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December 14, 2006

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Serial No. 06-251A
NL&OS/PRW R0
Docket No. 50-423
License No. NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING RELAXATION REQUEST IR-2-46, REACTOR PRESSURE VESSEL HEAD INSPECTIONS, (TAC NO. MD1735)

In a letter dated May 16, 2006, Dominion Nuclear Connecticut, Inc. (DNC) submitted a request for relaxation to the reactor pressure vessel head inspection requirements of the First Revised NRC Order (EA-03-009). In a facsimile dated July 14, 2006, the NRC forwarded a request for additional information (RAI) in order for the staff to complete its evaluation of the DNC request. The questions were subsequently discussed in telephone conferences held on September 20, 2006 and November 9, 2006. The response to the RAI and additional information that was discussed with the NRC staff during the teleconferences are provided in the attachment to this letter.

If you have any questions in regard to the responses provided or require additional information, please contact Mr. Paul R. Willoughby at (804) 273-3572.

Very truly yours,

Gerald T. Bischof
Vice President – Nuclear Engineering

Commitments in this letter: None

Attachments: (1)

cc: U.S. Nuclear Regulatory Commission
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Mr. S. M. Schneider
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COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Gerald T. Bischof, who is Vice President - Nuclear Engineering of Dominion Nuclear Connecticut, Inc. He has affirmed before me that he is duly authorized to execute and file the foregoing document in behalf of that company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 14th day of December, 2006.

My Commission Expires: May 31, 2010.

Vicki L. Hull
Notary Public

(SEAL)

ATTACHMENT 1

RELAXATION REQUEST IR-2-46, REACTOR PRESSURE VESSEL HEAD INSPECTIONS (TAC NO. MD1735)

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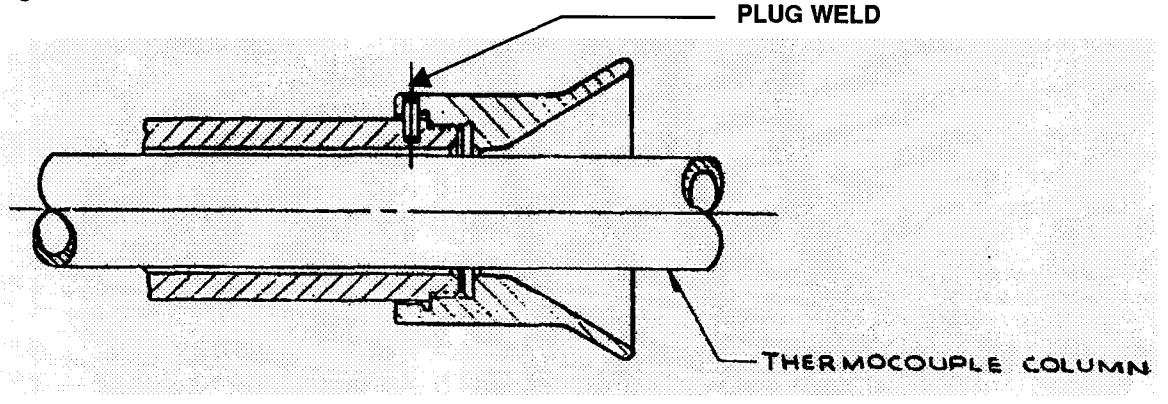
NRC Question No. 1

Provide details of the attachment of the guide funnel to the nozzle, including details of the weld length, size, filler material type, etc.

DNC Response

The guide funnel to the nozzle is essentially a threaded attachment, as is shown in the figure below.



Detailed drawings that are being used to plan for this inspection provide a detail that shows a plug-welded pin through the guide funnel. The assembly drawing shows the pin and threading that are used to attach the guide funnel to the nozzle. Therefore, DNC concludes that the nozzle material was not welded to attach the guide funnels.

One Core Exit Thermocouple (CET) nozzle that is a spare is not expected to have a guide funnel attached. The other four CET nozzles are expected to have the guide funnel. Each of the five CET nozzles are expected to be threaded on the outer diameter and tapered on the inner diameter on the bottom of the nozzle as previously described by the May 16, 2006, DNC letter.

NRC Question No. 2

Describe how the weld attaching the guide funnel to the nozzle will affect the ability of the ultrasonic test (UT), from the inner diameter of the nozzle, to detect flaws.

DNC Response

Although the internal taper on the nozzles will have an impact upon the UT examination coverage that can be obtained, the presence of guide funnels will not affect volumetric examination coverage and performance of a UT.

NRC Question No. 3

When determining the operating stresses in the nozzle at the top of the guide funnel, how will the weld attaching the guide funnel to the nozzle be taken into consideration?

DNC Response

The operating stresses in the nozzle are not affected by the use of a plug weld on the guide funnel. Refer to the figure in response to NRC Question 1.

NRC Question No. 4

In the second paragraph under the reason for request, a distance is referred to. The paragraph states: "Based on comparison with similarly designed RPV [reactor pressure vessel] closure heads, this distance is reasonably estimated at less than 1.0-inch." What distance is this referring to?

DNC Response

Dimension V below the toe of the J-groove weld is on Figure 1 of the May 16, 2006, request. Dimension V represents the minimum expected volumetric examination coverage that can be achieved below the J-groove weld at Millstone Power Station Unit 3 (MPS3). Dimension V is not a known value at this time, but will be defined by the shortest distance in elevation between the top of the internal diameter taper and the lowest point at the toe of the J-groove weld, or weld crown, and the capability of the UT examination equipment to volumetrically interrogate in this region of the nozzle. Based upon comparison with similar designs, DNC expects that Dimension V will vary between 0.25 inches and 0.5 inches for the CET nozzles.

NRC Question No. 5

Approval of the licensee's relief request is dependent on the NRC staff evaluating the results of the licensee's complete structural integrity evaluation and making a finding that it is acceptable. DNC stated that it will provide this information to the NRC before entry into Mode 4 following refueling. What is the earliest estimated date that this information for the structural evaluation can be provided? That is, can the evaluation be completed sooner for a variety of distances from toe of the J-grove weld to the top of the funnel?

DNC Response

The structural evaluation for the CET nozzles is expected to be available for review by the end of January 2007. This date is our best estimate, and is based upon our purchase agreements with our vendor. When this information becomes available DNC will provide the information to the NRC staff.

NRC Question No. 6

[Include the additional items discussed during the teleconferences on September 20 and November 9, 2006.]

DNC Response:

On September 20, 2006, additional items were discussed that partially amend the original proposal. The additional items were recently approved by the NRC in a similar request for Seabrook, Unit 1.[1] Considering the additional items described below, the MPS3 request is only differentiated from the recent NRC approval for Seabrook, Unit 1, by the outstanding plant specific structural evaluation that is still in development.

1. DNC understands that relaxation of inspection requirements of the First Revised NRC Order (EA-03-009) will be conditioned upon the following requirement:

   If the NRC staff finds the crack-growth formula in MRP-55 is unacceptable, DNC will revise its analysis that justifies the relaxation of the Order within 30 days from the date that the NRC informs DNC of an NRC-approved crack-growth rate formula. If the revised analysis shows that the crack-growth acceptance criteria are exceeded prior to the end of the current operating cycle, this relaxation request will be rescinded and DNC will, within 72 hours, submit to the NRC a written justification for continued operation. If the revised analysis shows that the crack-growth acceptance criteria are to be exceeded during the subsequent operating cycle, DNC will, within 30 days, submit the revised analysis for NRC review. If the revised analysis shows that the crack-growth acceptance criteria

[1] NRC letter, "Seabrook Station, Unit 1 – Relaxation of the First Revised Order EA-03-009 (TAC No. MD2112)," September 27, 2006, ADAMS Accession No. ML062620342.

are not exceeded during either the current operating cycle or the subsequent operating cycle, DNC will, within 30 days, submit a letter to the NRC confirming that its analysis has been revised.

2. The duration of the proposed alternative inspection for the reactor pressure vessel will apply for the time period the Order is in effect, and with the condition described by the additional requirement in item 1 above.

3. Based upon structural evaluation from a similar vessel head,[2] DNC believes this proposal for volumetric examination can satisfy the 20 ksi stress criteria of the Order without a complimentary surface examination on the inner diameter at the bottom of the nozzle, thereby minimizing the potential for cracking to exist in the uninspected areas of the nozzle. However, should the structural evaluation of the MPS3 vessel head nozzles indicate that operating stress levels (including all residual and normal operating stresses) are 20 ksi in tension or greater in the area of the bottom of CET nozzles that are not volumetrically examined, a supplemental surface examination of the inner diameter tapered region of the CET nozzles will be performed. This type of surface examination will be limited to the inner diameter tapered region of the nozzles due to the difficulty in achieving acceptable surface examination of the outer diameter threaded region and the inability to remove the CET guide funnels.

   Justification: The NRC has already identified the 20 ksi operating stress level as a conservative threshold necessary to initiate PWSCC. The threshold stress of 20 ksi is incorporated into the First Revised Order by reducing the inspection area below the J-Groove weld from 2 inches to 1 inch if the operating stresses are below 20 ksi. Performing a supplemental surface examination to the planned volumetric examination, however, will result in both significant and unnecessary radiation exposure to examiners if the area not volumetrically examined at the bottom of the CET nozzles is also indicated to be less than the threshold stress of 20 ksi. Consequently, this supplemental surface examination will not be performed unless the conditions are actually met where operating stress levels (including all residual and normal operation stresses) are 20 ksi in tension or greater.

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[2] NRC letter, "Seabrook Station, Unit 1 – Relaxation of the First Revised Order EA-03-009 (TAC No. MD2112)," September 27, 2006, ADAMS Accession No. ML062620342.