Dominion Nuclear Connecticut, Inc.
Millstone Power Station
Rope Ferry Road
Waterford, CT 06385

Dominion

NOV 5 2003

Docket No. 50-336
B19008

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Millstone Power Station, Unit No. 2
Response to Request for Additional Information on RR-89-48 for the
Nozzle Inspection Ultrasonic Test Coverage Requirements in Order EA-03-009

On February 11, 2003,[1] the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-03-009 for interim inspection requirements for reactor pressure vessel (RPV) heads at pressurized water reactor facilities. The Order requires specific inspection of the RPV head and associated penetration nozzles. On October 3, 2003,[2] pursuant to the procedure specified in Section IV.F of the Order, Dominion Nuclear Connecticut, Inc. (DNC) requested relaxation from requirements of the Order regarding the ultrasonic test examination (UT) coverage for the control element drive mechanism (CEDM) penetration nozzles (Request Number RR-89-48). Enclosures 1 and 2 of this letter supplement DNC's request RR-89-48 by providing additional information regarding proprietary[3] and non-proprietary[4] versions of a supporting structural integrity calculation.

On October 10, 2003,[5] DNC provided the non-proprietary and proprietary versions of a supporting structural integrity evaluation report for the DNC request RR-89-48. In a facsimile dated October 22, 2003, the NRC transmitted a draft of a request for additional information (RAI) regarding this proprietary report. A teleconference was subsequently held on October 23, 2003, to discuss this information with the NRC. Enclosures 1 and 2 of this letter provide a response to the NRC questions in non-proprietary and proprietary formats. Enclosure 2 includes a Westinghouse authorization letter CAW-03-1731, and the accompanying affidavit, Proprietary Information Notice and Copyright Notice.

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(1) NRC Order EA-03-009, "Issuance of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," February 11, 2003, (Accession No. ML030380470).

(2) DNC letter, "Millstone Power Station, Unit No. 2, Order EA-03-009 Relaxation Request Number RR-89-48 for Nozzle Inspection Ultrasonic Test Coverage Requirements," October 3, 2003.

(3) Westinghouse Electric Company, "RAI Responses to Millstone Unit 2 Relaxation Request," November 3, 2003, Millstone Unit No. 2 (Proprietary), WCAP-15813-P, Rev. 1.

(4) Westinghouse Electric Company, "RAI Responses to Millstone Unit 2 Relaxation Request," November 3, 2003, Millstone Unit No. 2 (Non-proprietary), WCAP-15813-NP, Rev. 0.

(5) DNC Letter, "Millstone Power Station, Unit No. 2, Supplement to Request Number RR-89-48 for Relaxation From Nozzle Inspection Ultrasonic Test Coverage Requirements in Order EA-03-009," October 10, 2003, (Accession No. ML032930097).

A101

As the Enclosure contains information proprietary to Westinghouse Electric Company, it is supported by an affidavit signed by Westinghouse, the owner of the information. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of Section 2.790 of the Commission's regulations.

Accordingly, it is respectfully requested that the information that is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR 2.790 of the Commission's regulations.

Correspondence with respect to the copyright or the proprietary aspects of the items listed above or the supporting Westinghouse affidavit should reference CAW-03-1731 and should be addressed to H. A. Sepp, Manager of Regulatory Compliance and Plant Licensing, Westinghouse Electric Company, P.O. Box 355, Pittsburgh, Pennsylvania 15230-0355.

There are no regulatory commitments contained within this letter.

If you should have any questions regarding this submittal, please contact Mr. David W. Dodson at (860) 447-1791, extension 2346.

Very truly yours,

DOMINION NUCLEAR CONNECTICUT, INC.

J. Alan Price
Site Vice President - Millstone

Sworn to and subscribed before me

this 5 day of November, 2003

Diane M. Phillipo
Notary Public

My Commission expires DIANE M. PHILLIPO NOTARY PUBLIC MY COMMISSION EXPIRES 12/31/2005

Enclosures (2)

cc: See Next Page

cc: H. J. Miller, Region I Administrator (w/o Enclosure)
R. B. Ennis, NRC Senior Project Manager, Millstone Unit No. 2
Millstone Senior Resident Inspector (w/o Enclosure)

The Director, Office of Nuclear Reactor Regulation (w/o Enclosure)
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docket No. 50-336
B19008

Enclosure 1

Millstone Power Station, Unit No. 2

Westinghouse Non-Proprietary Class 3
RAI Responses to Millstone Unit 2 Relaxation Request
WCAP-15813-NP, Revision 0

RAI Responses to Millstone Unit 2 Relaxation Request
WCAP-15813-NP, Rev. 0

NOVEMBER 3, 2003

Westinghouse Electric Company LLC
P.O. Box 355
Pittsburgh, PA 15230-0355

RAI Responses to Millstone Unit 2 Relaxation Request

Question 1-1

Provide and justify the use of the assumed initial crack geometries (length, depth, surface, through-wall, etc.) for the four CEDM nozzle cases. Also, provide the identification number of the WCAP figures on which your calculated years of operating time for the four CEDM nozzle cases were based.

Response to Question 1-1

The assumed initial crack geometry postulated below the weld is a through-wall flaw with its upper extremity located at 0.5" below the weld. The initial through-wall flaw length was selected to ensure that the resulting stress intensity factor is 15 $MPa\text{-}m^{1/2}$ which exceeded the crack tip stress intensity factor threshold of 9 $MPa\text{-}m^{1/2}$.

Figures 6-12, 6-13, 6-15 and 6-17 in WCAP-15813-P were used in the calculated years of operating time for the four CEDM nozzle cases.

Question 2-1

Provide the stress-strain curves for penetration tube, J-groove weld and vessel head used in your finite element method (FEM) stress analysis; justify the applicability of these stress-strain curves to your CRDM nozzle assembly. Test data should be provided to justify the use of either an elastic-perfectly plastic model or a strain hardening model for the Alloy 600 nozzle material in your FEM analysis.

Response to Question 2-1

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Question 2-2

You mentioned in Section 3.2 that for the crack growth calculation, a best estimate is needed and no additional margins are necessary. Your statement is true for fatigue crack growth calculations because the crack growth time (e.g., 30 years and beyond) is long enough to balance out slower and faster growths at various periods of the component's life. For PWSCC, a typical crack growth time of concern is 1.5 year, and a crack may grow much faster than the best-estimate rate during the entire short period. How do you justify that no additional margins are necessary when using best-estimate PWSCC rate?

Response to Question 2-2

The use of best estimate crack growth calculation is consistent with the philosophy of Section XI. In addition, the calculation is based on the best estimate crack growth rate (MRP-55 Rev. 1) provided in the flaw evaluation guidelines which have already been endorsed by the NRC in the letter from R. Barrett to A. Marion dated April 11, 2003. Since the material for the CRDM penetration nozzle was produced by Huntington Alloys, the MRP-55 Rev. 1 crack growth curve represents the upper bound for the PWSCC crack growth rate for these materials.

Question 2-3

You mentioned in Section 5-3 that the vessel to penetration nozzle weld was simulated with two weld passes. Please provide the actual number of weld passes for fabricating the vessel to penetration nozzle weld and justify quantitatively that using two weld passes in your FEM modeling would adequately represent actual residual stresses.

Response to Question 2-3

The actual number of weld passes for fabricating the vessel to penetration nozzle weld is between 30 to 40 weld passes. The methodology of using two weld passes in the FEM modeling have been benchmarked with actual ovality measurements in Report EPRI TR-103696 dated July 1994. Recent study which compares the FEM results for a center penetration with two weld passes versus multiple weld passes indicated that the results are in good agreement. This information was provided in a presentation by Dominion Engineering to the NRC staff in September 2002. The presentation is attached.

Question 2-4

You mentioned in Section 6.2 that the stress intensity factor expression of Raju and Newamn was used for surface flaws. The staff has two concerns:

(A) The specific Raju and Newman expression cited by you is good for cylinders with R/t ratio greater than 4. In the present application, the R/t ratios are 2.4, 4.93 and 2.41 for the CEDM, ICI and the head vent nozzles. Applying the Raju and Newman expression to CEDM and the head vent nozzles will provide non-conservative stress intensity factors. Provide an error analysis.

(B) The Raju and Newman expression considers stress variation in the thickness direction only. In the current application, the surface crack tip is of the primary concern, and, therefore, stress variation in the length direction should be considered. Provide an error analysis.

Response to Question 2-4

Based on the telephone conference discussion with the NRC staff on 10/23/2003, it was decided that from the relaxation request point of view, no response is required for this question.

Question 2-5

Provide an error analysis on using the expression for a through-wall crack in a plate (infinite medium ?) in this application for an axial through-wall flaw in the penetrations.

Response to Question 2-5

To address the uninspected regions of the head penetrations, a series of crack growth calculations were completed for postulated through-wall flaws in the penetrations, growing up toward the attachment welds. The expression used for the stress intensity factor was that for a through-wall flaw in a plate, under a stress loading. Conservatism was introduced by assuming that the high stress found only at the upper extremity of the through-wall crack also applies to the entire crack face as the crack propagated. In reality, the only stresses acting on the crack are the residual stresses from the welding operation; since the region of interest is below the weld, it is not part of the pressure boundary. In this situation, as the crack propagates, the stresses on the crack face are relieved completely. Therefore, the use of a through-wall crack in a plate expression produces a very conservative estimate of crack propagation below the weld.

Question 2-6

Confirm that in addition to the hoop stress, you have also considered hydrostatic pressure on flaw faces in your fracture mechanics analysis.

Response to Question 2-6

Hydrostatic pressure on the flaw faces has been considered in the fracture mechanics analyses.

Question 2-7

In the discussion of the circumferential crack propagation for ICI nozzles under Section 6.4, you mentioned that the time period for a surface flaw to become a through-wall flaw was conservatively ignored. Does this approach also apply to CEDM nozzles?

Response to Question 2-7

Yes, this also applies to the CEDM nozzles.

a,c,e

[ ]

Figure 1

Alloy 600 Nozzle Stress vs. Strain

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[ ]

Figure 2

Alloy 182 Weld and Butter Stress vs. Strain

a,c,e

Figure 3

Carbon Steel Head Stress vs. Strain

a,c,e

Figure 4

Stainless Steel Cladding Stress vs. Strain

a,c,e

Figure 5

Inconel 182 High-Temperature Tensile Properties from Reference (3)

Welding Residual Stress Models
Material Properties and Results Comparison

Prepared for Meeting With NRC Technical Staff
September 17, 2002

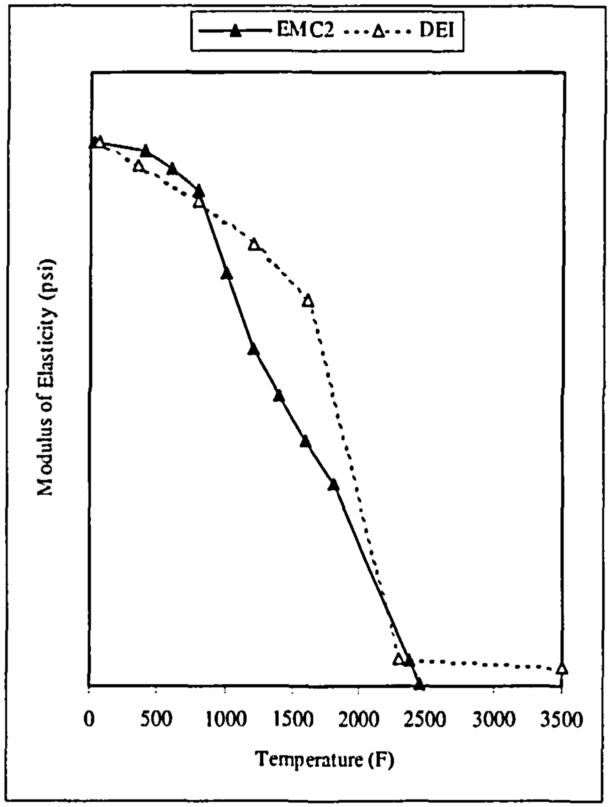
Dominion Engineering, Inc.
S. Hunt
D. Gross
J. Broussard

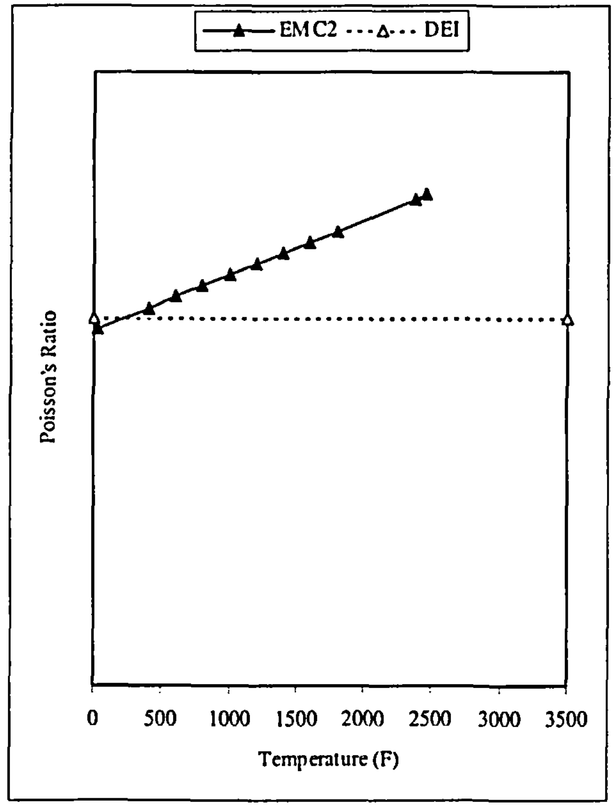
Contents

- Comparison of DEI and EMC^2 Material Properties
- Weld Stress-Strain Curves
- Conclusions Regarding Material Properties
- Models to Compare DEI and EMC^2 Results
- Comparison of Results
- Conclusions Regarding Stresses

Comparison of DEI and EMC² Material Properties

Alloy 600 - Modulus and Poisson's Ratio

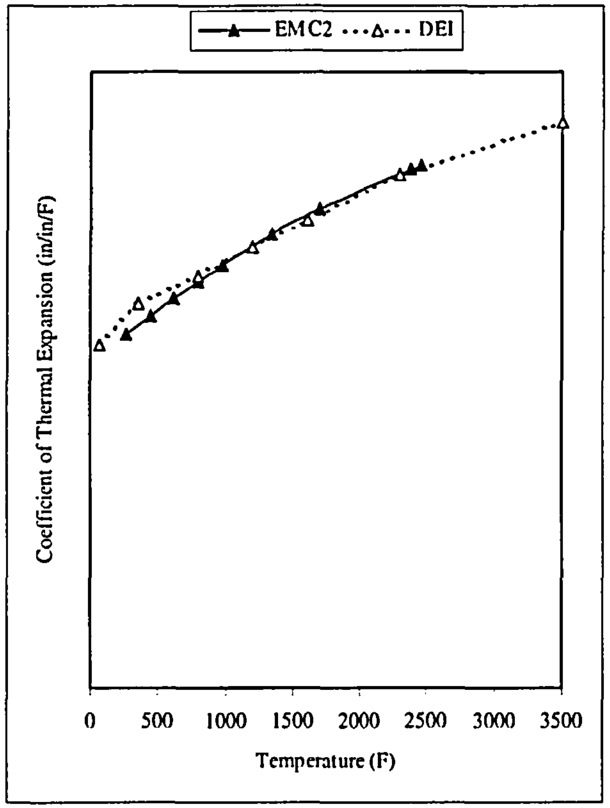


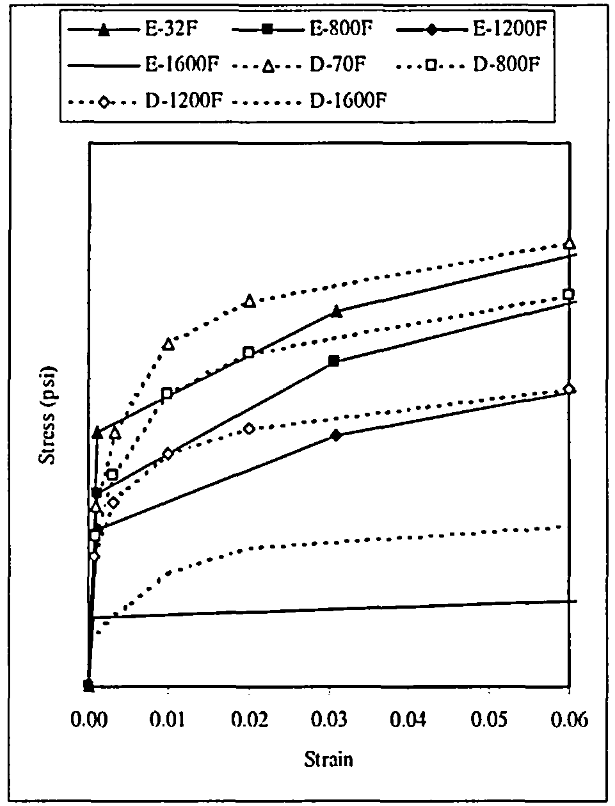


Welding Residual Stress Model – DEI/EMC² Comparison 3

Comparison of DEI and EMC² Material Properties

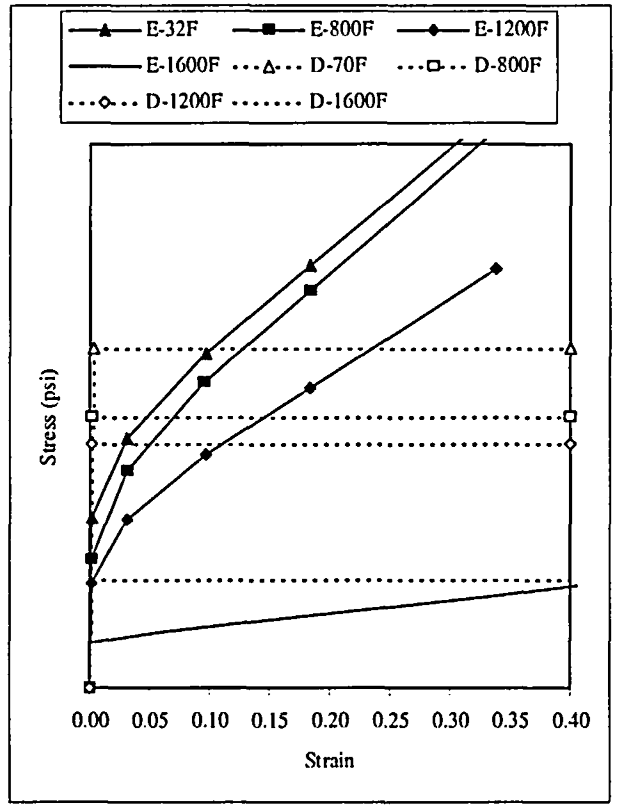
Alloy 600 - Thermal Expansion and Stress-Strain





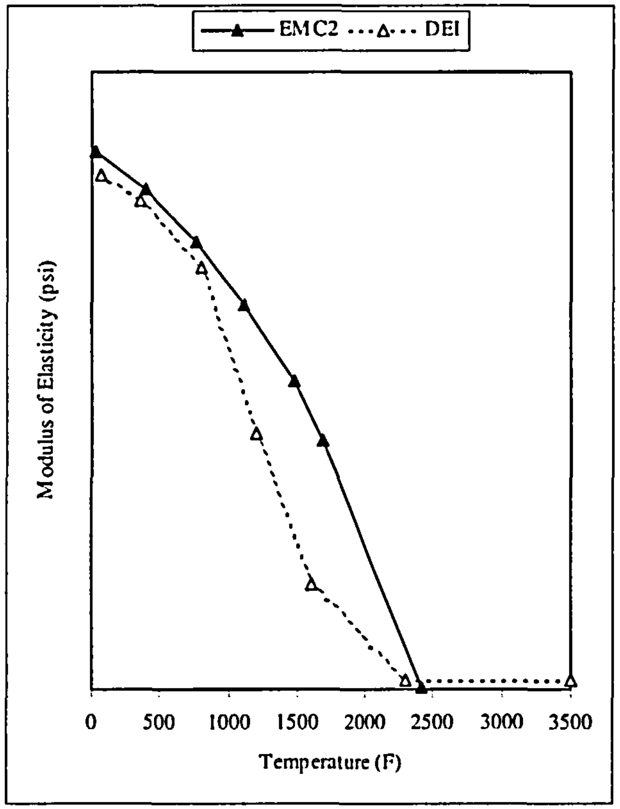
Comparison of DEI and EMC^2 Material Properties
Alloy 182 Weld

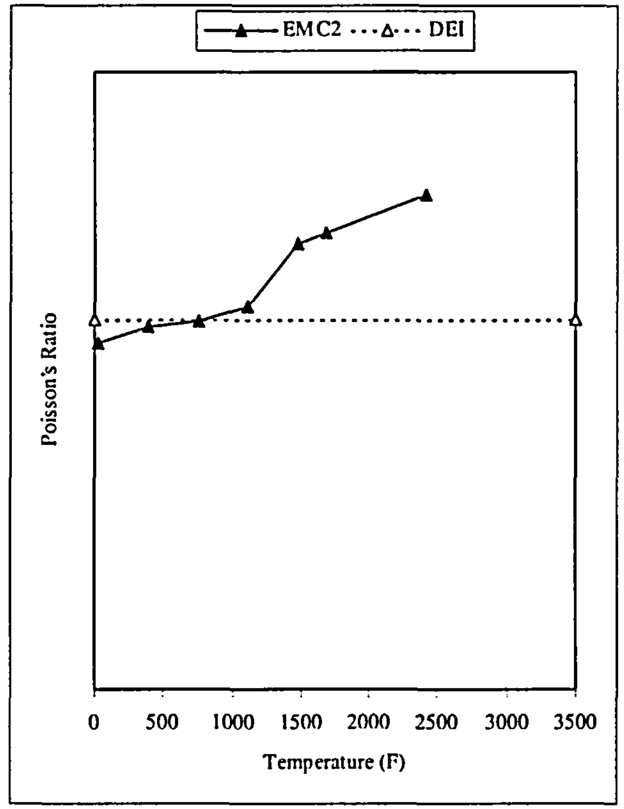
- EMC^2 has identical properties for Alloy 600 base metal and Alloy 182 welds
- DEI has two differences between the base metal and weld metal
  - Small difference in coefficient of thermal expansion
  - Significant difference in modeling stress-strain properties (See Slides 10-13 for discussion)



Comparison of DEI and EMC^2 Material Properties

Low Alloy Steel – Modulus and Poisson's Ratio

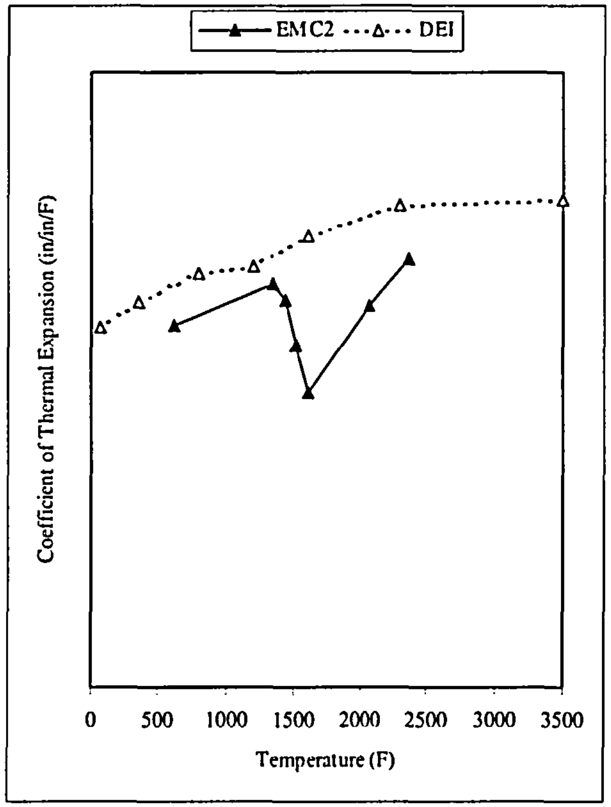


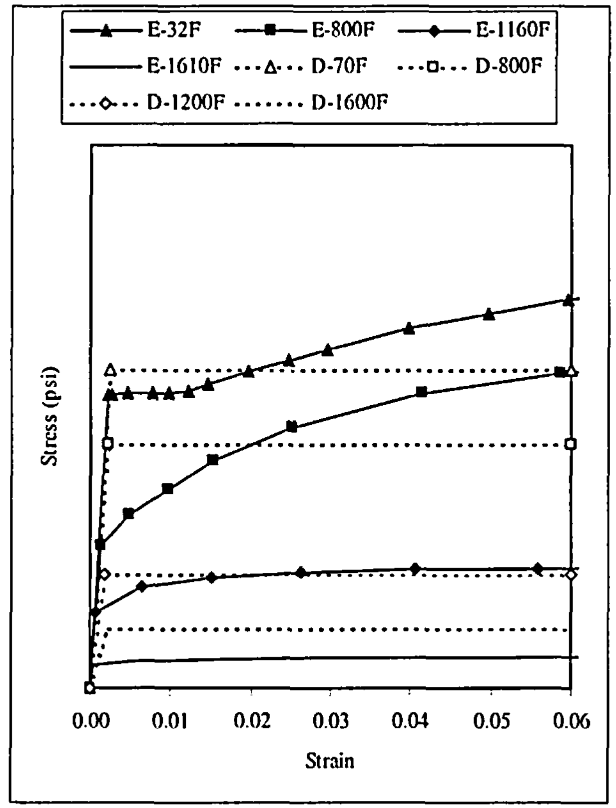


Welding Residual Stress Model – DEI/EMC^2 Comparison 6

Comparison of DEI and EMC² Material Properties

Low Alloy Steel – Thermal Expansion and Stress-Strain

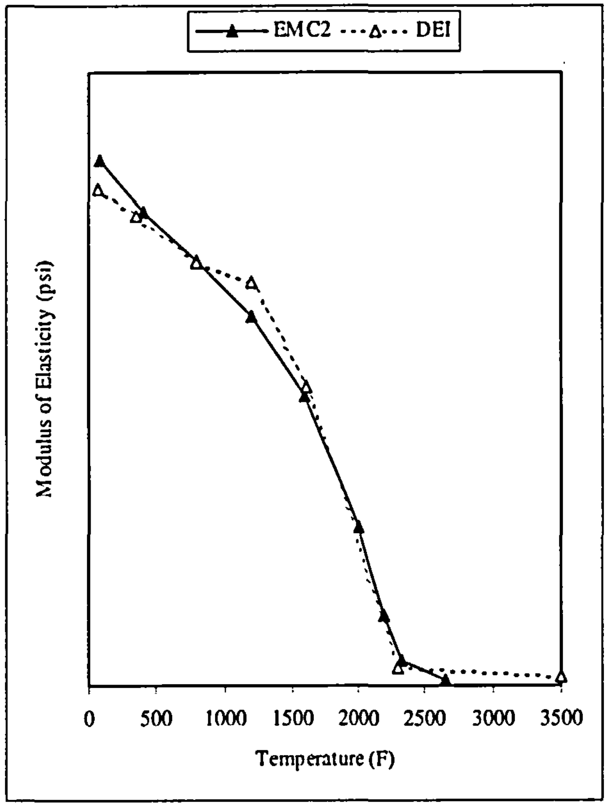


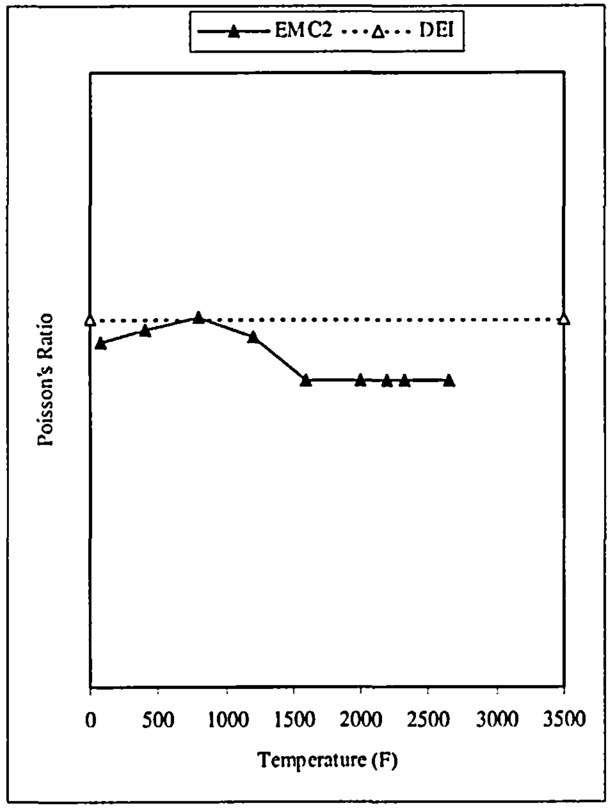


Welding Residual Stress Model – DEI/EMC² Comparison 7

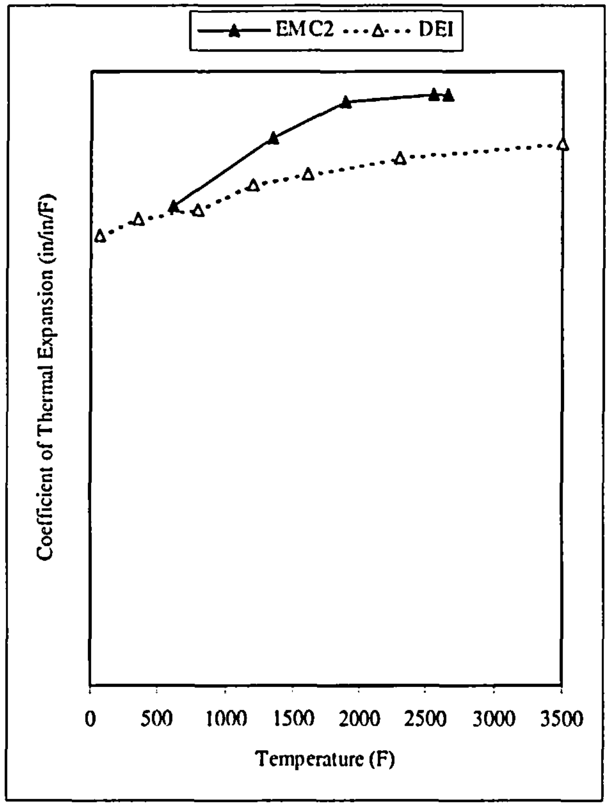
Comparison of DEI and EMC^2 Material Properties

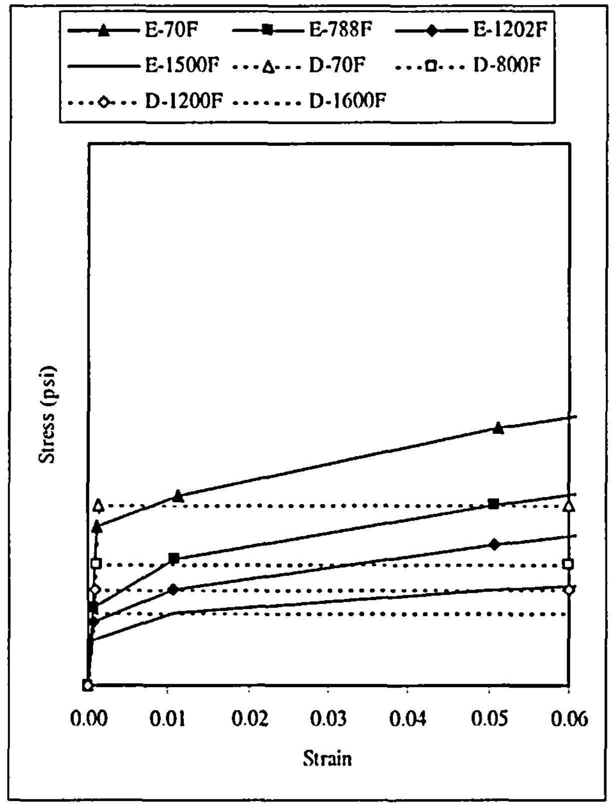
SS Clad – Modulus and Poisson's Ratio





Comparison of DEI and EMC^2 Material Properties
SS Clad – Thermal Expansion and Stress-Strain



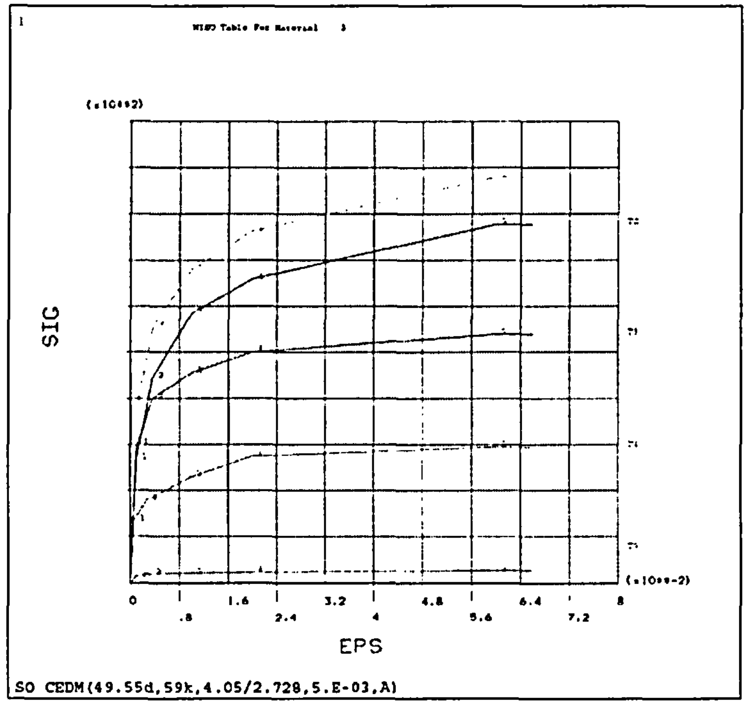


Weld Stress-Strain Curves
Early 1990's Model

- DEI's CRDM welding residual stress model was originally designed in the early 1990's for the purpose of simulating stresses on the nozzle ID surface

- Model made use of multilinear isotropic work hardening curves with similar shapes to those for Alloy 600 base material

- Yield strength as a function of temperature was derived from 0.2% offset yield data in ASME Code



Weld Stress-Strain Curves
Limitations of Original Model

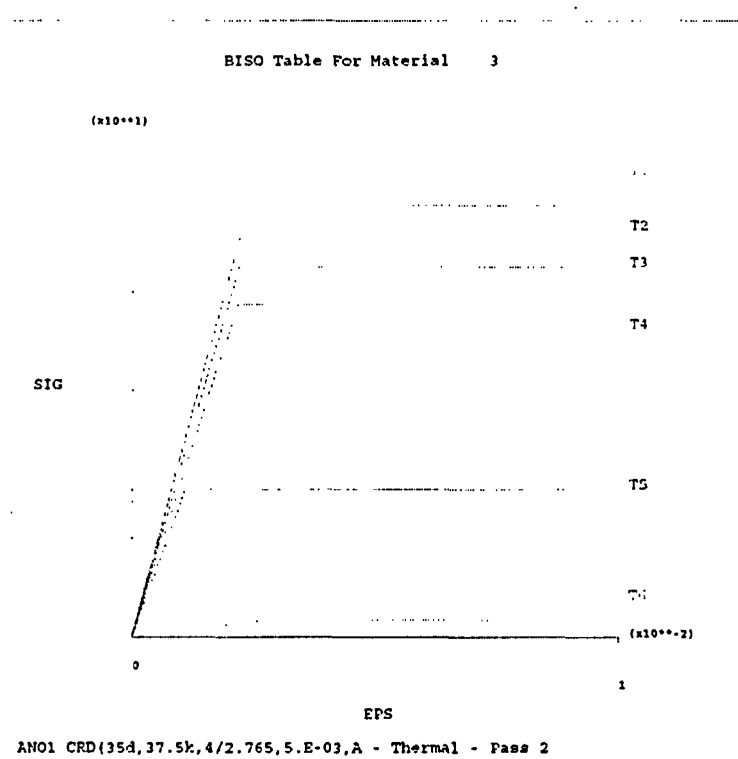
- ANSYS predicted unrealistically high residual stresses in the weld metal (greater than 100 ksi)
  - The high weld stresses did not have a significant effect on nozzle ID stress levels, but were not representative of actual weld stresses
- High weld stresses were traced to work hardening behavior as the weld material solidifies from ≈3500 F to 1600 F
- ANSYS retains the plastic strain calculated at high temperatures, leading to high yield stress levels at lower temperatures
- This behavior is a limitation of the software, and does not represent a realistic model of the material behavior

Weld Stress-Strain Curves
Revised Model (2001 and Later)

- Starting in early 2001, models were used to predict stresses in the weld and on the nozzle OD surface
- The issue of high-temperature work hardening was addressed by assuming elastic perfectly-plastic work hardening for the weld material
- Alloy 182 data published by Huntington Alloys supports the conclusion that the flow stress is a good approximation to the yield stress of the as-deposited weld material

Weld Stress-Strain Curves
Revised Model (2001 and Later)

- Current DEI models use elastic-perfectly plastic stress-strain curves for the Alloy 182 weld metal and buttering to avoid strain hardening issues
- Since stresses in the low-alloy steel vessel head are below yield this material is also modeled using elastic-perfectly plastic properties without compromising accuracy



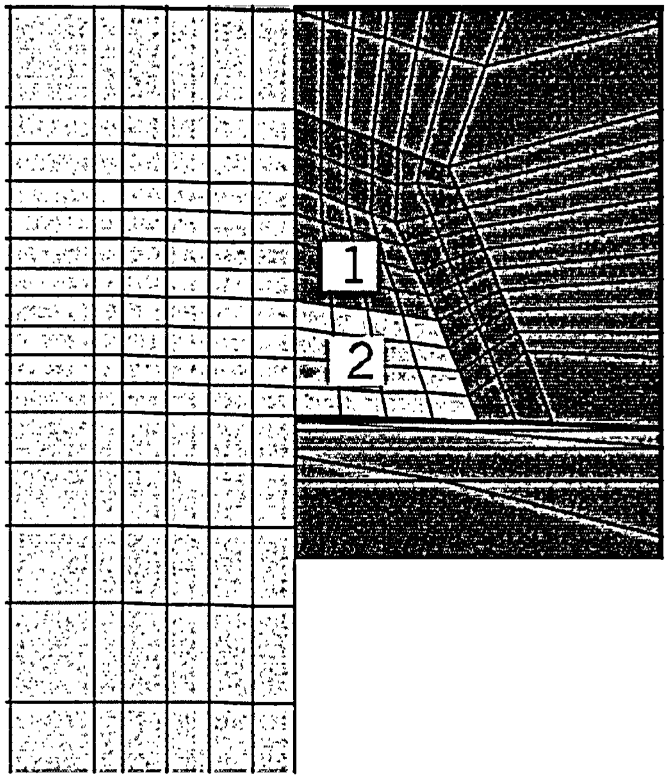
Welding Residual Stress Model – DEI/EMC² Comparison 13

Conclusions Regarding Material Properties

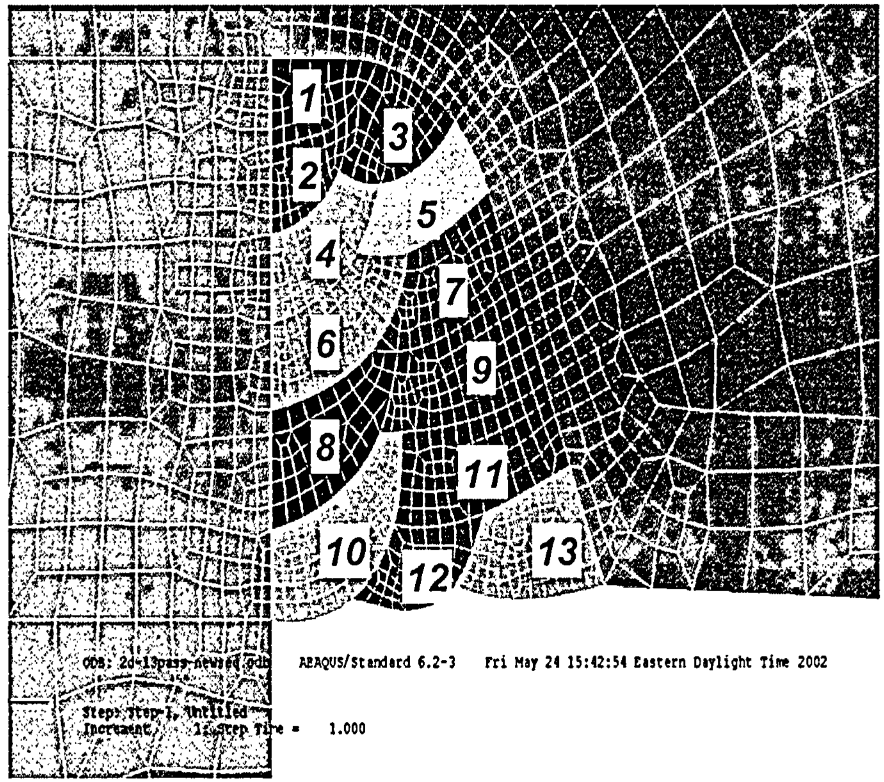
- Minor differences in modulus and coefficient of thermal expansion
  - DEI coefficient of thermal expansion for low-alloy steel was extrapolated for temperatures above ≈1200 F (actual steel temperatures <1000 F)
- Significant difference in modeling Poisson's ratio, but expected to have little effect on results
- Stress-strain curves for Alloy 600 base metal are very similar over range of strains encountered
  - DEI curve has more data points in area of greatest interest (near yield)
- Significant difference in modeling of Alloy 182 weld
  - EMC^2 models actual properties
  - DEI assumes elastic-perfectly plastic
  - DEI approach considered to represent actual residual stress levels in weld metal

Models to Compare DEI and EMC² Results

Weld Joint Geometry



DEI

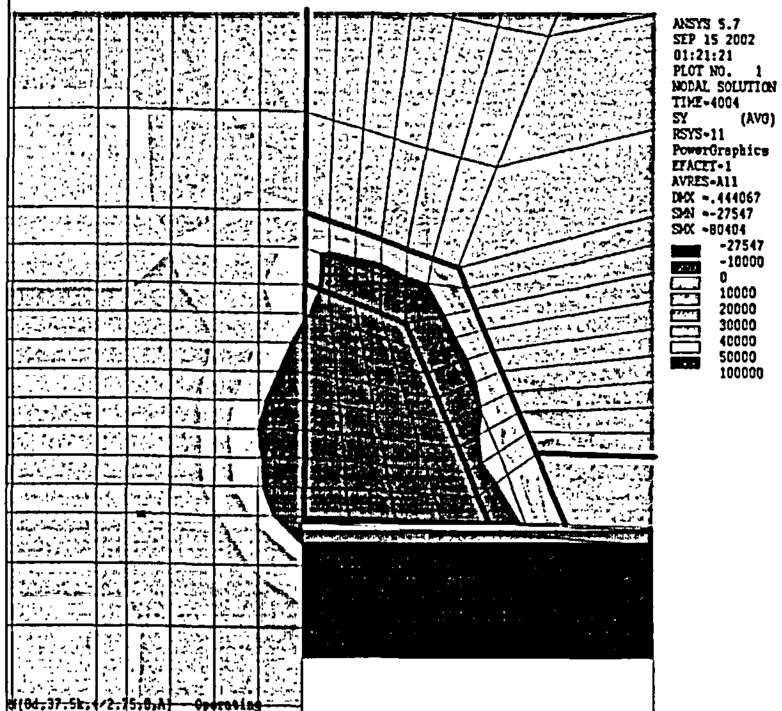


EMC²

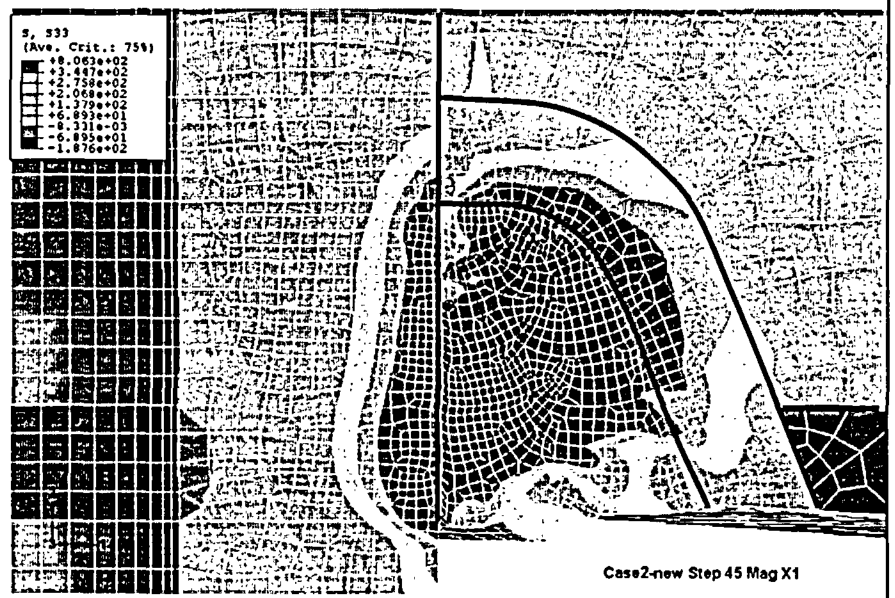
Welding Residual Stress Model – DEI/EMC² Comparison 15

Comparison of Results

Hoop Stresses at Weld



DEI

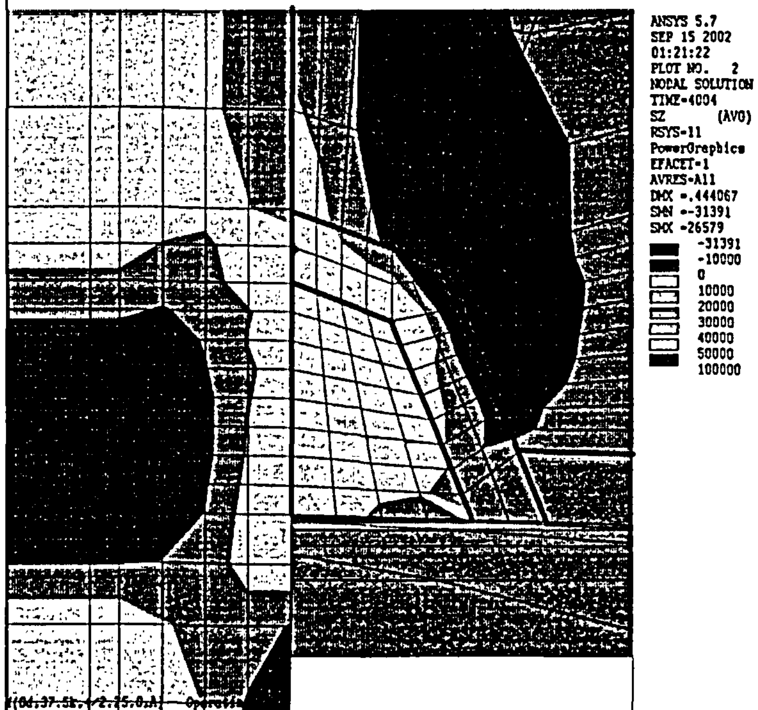


EMC²

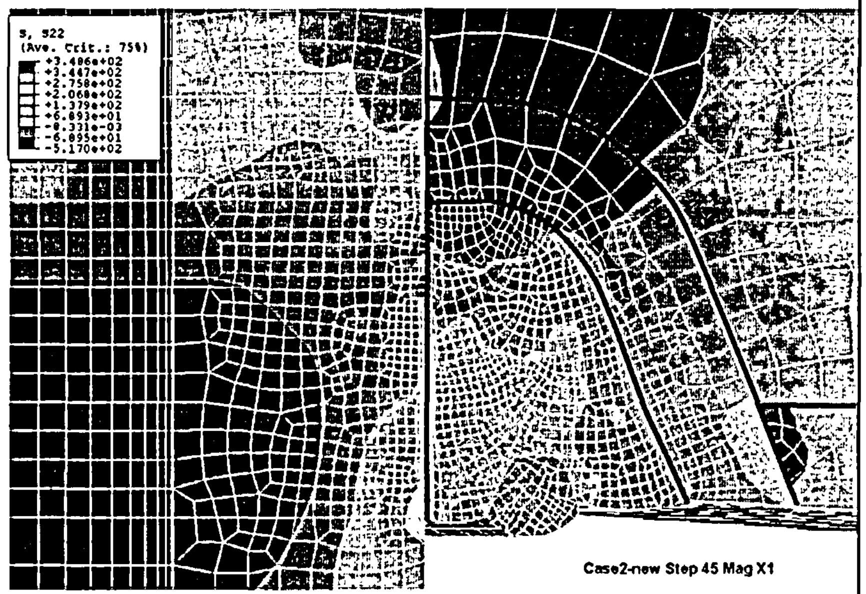
Note: Stress contours are the same [DEI in psi, EMC² in MPa], but colors are different.

Comparison of Results

Axial Stresses at Weld



DEI



EMC²

Note: Stress contours are the same [DEI in psi, EMC² in MPa], but colors are different.

Conclusions Regarding Stresses

- DEI and EMC2 analyses were significantly different
  - Computer software [DEI = ANSYS, EMC2 = ABAQUS]
  - Weld material properties [DEI = elastic-perfectly plastic, EMC2 = multi-linear]
  - Mesh refinement [DEI = coarse, EMC2 = finer (13 passes modeled)]. Basis for DEI using coarse mesh
    - Parametric studies used to determine mesh refinement beyond which there is little change in calculated stresses
    - Uncertainty in "as-built" weld joint geometry
    - Uncertainty in the actual weld procedure (bead size, pass sequence, interpass temperature, etc.)
- Hoop and axial stresses between the two models are in reasonably good agreement considering significant differences in modeling assumptions
  - Differences unlikely to change conclusions

Docket No. 50-336
B19008

Enclosure 2

Millstone Power Station, Unit No. 2

Westinghouse Proprietary Class 2
Application for Withholding Proprietary Information From Public Disclosure and the RAI Responses to Millstone Unit 2 Relaxation Request (4 copies)
WCAP-15813-P, Revision 1

Westinghouse

Westinghouse Electric Company
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P.O. Box 355
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Document Control Desk
Washington, DC 20555-0001

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e-mail: galem1js@westinghouse.com

Our ref: CAW-03-1731

November 3, 2003

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: "RAI Responses to Millstone Unit 2 Relaxation Request", (Proprietary), WCAP-15813-P, Rev. 1

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-03-1731 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. The affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.790 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying affidavit by Dominion.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse affidavit should reference this letter, CAW-03-1731 and should be addressed to the undersigned.

Very truly yours,

B. F. Maurer, Acting Manager
Regulatory Compliance and Plant Licensing

Enclosures

cc: J. Dyer
D. Holland
B. Benney
E. Peyton

bcc: J. S. Galembush (ECE 4-7A) 1L
R. Bastien, 1L, 1A (Nivelles, Belgium)
C. Brinkman, 1L, 1A (Westinghouse Electric Co., 12300 Twinbrook Parkway, Suite 330, Rockville, MD 20852)
RCPL Administrative Aide (ECE 4-7A) 1L, 1A (letter and affidavit only)

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF ALLEGHENY:

Before me, the undersigned authority, personally appeared J. W. Winters, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC ("Westinghouse"), and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:

J. W. Winters
J. W. Winters, Manager
Passive Plant Projects and Development
AP600 and AP1000 Projects

Sworn to and subscribed
before me this 3rd day
of November, 2003

Sharon L. Fiori
Notary Public

Notarial Seal
Sharon L. Fiori, Notary Public
Monroeville Boro, Allegheny County
My Commission Expires January 29, 2007
Member, Pennsylvania Association Of Notaries

SHARON L. FIORI
COMMONWEALTH OF PENNSYLVANIA
NOTARY PUBLIC

(1) I am Manager, Passive Plant Projects and Development, in Nuclear Services, AP600 and AP1000 Projects, Westinghouse Electric Company LLC ("Westinghouse"), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of the Westinghouse Electric Company LLC.

(2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.790 of the Commission's regulations and in conjunction with the Westinghouse application for withholding accompanying this Affidavit.

(3) I have personal knowledge of the criteria and procedures utilized by the Westinghouse Electric Company LLC in designating information as a trade secret, privileged or as confidential commercial or financial information.

(4) Pursuant to the provisions of paragraph (b)(4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.

(i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.

(ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitutes Westinghouse policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

(a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

(b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.

(c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.

(d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.

(e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.

(f) It contains patentable ideas, for which patent protection may be desirable.

There are sound policy reasons behind the Westinghouse system which include the following:

(a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.

(b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.

(c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

(d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.

(e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.

(f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.

(iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.790, it is to be received in confidence by the Commission.

(iv) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.

(v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in of the "RAI Responses to Millstone Unit 2 Relaxation Request", (Proprietary), WCAP-15813-P, Rev. 1, for Millstone Unit 2, dated November 3, 2003, being transmitted by the Dominion letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted for use by Westinghouse Electric Company LLC for Millstone Unit 2 is expected to be applicable for other licensee submittals in response to certain NRC requirements for justification of of the use of fracture mechanics analyses to support continued safe operation of Millstone 2 with the presence of a crack in a control rod drive head penetration.

This information is part of that which will enable Westinghouse to:

(a) Determine the allowable time of safe operation if cracks are found.

(b) Assist the customer to obtain NRC approval.

Further this information has substantial commercial value as follows:

(a) Westinghouse plans to sell the use of similar information to its customers for purposes of meeting NRC requirements for licensing documentation.

(b) Westinghouse can sell support and defense of continued safe operation with the presence of cracks in a control rod drive head penetration.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the of competitors to provide similar support documentation and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

PROPRIETARY INFORMATION NOTICE

Transmitted herewith are proprietary and/or non-proprietary versions of documents furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

In order to conform to the requirements of 10 CFR 2.790 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the affidavit accompanying this transmittal pursuant to 10 CFR 2.790(b)(1).

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