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Constellation Energy

April 27, 2004

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit No. 1; Docket No. 50-317
Supplemental Data for Request for Relaxation from Interim Inspection Requirements for Reactor Pressure Vessel Head (TAC No. MC1921)

REFERENCES:

(a) Letter from Mr. G. Vanderheyden (CCNPP) to Document Control Desk (NRC), dated January 30, 2004, Request for Relaxation from NRC Order EA-03-009, "Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors"

(b) Letter from Mr. S. J. Collins (NRC) to Holders of Licenses for Operating Pressurized Water Reactors, dated February 11, 2003, Issuance of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors (EA-03-009)

(c) Letter from Mr. G. Vanderheyden (CCNPP) to Document Control Desk (NRC), dated April 13, 2004, Response to Request for Additional Information Regarding Interim Inspection Requirements for Reactor Pressure Vessel Head (TAC No. MC1921)

(d) Letter from Mr. R. William Borchardt (NRC) to Holders of Licenses for Operating Pressurized Water Reactors, dated February 20, 2004, Issuance of First Revised Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors

(e) Electronic Mail from Mr. G. Vissing (NRC) to Mr. J. Kirkwood (CCNPP), dated April 21, 2004, RAIs for CCNPP Relaxation Request

By letter dated January 30, 2004, (Reference a), and supplemented by letter dated April 13, 2004, (Reference c), Calvert Cliffs Nuclear Power Plant, Inc. submitted a request for relaxation from the inspection requirements of Section IV.C(1)(b)(i) of Order EA-03-009 (Reference b). On February 20, 2004, the Nuclear Regulatory Commission issued First Revised Order EA-03-009 (Reference d). Calvert Cliffs Nuclear Power Plant completed the inspections required by Reference (d) on April 20, 2004. This letter supplements our relaxation request by providing the final results of our ultrasonic testing

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examination. This letter also affirms our desire for the staff to continue reviewing relaxation request number one, of Reference (a), in accordance with Section IV(F)(2) of the First Revised Order EA-03-009 (Reference d). We would like to withdraw relaxation request number two of Reference (a); volumetric inspection to the end of the head penetration nozzles was achieved using an axial probe, therefore the need for relaxation from the requirement to inspect to the end of the nozzle no longer exists.

The response to requests for additional information from the Nuclear Regulatory Commission (Reference e) are provided in Attachment (1).

The final reactor pressure vessel head control element drive mechanism penetrations' ultrasonic testing examination results, including specific nozzles for which relaxation is requested by Reference (a), are contained in Attachment (2).

Calvert Cliffs Nuclear Power Plant, Inc. requests approval of the relaxation requests as soon as reasonably achievable. Calvert Cliffs Unit 1 is currently scheduled to start plant heat-up May 4, 2004.

Should you have questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,

STATE OF MARYLAND :
: **TO WIT:**
COUNTY OF CALVERT :

I, George Vanderheyden, being duly sworn, state that I am Vice President - Calvert Cliffs Nuclear Power Plant, Inc. (CCNPP), and that I am duly authorized to execute and file this response on behalf of CCNPP. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other CCNPP employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

Subscribed and sworn before me, a Notary Public in and for the State of Maryland and County of St. Mary's, this 27th day of April, 2004.

WITNESS my Hand and Notarial Seal:

Notary Public

My Commission Expires:

March 25 2007
Date

GV/JKK/bjd

Attachments: (1) Response to Requests for Additional Information
(2) Reactor Pressure Vessel Head UT Examination Results

cc: J. Petro, Esquire
J. E. Silberg, Esquire
Director, Project Directorate I-1, NRC
G. S. Vissing, NRC
H. J. Miller, NRC
Resident Inspector, NRC
R. I. McLean, DNR

<u>ATTACHMENT (1)</u>

RESPONSE TO REQUESTS FOR ADDITIONAL INFORMATION

NRC Request 1:

CCNPP is requested to revise the relaxation request to identify the corresponding paragraphs of the First Revised Order EA-03-009 dated February 20, 2004 that CCNPP is requesting relaxation from.

CCNPP Response:

Calvert Cliffs Nuclear Power Plant (CCNPP) seeks relaxation from the inspection requirements of paragraph IV.C(5)(b) of the Issuance of First Revised NRC Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors, in accordance with paragraph IV.F(2) of same.

NRC Request 2:

In CCNPP response to NRC Request #4 to Relaxation 1, the licensee said performing a destructive examination by removing the thermal sleeves and using a rotating probe would present a hardship in terms of outage extension, radiological dose, industry safety risk, and expense. Please identify the specifics in more detail for each of these items identified.

CCNPP Response:

- Outage extension – To sever thermal sleeves, inspect with rotating Ultrasonic Technology (UT) and re-install guide funnels, is estimated to result in extending the outage 8.5 days using parallel operations.
- Radiological Dose – The dose estimate for the 17 nozzles for which relaxation is requested is 28.376 Rem using semi-remote welding to re-install the guide funnels for the 17 affected nozzles.
- Industrial Safety – Personnel would be exposed to manual cleaning (flapping) and machining, and welding set-ups and breakdowns under the head using scaffold platforms or ladders while wearing respirators and double anti-contamination clothing. This would increase the industrial safety risks due to heat stress, fatigue, and potential injury to personnel operating rotating equipment under the reactor head.
- Expense – Total additional cost to perform the plant modification that would allow access for a rotating probe is estimated to be $6,300,000: Direct Cost = $1,200,000; Indirect Cost (extended outage 8.5 days) = $5,100,000.

NRC Request 3:

In CCNPP relaxation request dated January 30, 2004, it was stated that the most limiting inspection area during the 2003 inspection was on the 42.5 degree nozzle and the reported stress values were based on finite element analysis. The licensee stated that the new stress values reported for the Spring 2004 outage are lower than those originally provided. The licensee stated that the new values were based on absolute elevation values which shows that the stresses computed by the FEA model were lower than the values reported in the 2003 inspection submittal.

Question (A):

Explain in detail how the absolute elevations of the top and bottom of the weld were obtained.

CCNPP Response:

For the purposes of reporting stresses from the Finite Element Analysis (FEA) model, the absolute elevations of the top and bottom of the weld are obtained from the vertical position in the model of the nodes at the nozzle outside diameter (OD)/weld interface. The bottom of the weld is the lowest node along this interface and the top of the weld is the highest node along this interface. Please refer to Figure 1 where the top and the bottom of the weld for the uphill weld are identified for the 43degree angle model.

Question (B):

Describe in detail [the difference in] the methodology between using the 2003 FEA method and the post-processing method for the Unit 1 Relaxation Request of 2004.

CCNPP Response:

There is no difference in the analysis methodology used to support the 2003 relaxation request and the 2004 relaxation request. The same analysis is used. The differences in stress values reported for the 2003 and 2004 requests are due to a difference in how the location of specific nodes in the model are identified with respect to the top of the J-groove weld; please refer to the response to question (D) for further explanation.

Question (C):

Were the stresses extrapolated from the 2003 FEA model and applied to the Unit 1 relaxation request? Provide justification that the method used for Unit 1 relaxation request is correct and more accurate than the FEA model used for Unit 2.

CCNPP Response:

Yes, the same FEA model and stress values used to support the 2003 relaxation request were used for the 2004 relaxation request. The justification for the 2004 methodology is best explained by an example; please refer to the response to question (D) for further explanation.

As indicated in the CCNPP Request for Additional Information dated April 4, 2003, (Reference 1), the FEA model was performed for a material having a yield strength of 42 ksi, which is equal to the yield strength of Calvert Cliffs Unit 1 control element drive mechanism material. The model is accurate for Unit 1 and conservative for Unit 2. This relaxation is requested for Unit 1.

Question (D):

Provide an example using this methodology. For example, for node 81701 at a 43 degree angle, the distance above the J-groove weld was 1.216 inches and the Hoop Stress calculated in the FEA was 33954 psi.

With the updated post-processing method, a nozzle at 43 degrees with a distance of 1.185 inches above the weld has a Hoop Stress calculated at 16.2 ksi. CCNPP needs to justify this huge discrepancy in stress values.

CCNPP Response:

The discrepancy in stress values between the 2003 relaxation request and the 2004 relaxation request is due to a conservative simplification of the model geometry used in 2003 to calculate stresses above the top of the weld at the uphill side. Figure 1 is a plot of the operating hoop stresses at the uphill side of the 43 degree nozzle. The nodes at the top and bottom of the weld are identified, as are nodes of interest on the inside diameter (ID) side of the nozzle.

ATTACHMENT (1)

RESPONSE TO REQUESTS FOR ADDITIONAL INFORMATION

In our April 4, 2003 response to a Request for Additional Information (Reference 1) we provided a tabular listing of stresses. A portion of that table is reproduced below.

Residual Plus Operating Stresses for Penetration Nozzle at 43 Degree Angle							
Nozzle ID				Nozzle OD			
Node	Inches above J-groove	Hoop Stress (psi)	Axial Stress (psi)	Node	Inches above J-groove	Hoop Stress (psi)	Axial Stress (psi)
81401	**0**	41891	-1095.8	81405	**0**	56042	17699
81701	1.216	33954	13208	81705	1.079	-12184	-11826

As shown in the table, nodes 81405 (on the OD) and 81401 (on the ID) were both assumed to be at the same absolute elevation (shown in bold). In fact, node 81405 is at the elevation of the weld root, but node 81401 is below the elevation of the weld root as shown in Figure 1 (by the bold line). In 2003 we reported the stresses on the nozzle ID surface at various distances with respect to 81401 instead of with respect to 81405. The assumption that 81401 and 81405 were at the same elevation simplified the determination of stresses, but provided values that were conservatively high.

The stress at node 81701, which is 1.216 inches above node 81401, is 33,954 psi. The stress at this node in 2004 is that same as it was in 2003. As shown in Figure 1, this stress value agrees with the stress contours of the hoop stress plot.

In 2004, it was decided to report ID stresses in reference to the location of the top of the weld. As shown in Figure 1, node 81701 is actually only 0.745 inches above the top of the J-groove weld.

The actual nozzle ID stress at an elevation of 1.185 inches above the top of the weld for the 43 degree nozzle is 16.2 ksi. As shown in Figure 2, this stress value agrees with the stress contours of the hoop stress plot.

In conclusion, the differences between the stress values reported in the 2003 and 2004 relaxation requests was due to the different ways the ID nodes were indexed to the J-groove weld root elevation. In 2003 the stresses were conservatively indexed to the ID node along the same mesh line that intersected the weld root. In 2004 the stresses were indexed to the actual weld root elevation.

2003 Determination that Stress equals 33,954 psi 1.216 inches above the J-groove Weld Root (at Node 81701) is Referenced to Node 81401 Elevation

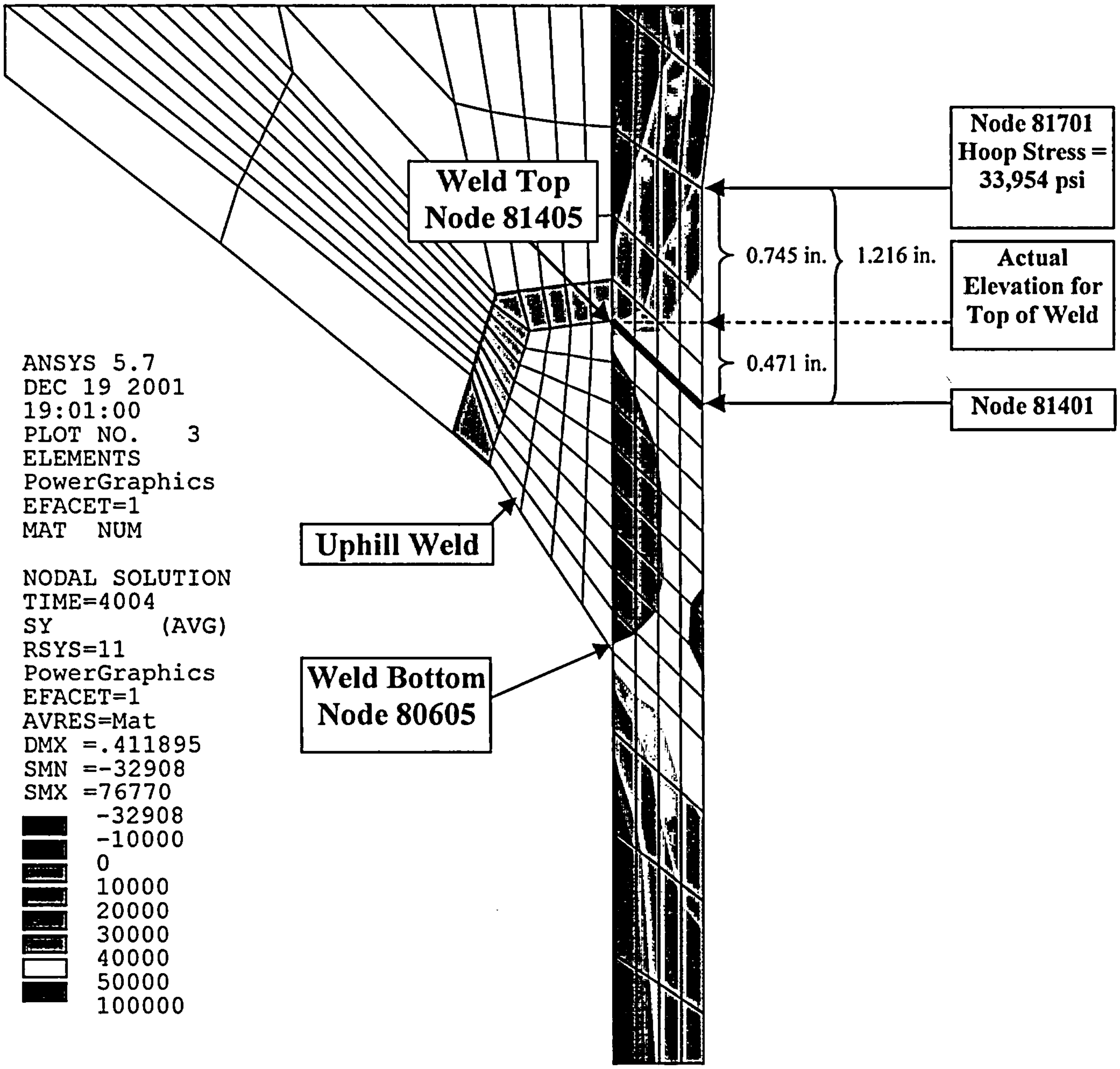

Figure 1: Illustration of Stress Analysis Mesh Indexed to Node 81401

2004 Determination that Stress equals 16.2 ksi 1.185 Inches above the J-groove Weld Root is Referenced to Node 81405 Elevation (Actual Weld Root)

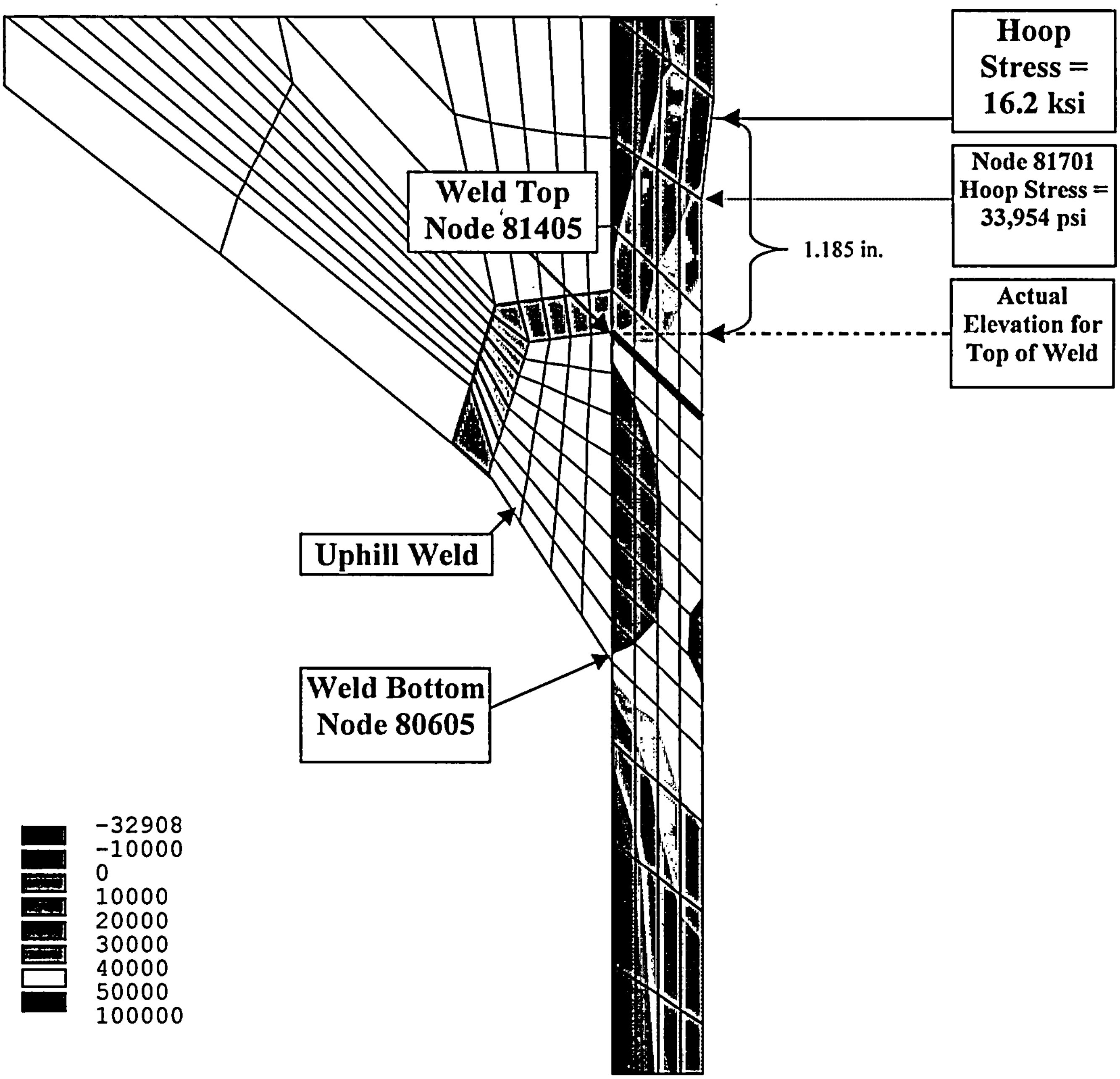

Figure 2: Illustration of Stress Analysis Mesh Indexed to the Root of the J-groove Weld

NRC Request 4:

For Table identifying UT coverage in RVHP nozzles for Calvert Cliffs Unit 1 outage 2004, in addition to nozzle angles, please provide the stress levels for the 17 nozzles that did not have complete coverage at both the uphill and downhill locations

CCNPP Response:

Please refer to Attachment 2 to this letter.

NRC Request 5:

For the 17 nozzles that did not have complete coverage as required by the First Revised Order, provide a column identifying the distance of UT coverage in the downhill side above the root of the J-groove weld.

CCNPP Response:

Please refer to Attachment 2 to this letter.

NRC Request 6:

In response to NRC question 1 of RAI's for Relaxation Request 1 dated April 13, 2004, CCNPP identified that the crack growth methodology used was consistent with MRP-55. The NRC has not approved MRP-55 to date and will therefore, the following statement will be included in the final SE:

> *If the NRC staff finds that the crack-growth formula in industry report MRP-55 is unacceptable, the licensee shall revise its analysis that justifies relaxation of the First Revised Order dated February 20, 2004, within 30 days after the NRC informs the licensee of an NRC-approved crack growth formula. If the licensee's revised analysis shows that the crack growth acceptance criteria are exceeded prior to the end of the current operating cycle, this relaxation is rescinded and the licensee shall, within 72 hours, submit to the NRC written justification for continued operation. If the revised analysis shows that the crack growth acceptance criteria are exceeded during the subsequent operating cycle, the licensee shall, within 30 days, submit the revised analysis for NRC review. If the revised analysis shows that the crack growth acceptance criteria are not exceeded during either the current operating cycle or the subsequent operating cycle, the licensee shall, within 30 days submit a letter to the NRC confirming that its analyses has been revised. Any future crack-growth analyses performed for this and future cycles for RPV head penetrations must be based on an acceptable crack growth rate formula.*

CCNPP Response:

Calvert Cliffs Nuclear Power Plant concurs with the above statement.

REFERENCE:

1. Letter from Mr. P. E. Katz (CCNPP) to Document Control Desk (NRC), dated April 4, 2003, Response to Request for Additional Information Regarding Interim Inspection Requirements for Reactor Pressure Vessel Head (TAC Nos. MB7752 and MB7753

ATTACHMENT (2)

REACTOR PRESSURE VESSEL HEAD UT EXAMINATION RESULTS

Calvert Cliffs Nuclear Power Plant, Inc.
April 27, 2004

Calvert Cliffs Unit 1 (Spring 2004)									
Extent of UT Coverage in RVHP Nozzle Material									
Pen #	Nozzle Angle	Minimum Axial Distance Achieved Above Uphill Weld Root (in)	Stress Level Above the Uphill Weld Root at the Axial Distance for Nozzles Without Complete Coverage (ksi)	Minimum Axial Distance Achieved Above Downhill Weld Root for Nozzles with Coverage <2" above Uphill Weld Root (in)	Stress Level Above the Downhill Weld Root at the Axial Distance for Nozzles Without Complete Coverage (ksi)	Circumferential Coverage Achieved (Degrees)	Scan Type (Blade Probe / Rotating)	Examined to End of Nozzle	Leak Path Assessment Possible? (Yes / No)
CEDM 1	0.0	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 2	11.1	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 3	11.1	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 4	11.1	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 5	11.1	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 6	12.0	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 7	12.0	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 8	12.0	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 9	12.0	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 10	22.6	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 11	22.6	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 12	22.6	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 13	22.6	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 14	24.1	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 15	24.1	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 16	24.1	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 17	24.1	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 18	25.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 19	25.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 20	25.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 21	25.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 22	25.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 23	25.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 24	25.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 25	25.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 26	29.3	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 27	29.3	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes

Calvert Cliffs Unit 1 (Spring 2004)									
Extent of UT Coverage in RVHP Nozzle Material									
Pen #	Nozzle Angle	Minimum Axial Distance Achieved Above Uphill Weld Root (in)	Stress Level Above the Uphill Weld Root at the Axial Distance for Nozzles Without Complete Coverage (ksi)	Minimum Axial Distance Achieved Above Downhill Weld Root for Nozzles with Coverage <2" above Uphill Weld Root (in)	Stress Level Above the Downhill Weld Root at the Axial Distance for Nozzles Without Complete Coverage (ksi)	Circumferential Coverage Achieved (Degrees)	Scan Type (Blade Probe / Rotating)	Examined to End of Nozzle	Leak Path Assessment Possible? (Yes / No)
CEDM 28	29.3	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 29	29.3	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 30	29.3	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 31	29.3	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 32	29.3	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 33	29.3	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 34	34.9	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 35	34.9	1.880	ID: 7.2, OD: -3.5	4.760	ID: 10.1, OD: 3.2	360	Ax Blade	Yes	Yes
CEDM 36	34.9	1.960	ID: 6.7, OD: -2.5	4.400	ID: 9.9, OD: 3.5	360	Ax Blade	Yes	Yes
CEDM 37	34.9	1.970	ID: 6.6, OD: -2.4	5.040	ID: 10.3, OD: 3.0	360	Ax Blade	Yes	Yes
CEDM 38	38.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 39	38.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 40	38.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 41	38.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 42	38.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 43	38.5	1.900	ID: 10.3, OD: -4.5	5.130	ID: 14.3, OD: 2.0	360	Ax Blade	Yes	Yes
CEDM 44	38.5	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 45	38.5	1.950	ID: 10.2, OD: -4.1	5.070	ID: 13.8, OD: 2.1	360	Ax Blade	Yes	Yes
CEDM 46	41.8	1.862	ID: 10.3, OD: -4.9	5.240	ID: 15.3, OD: 1.8	360	Ax Blade	Yes	Yes
CEDM 47	41.8	1.960	ID: 10.0, OD: -4.0	5.610	ID: 16.1, OD: 1.4	360	Ax Blade	Yes	Yes
CEDM 48	41.8	>2	N/A	N/A	N/A	360	Ax Blade	Yes	Yes
CEDM 49	41.8	1.956	ID: 10.1, OD: -4.0	5.450	ID: 16.4, OD: 1.6	360	Ax Blade	Yes	Yes

Calvert Cliffs Unit 1 (Spring 2004)									
Extent of UT Coverage in RVHP Nozzle Material									
Pen #	Nozzle Angle	Minimum Axial Distance Achieved Above Uphill Weld Root (in)	Stress Level Above the Uphill Weld Root at the Axial Distance for Nozzles Without Complete Coverage (ksi)	Minimum Axial Distance Achieved Above Downhill Weld Root for Nozzles with Coverage <2" above Uphill Weld Root (in)	Stress Level Above the Downhill Weld Root at the Axial Distance for Nozzles Without Complete Coverage (ksi)	Circumferential Coverage Achieved (Degrees)	Scan Type (Blade Probe / Rotating)	Examined to End of Nozzle	Leak Path Assessment Possible? (Yes / No)
CEDM 50	41.8	**1.950**	ID: 10.2, OD: -4.1	**5.390**	ID: 16.4, OD: 1.6	360	Ax Blade	**Yes**	Yes
CEDM 51	41.8	**>2**	N/A	N/A	N/A	360	Ax Blade	**Yes**	Yes
CEDM 52	41.8	**1.950**	ID: 10.2, OD: -4.1	**5.630**	ID: 16.1, OD: 1.3	360	Ax Blade	**Yes**	Yes
CEDM 53	41.8	**1.730**	ID: 10.6, OD: -6.1	**5.490**	ID: 16.3, OD: 1.5	360	Ax Blade	**Yes**	Yes
CEDM 54	42.5	**2.000**	N/A	N/A	N/A	360	Ax Blade	**Yes**	Yes
CEDM 55	42.5	**1.700**	ID: 10.7, OD: -6.4	**5.470**	ID: 16.3, OD: 1.5	360	Ax Blade	**Yes**	Yes
CEDM 56	42.5	**1.860**	ID: 10.3, OD: -4.9	**5.340**	ID: 16.1, OD: 1.7	360	Ax Blade	**Yes**	Yes
CEDM 57	42.5	**>2**	N/A	N/A	N/A	360	Ax Blade	**Yes**	Yes
CEDM 58	42.5	**2.000**	N/A	N/A	N/A	360	Ax Blade	**Yes**	Yes
CEDM 59	42.5	**1.860**	ID: 10.3, OD: -4.9	**5.340**	ID: 16.1, OD: 1.7	360	Ax Blade	**Yes**	Yes
CEDM 60	42.5	**1.670**	ID: 10.7, OD: -6.7	**5.320**	ID: 16.0, OD: 1.7	360	Ax Blade	**Yes**	Yes
CEDM 61	42.5	**1.850**	ID: 10.4, OD: -5.0	**5.450**	ID: 16.4, OD: 1.6	360	Ax Blade	**Yes**	Yes
CEDM 62	42.5	**>2**	N/A	N/A	N/A	360	Ax Blade	**Yes**	Yes
CEDM 63	42.5	**>2**	N/A	N/A	N/A	360	Ax Blade	**Yes**	Yes
CEDM 64	42.5	**>2**	N/A	N/A	N/A	360	Ax Blade	**Yes**	Yes
CEDM 65	42.5	**1.910**	ID: 10.2, OD: -4.5	**5.410**	ID: 16.4, OD: 1.6	360	Ax Blade	**Yes**	Yes
ICI 66	54.8	**>2**	N/A	N/A	N/A	360	Rotating	**Yes**	Yes
ICI 67	54.8	**>2**	N/A	N/A	N/A	360	Rotating	**Yes**	Yes
ICI 68	54.8	**>2**	N/A	N/A	N/A	360	Rotating	**Yes**	Yes
ICI 69	54.8	**>2**	N/A	N/A	N/A	360	Rotating	**Yes**	Yes
ICI 70	54.8	**>2**	N/A	N/A	N/A	360	Rotating	**Yes**	Yes

Calvert Cliffs Unit 1 (Spring 2004)									
Extent of UT Coverage in RVHP Nozzle Material									
Pen #	Nozzle Angle	Minimum Axial Distance Achieved Above Uphill Weld Root (in)	Stress Level Above the Uphill Weld Root at the Axial Distance for Nozzles Without Complete Coverage (ksi)	Minimum Axial Distance Achieved Above Downhill Weld Root for Nozzles with Coverage <2" above Uphill Weld Root (in)	Stress Level Above the Downhill Weld Root at the Axial Distance for Nozzles Without Complete Coverage (ksi)	Circumferential Coverage Achieved (Degrees)	Scan Type (Blade Probe / Rotating)	Examined to End of Nozzle	Leak Path Assessment Possible? (Yes / No)
ICI 71	54.8	>2	N/A	N/A	N/A	360	Rotating	Yes	Yes
ICI 72	54.8	>2	N/A	N/A	N/A	360	Rotating	Yes	Yes
ICI 73	54.8	>2	N/A	N/A	N/A	360	Rotating	Yes	Yes
Vent-Line	0-11	>2	N/A	N/A	N/A	360	Rotating/ECT	Yes	N/A