.com
Date: 8/16/02 10:39AM
Subject: Fwd: Duane Arnold Draft RAI Response - Risk Informed ISI

Mr. Browning-

As discussed, attached is a followup question from our tech staff based on our review of your draft RAI response. Please let me know if you have any questions.

thanks,
TJ Kim
301-415-1392

CC: clara.rushworth@nmcco.com; Darl Hood; Lakshminaras Raghavan; Prakash Patnaik

Mail Envelope Properties (3D5D0EA5.FA3 : 3 : 16839)

Subject: Fwd: Duane Arnold Draft RAI Response - Risk Informed ISI
Creation Date: 8/16/02 10:39AM
From: T.J. Kim (Tae Kim)

Created By: TJK3@nrc.gov

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 Tony.browning (Tony.browning@nmcco.com))

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Options

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Priority: Standard
Reply Requested: No
Return Notification: None

Concealed Subject: No
Security: Standard

From: Prakash Patnaik
To: TJK3
Date: 8/16/02 10:09AM
Subject: Duane Arnold Draft RAI Response

The draft response to our RAI states that the licensee has performed 38.7% of ASME Section XI examinations in the first period of the third 10-Yr ISI interval and plans to perform 61.3% of the RI-ISI exams in the second and third period of the interval. The staff wants to identify the Code requirement which states that the licensee can take maximum credit for 34% exams conducted in the first period. Therefore, the licensee must perform 66% of exams in second & third period instead of 61.3% as stated in the response. The staff also wants that the exams planned should cover high safety significant welds.
Thanks!
Pat

CC: Sarah Malik

Mail Envelope Properties (3D5D0795.AB1 : 8 : 36942)

Subject: Duane Arnold Draft RAI Response
Creation Date: 8/16/02 10:09AM
From: Prakash Patnaik

Created By: PXP@nrc.gov

Recipients

nrc.gov
owf2_po.OWFN_DO
SMM4 CC (Sarah Malik)

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08/16/02 10:09AM

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Expiration Date: None
Priority: Standard
Reply Requested: No
Return Notification: None

Concealed Subject: No
Security: Standard

From: "Rushworth, Clara " <Clara.Rushworth@nmcco.com>
To: <dsh@nrc.gov>
Date: 7/24/02 1:39PM
Subject: draft RI ISI RAI

<<draft RAI_RI_response.doc>>

Good afternoon Darl. Attached is our draft response to the questions on RI ISI.

As we talked about the other day, I will be out of town on vacation and then at a meeting, and be back in the office on Friday August 2. While I'm gone, please contact Tony Browning if you need anything. Tony's phone is (319) 851-7750 and his email is Tony.Browning@nmcco.com

Thanks,
Clara

CC: "Browning, Tony " <Tony.Browning@nmcco.com>, "Karrick, John "
<John.Karrick@nmcco.com>, "Putnam, Ken " <Ken.Putnam@nmcco.com>, "Park, Gary "
<Gary.Park@nmcco.com>, "Severson, Russ " <Russ.Severson@nmcco.com>, "Christiansen, Lance "
<Lance.Christiansen@nmcco.com>

DRAFT

Question 1

In your letter dated March 29, 2002, you state that the DAEC Level 1 and 2 Probabilistic Safety Assessment (PSA) was used to evaluate the consequences of pipe ruptures in the RI-ISI assessment. What is the model name and date of the PSA version used in your RI-ISI assessment?

RESPONSE

Level 1 and Level 2 Probabilistic Risk Assessment (PRA) models were developed as part of the Individual Plant Examination (IPE) submitted to the NRC in November 1992 in response to Generic Letter 88-20. The DAEC has maintained these PRA models to conform to plant configuration and operating procedure changes subsequent to the original development, i.e., it is a "living PRA."

The RI-ISI assessment was done using revision 4B of the DAEC PRA (which used the EPRI Risk and Reliability Workstation Suite of Codes (CAFTA)). The level 1 4B model was put into use in June of 2000. The level 2 4B model was put into use February of 2001.

Question 2

Will DAEC's RI-ISI program be updated every 10 years and submitted to the NRC consistent with the current ASME Code, Section XI, requirements?

RESPONSE

The ISI program will be updated and submitted to the NRC consistent with regulatory requirements in effect at the time such update is required (currently every 10 years). This may again take the form of a relief request to implement an updated RI-ISI program depending on future regulatory requirements.

Question 3

Under what conditions would DAEC's RI-ISI program be resubmitted to the NRC before the end of any 10-year interval?

RESPONSE

The RI-ISI program will be resubmitted to the NRC prior to the end of any 10-year interval if there is some deviation from the RI-ISI methodology described in the initial submittal or if industry experience determines that there is a need for significant revision to the program as described in the original submittal for that interval. DAEC will initiate tracking documents to ensure that the RI-ISI program is monitored and periodically reviewed for risk ranking as discussed in Section 4 of the initial submittal. Revisions made as a result of these reviews will be considered for submittal as outlined above.

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Question 4

In your letter, you state that 61.3% of the RI-ISI examinations will be performed during the second and third periods of the third inspection interval. What percentage will be examined by the end of the second period and by the end of the third period?

RESPONSE

DAEC is currently in the middle of the second period of its third inspection interval. DAEC currently plans to perform 32.8% (23 out of 70) of the RI-ISI program examinations during the second period and 28.5% (20 out of 70) of the RI-ISI program examinations during the third period of the third interval for a total of 61.3%.

Question 5

What percentage of RI-ISI examinations was covered in the 38.7% of ASME Code, Section XI, examinations conducted in the first inspection period of the current interval?

RESPONSE

DAEC performed 107 ASME Code, Section XI (1989 Edition) examinations during the first and second inspection periods. Of those examinations that were completed, 10% (7 out of 70) in the first period and 11% (8 out of 70) in the second period are included in the RI-ISI selection.

DRAFT

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Subject: draft RI ISI RAI
Creation Date: 7/24/02 1:28PM
From: "Rushworth, Clara " <Clara.Rushworth@nmcco.com>

Created By: Clara.Rushworth@nmcco.com

Recipients

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 DSH (Darl Hood)

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Lance.Christiansen CC (Christiansen, Lance
 Russ.Severson CC (Severson, Russ)
 Gary.Park CC (Park, Gary)
 Ken.Putnam CC (Putnam, Ken)
 John.Karrick CC (Karrick, John)
 Tony.Browning CC (Browning, Tony)

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Return Notification: None

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