ENCLOSURE 2

GE Non-Proprietary Report GE-NE-0000-0050-5900NP, Revision 0, "Comparative Evaluation of the Monticello Core Plate Rim Hold-Down Bolts and BWRVIP-25, Appendix A Analysis

13 Pages Follow

GE Energy, Nuclear

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Monticello Nuclear Power Station License Renewal Project

Comparative Evaluation of the Monticello Core Plate Rim Hold-Down Bolts and BWRVIP-25, Appendix A Analysis

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1.0 INTRODUCTION

This letter report documents the structural integrity evaluation of the core plate bolts and aligner pins to support the License Renewal of the Monticello Nuclear Generating Plant (MNGP). The bases for the development of this report are NRC questions regarding the adequacy of the core plate bolts to support License Renewal. The BWRVIP-25 core plate finite element analysis was originally performed to help utilities determine a strategy for core plate inspections, wherein conservative geometric conditions and bounding, postulated worst-case scenarios were considered. It is noted that the BWRVIP-25 analysis approach is not the original design basis requirement. However, it is desired that an analysis similar to that of BWRVIP-25 be performed for the MNGP core plate to demonstrate that the results documented in the BWRVIP-25 analysis bound those of the MNGP core plate. The core plate configuration used in the BWRVIP-25 analysis bears close similarities with the MNGP core plate; therefore, an evaluation is performed using the original BWRVIP-25 analysis as the baseline and reconciling the results based on comparison of MNGP-specific core plate geometric parameters and loading. This evaluation is performed at the request of MNGP as a bounding evaluation to demonstrate that the core plate bolt integrity is satisfied for License Renewal.

2.0 SCOPE

The scope of the stress calculations for the core plate bolts and aligner pins performed herein is to consider the three scenarios of the core plate analysis per BWRVIP-25, Appendix-A. The three scenarios are listed below.

Scenario-1. Calculate loads and stresses in bolts with no credit for aligner pins.

Scenario-2. Calculate the shear load and shear stress in the aligner pins with no credit for horizontal bolt restraint.

Scenario-3. Calculate the loads and stresses in the bolts with no credit for the aligner pins and with rim welds cracked.

2.1. Objective

The objective of this evaluation is to show that the MNGP core plate bolts and aligner pins stresses in the faulted conditions are bounded by those calculated in BWRVIP-25, Appendix-A. Given the nature of the scenarios, listed in BWRVIP-25, the calculations performed herein are not design basis calculations.

3.0 CALCULATIONS

3.1. Assumptions

- Calculations are performed considering MNGP-specific faulted condition loads,, consistent with BWRVIP-25, Appendix-A. Stress results for core plate bolts and aligner pins obtained from these calculations were compared with the corresponding stresses listed in BWRVIP-25 Appendix-A.

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3.2. Calculation Approach

The review of the parameters (geometry/loading) of the BWRVIP-25 finite element model and the MNGP core plate shows that both core plates are similar. Based on this similarity, the BWRVIP-25 Appendix-A finite element analysis results can be utilized to evaluate the MNGP core plate bolt stresses. The evaluation considers the following approach.

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3.3. Comparison of BWRVIP-25 and MNGP Core Plates

The following table presents a comparison of the geometric sizes, features and loads applicable to the core plates of MNGP and those used in BWRVIP-25 (Ref 5.1.) [[

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Table 3.3-1.Comparison of Physical and Load Data

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3.4. Applicable Loads

The following faulted condition design basis loads are considered in the MNGP core plate bolt stress calculations.

Table 3.4-1. Comparison of Faulted Loads for BWRVIP-25 and MNGP

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3.5. Calculation of Axial and Bending Stiffnesses of the MNGP Core Plate Bolts

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Table 3.5-1. Axial and Bending Stiffnesses of the Bolts

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3.6. Axial Loads and Membrane (Pm) Stresses in the Core Plate Bolts

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Table 3.6-1. Axial Loads and Membrane (Pm) Stresses in the Bolts.

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3.7. Bending Stresses in the Bolts due to Lateral Loads – Scenarios 1 and 3

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Table 3.7-1. Bending Stresses in the Bolts Due to Lateral Faulted Loads

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3.8. Bending Stresses in the Bolts Due to Bowing of the Core Plate

Since the MNGP and BWRVIP-25 core plates are similar in geometry and configuration, [[

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3.9. Bending stresses in the Bolts due to Core Plate Bowing

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3.10. Scenario 2 – Shear Stress in the Aligner Pins

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Table 3.10-1. Shear Stress in the Aligner Pins

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3.11. Summary of Results

The stress results for the BWRVIP-25 and MNGP core plate bolts and aligner pins are provided in the table below.

Table 3.11-1. Comparison of Stress Results for BWRVIP-25 and MNGP Core Plate Bolts

Scenario	Description	ASME Allowable Stresses, ksi	BWRVIP-25		MNGP				Comment
			Loads, kips	Stress, ksi	Load, kips		Load, kips		
					2.0" bolt	2.0" bolt	2.0" bolt	2.5" bolt	
Scenario 1. Determine the load on core plate bolts with no credit for aligners.	Total horizontal load		[[						
	Total vertical load								
	Mean membrane stress, Pm	2.4Sm = 40.56					8.00	7.91	Meets ASME allowables
	Mean bending stress, Pb						25.84	32.18	Bounded By BWRVIP-25
	Mean (Pm+Pb) stress	3Sm = 50.70					33.84	40.09	
Scenario 2. Determine shear load on aligner pins with no credit for horizontal bolt restraint	Maximum lateral load								
	Mean shear stress	1.5 Sm = 25.35					11.27		Bounded By BWRVIP-25
Scenario 3. Determine load on bolts with no credit for aligners and with rim weld cracked.	Total horizontal load								
	Total vertical load								
	Mean membrane stress, Pm	2.4Sm = 40.56					8.00	7.91	Meets ASME allowables
	Mean bending stress, Pb						25.84	32.18	Bounded By BWRVIP-25
	Mean (Pm+Pb) stress	3Sm = 50.70				]]	33.84	40.09	

4.0 CONCLUSIONS

Considering the similarities in geometry and construction of the MNGP and BWRVIP-25 core plates, a conservative evaluation of the stresses in the core plate rim hold-down bolts has been performed.

Based on the comparative analysis described in the earlier sections of this report and the estimated stress results summarized in Table 3.11-1, The following conclusions are made:

- The mean Pm stresses in the MNGP bolts are within ASME allowable limits, but are higher than those in Appendix A of BWRVIP-25. This is due to the pre-load used for MNGP being considerably higher than the preloads used in BWRVIP-25 analysis.
- The mean (Pm + Pb) stresses for MNGP core plate bolts are within the ASME allowable limits. They remain bounded by those in Appendix A of BWRVIP-25. (Scenarios 1 and 3)
- The mean shear stress in the aligner pins for MNGP is within the ASME allowable limits. It remains bounded by the shear stresses reported in Appendix A of BWRVIP-25.

5.0 REFERENCES

5.1. BWR Vessel and Internals Project, BWR Core Plate Inspection and Flaw Evaluation Guidelines (BWRVIP-25).

5.2. Shigley, "Mechanical Engineering Design", Third Edition, McGraw Hill, page 247.

5.3. Warren C. Young, "Roark's Formulas for Stress and Strain", 6th Edition, McGraw Hill, Table 24, Cases 9a and 10a.

ENCLOSURE 3

GE Affidavit Support Withholding of Proprietary Report GE-NE-0000-0050-5900P, Revision 0, "Comparative Evaluation of the Monticello Core Plate Rim Hold-Down Bolts and BWRVIP-25, Appendix A Analysis" From Public Disclosure

3 Pages Follow

General Electric Company

AFFIDAVIT

I, Louis M. Quintana, state as follows:

(1) I am Manager, Licensing, General Electric Company ("GE"), and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.

(2) The information sought to be withheld is contained in Enclosure 1 to GE letter MNGP-LR-GE-018, Mr. George E. Paptzun (GE) to Joe Pairitz (Monticello NPS), *Monticello License Renewal Project – Transmittal - Comparative Evaluation of the Monticello Core Plate Rim Hold-down Bolts and BWRVIP-25, Appendix A Analysis,* dated February 16, 2006. The proprietary information in Enclosure 1, *Comparative Evaluation of the Monticello Core Plate Rim Hold- Down Bolts and BWRVIP-25, Appendix A Analysis,* is identified by [[double underlines inside double square brackets{3}]]. In each case, the superscript notation{3} refers to Paragraph (3) of the enclosed affidavit, which provides the basis for the proprietary determination.

(3) In making this application for withholding of proprietary information of which it is the owner, GE relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), and 2.390(a)(4) for "trade secrets" (Exemption 4). The material for which exemption from disclosure is here sought also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).

(4) Some examples of categories of information which fit into the definition of proprietary information are:

a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by General Electric's competitors without license from General Electric constitutes a competitive economic advantage over other companies;

b. Information which, if used 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 of a similar product;

c. Information which reveals aspects of past, present, or future General Electric customer-funded development plans and programs, resulting in potential products to General Electric;

d. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a. and (4)b. above.

(5) To address 10 CFR 2.390 (b) (4), the information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by GE, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GE, no public disclosure has been made, and it is not available in public sources. All disclosures to third parties including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.

(6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within GE is limited on a "need to know" basis.

(7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GE are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.

(8) The information identified in paragraph (2), above, is classified as proprietary because it contains detailed results of analytical models, methods and processes, including computer codes, which GE has developed and applied to perform evaluations of the core holddown structures for the BWR. The development and approval of the BWR core plate analysis basis was achieved at a significant cost, on the order of one million dollars, to GE.

The development of the evaluation process along with the interpretation and application of the analytical results is derived from the extensive experience database that constitutes a major GE asset.

(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GE's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of GE's comprehensive BWR safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical and NRC review costs comprise a substantial investment of time and money by GE.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

GE's competitive advantage will be lost if its competitors are able to use the results of the GE experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GE would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GE of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Executed on this 16th day of February 2006.

Louis M. Quintana

Louis M. Quintana
Manager, Licensing

ENCLOSURE 4

Response to NRC Question Regarding N2 Nozzle USE Information

1. **NRC RAI 4.2-3b**

In its initial response to RAI 4.2-3, dated October 28, 2005, the applicant provided a table projecting Upper Shelf Energy (USE) data through the period of extended operation. The staff noted the table was missing data for the nozzles. The applicant referenced BWRVIP-74, which provided USE data for the plates. However, the staff noted that nozzles are forged components, not plates, and requested the applicant to provide a technical basis for their position that the plates are limiting components.

NMC Response

Given the hot working normally associated with the fabrication of forgings (resulting in a more refined grain structure), it is expected that the fracture toughness properties of the A 508 Class 2 forging materials would be equivalent, if not better than, the corresponding A 533 Grade B plate materials typically used to fabricate beltline shell courses (see also Section 4.3.3 of Reference 4). A 508 Class 2 forging materials (or equivalent) have been used throughout the industry for fabrication of reactor vessel components, including the Monticello Nuclear Generating Plant (MNGP) recirculation inlet (N2) nozzles, and as such, a significant amount of data has been reported on the fracture toughness of these materials.

A study was performed using the NRC Reactor Vessel Integrity Database, Revision 2 (RVID2). All A 508 Class 2 (or equivalent) forging materials were reviewed, and the methodology used in BWRVIP-74-A (Reference 5) was applied to provide a comparison of the forging material properties to the plate material properties. Table 1 contains a listing of the unirradiated upper shelf energy (USE) for both BWR and PWR plants with beltline forging materials obtained from RVID2. Using the BWRVIP-74-A methodology including a 95/95 confidence interval, the following results were obtained. The mean of the USE data for forgings is 108 ft-lb, with a minimum observed USE of 70 ft-lb. As noted in Reference 4, there is some variability in the upper shelf energy results obtained from beltline forging materials. The standard deviation, σ, is 24. As defined in NUREG-1475, for 95/95 confidence with a data set consisting of 67 data points, the κ value is 1.9996. This results in a Mean – $\kappa\sigma$ of 60 ft-lb (see Figure 1). Being consistent with BWRVIP-74-A, because the Mean – $\kappa\sigma$ was lower than the minimum observed USE, the Mean – $\kappa\sigma$ was conservatively used.

For comparison, the plate data used to develop the equivalent margin analysis is shown in Appendix B to BWRVIP-74-A. The mean equivalent

plate transverse Charpy energy was reported as 82.5 ft-lb, with a minimum observed Charpy USE of 59 ft-lb. The Mean – $\kappa\sigma$ is 64.5 ft-lb (see Figure B-4 of Reference 5). Note that in the BWRVIP analysis, since the minimum value was lower than the Mean – $\kappa\sigma$ value, the minimum value of 59 ft-lb was used to demonstrate the acceptability of the equivalent margin analysis.

Based on these data, forging upper shelf energy is consistent with the observed beltline plate upper shelf energies, and is therefore bounded by the equivalent margin analysis.

To further demonstrate the acceptability of the N2 nozzle fracture toughness, forging data determined from RVID2 is applied specifically to MNGP. Figure 1 provides the forging data from RVID2 in a manner similar to Figure B-4 of Reference 5. Using Revision 2 of Regulatory Guide 1.99 (RG 1.99) in conjunction with the RVID2 forging database results, the MNGP-specific forging end-of-life (EOL) USE becomes:

MNGP 54 EFPY N2 Fluence	5.23e17 n/cm^2
MNGP N2 %Cu	0.18 (bounds worst case in RVID2 = 0.17)
RG 1.99 Predicted %Decrease	13.6 (using Figure 2 of RG 1.99)
(Mean – $\kappa\sigma$) * (1 - %Decrease/100)	[108 – (1.9996 * 24)] * [1 – 13.6/100)]
EOL USE	52 ft-lb

The EOL USE of 52 ft-lb exceeds the transverse plate requirement of 35 ft-lb for equivalent margin.

The RVID2 database surveillance capsule results were also reviewed to evaluate the behavior of forging materials with respect to plate materials. Forty-three (43) transverse data points were obtained from RVID2, as shown in Table 2. Of the 43 data points, forty (40) demonstrate USE decreases that are bounded by the RG 1.99 predictions, using %Cu and capsule fluence. The three data points where the measured USE drop percentage exceeds the predicted USE percentage decrease are all from the same plant, a PWR with very low copper content. Figure 2 provides a plot of these values. Review of these results indicates that application of the RG 1.99 prediction to forgings adequately predicts the irradiated behavior of these materials.

Therefore, it has been demonstrated that the forging materials meet or exceed the requirements for plate materials, and that the MNGP N2 nozzle case is bounded by the EMA plate requirements described in

BWRVIP-74-A. Further, it has been demonstrated that, in general, irradiated forging materials behave in a manner consistent with the predictions of RG 1.99. Based on the results of this evaluation, the USE of the N2 nozzle forgings will be adequate for the period of extended operation.

Table 1: Beltline Forging Unirradiated Upper Shelf Energy (USE) From RVID2

PLANT	Unirradiated USE(ft-lb)
ARKANSAS NUCLEAR 1	109
BRAIDWOOD 1	118
BRAIDWOOD 1	136
BRAIDWOOD 1	162
BRAIDWOOD 2	119
BRAIDWOOD 2	128
BRAIDWOOD 2	150
BYRON 1	138
BYRON 1	138
BYRON 1	150
BYRON 2	127
BYRON 2	149
BYRON 2	155
CATAWBA 1	134
CATAWBA 1	134
CRYSTAL RIVER 3	109
DAVIS-BESSE	122
DAVIS-BESSE	132
DAVIS-BESSE	140
GINNA	91
GINNA	114
GINNA	117
HOPE CREEK	70
HOPE CREEK	79
KEWAUNEE	92
KEWAUNEE	97
MCGUIRE 2	97
MCGUIRE 2	100
NORTH ANNA 1	74
NORTH ANNA 1	85
NORTH ANNA 1	92
NORTH ANNA 2	74
NORTH ANNA 2	74

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PLANT	Unirradiated USE(ft-lb)
NORTH ANNA 2	80
OCONEE 1	109
OCONEE 2	109
OCONEE 2	133
OCONEE 2	138
OCONEE 3	109
OCONEE 3	112
OCONEE 3	144
POINT BEACH 1	78
POINT BEACH 2	78
POINT BEACH 2	94
POINT BEACH 2	117
PRAIRIE ISLAND 1	84
PRAIRIE ISLAND 1	134
PRAIRIE ISLAND 1	143
PRAIRIE ISLAND 2	85
PRAIRIE ISLAND 2	106
PRAIRIE ISLAND 2	112
SEQUOYAH 1	72
SEQUOYAH 1	79
SEQUOYAH 2	88
SEQUOYAH 2	100
SURRY 1	83
SURRY 2	104
TMI-1	109
TURKEY POINT 3	93
TURKEY POINT 3	99
TURKEY POINT 3	100
TURKEY POINT 4	86
TURKEY POINT 4	88
TURKEY POINT 4	103
WATTS BAR 1	88
ZION 1	87
ZION 2	109
Mean	108
σ	24
κ (67 data pts)	1.9996
Mean - $\kappa\sigma$	60

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Table 2: Surveillance Capsule Forging Irradiated Upper Shelf Energy (USE) from RVID2

Data Point	Plant	Unirradiated USE (ft-lb)	Measured USE (ft-lb)	Capsule Fluence (n/cm2)	%Cu	RG 1.99 %Decrease	Measured %Decrease
1	Oconee 3	110	101	3.12E+18	0.01	8.2	8.18
2	Oconee 3	110	92	1.45E+19	0.01	12.5	16.36
3	Davis-Besse	116	113	5.92E+18	0.02	10.5	2.59
4	Davis-Besse	116	114	9.62E+18	0.02	11.5	1.72
5	Davis-Besse	116	118	1.96E+18	0.02	8	0.00
6	Oconee 3	141	131	8.10E+17	0.02	6.5	7.09
7	Oconee 3	141	124	3.12E+18	0.02	8.8	12.06
8	Oconee 3	141	124	1.45E+19	0.02	13	12.06
9	Braidwood 2	168	166	2.25E+19	0.026	15	1.19
10	Byron 1	145	145	4.04E+18	0.036	10.2	0.00
11	Byron 1	168	159	2.43E+19	0.036	16.2	5.36
12	Davis-Besse	140	127	1.29E+19	0.04	14.5	9.29
13	Oconee 2	127	127	3.37E+18	0.04	10.2	0.00
14	Oconee 2	127	127	1.02E+18	0.04	7.5	0.00
15	Oconee 2	127	114	1.21E+19	0.04	14	10.24
16	Braidwood 1	168	168	3.87E+18	0.05	10.2	0.00
17	Braidwood 1	168	160	2.09E+19	0.05	14.9	4.76
18	Braidwood 1	168	166	1.24E+19	0.05	13.3	1.19
19	Byron 2	170	157	1.27E+19	0.05	13.4	7.65
20	Kewaunee	160	156.8	2.89E+19	0.06	17.9	2.00
21	Kewaunee	160	160	1.94E+19	0.06	16.4	0.00
22	Kewaunee	157	157	2.89E+19	0.06	17.9	0.00
23	Kewaunee	157	152.3	1.94E+19	0.06	16.4	2.99
24	Prairie Island 1	143	155	6.27E+18	0.06	12.8	0.00
25	Byron 2	170	162	2.30E+19	0.075	19.4	4.71
26	Prairie Island 2	150	127	4.38E+19	0.085	24.4	15.33
27	Prairie Island 2	150	133	1.20E+19	0.085	18.1	11.33
28	Catawba 1	168	151	2.33E+19	0.086	21.1	10.12
29	Catawba 1	168	153	1.32E+19	0.086	18.6	8.93
30	North Anna 2	115	120	9.80E+18	0.11	20.1	0.00
31	North Anna 2	120	120	2.46E+18	0.11	14.5	0.00
32	Sequoyah 1	116	98	2.74E+18	0.13	16.4	15.52
33	Sequoyah 2	134	118	2.20E+18	0.13	15.5	11.94
34	Sequoyah 2	134	110	6.43E+18	0.13	20.1	17.91
35	Sequoyah 2	134	123	1.11E+19	0.13	22.7	8.21
36	Watts Bar 1	132	107	5.05E+18	0.155	21.1	18.94
37	North Anna 1	135	122	2.63E+18	0.156	18.1	9.63
38	North Anna 1	135	95	2.05E+19	0.156	29.7	29.63
39	McGuire 2	156	122	1.96E+19	0.16	29.4	21.79
40	McGuire 2	156	134	3.27E+18	0.16	19.4	14.10
41	McGuire 2	154	113	2.97E+19	0.16	32.3	26.62
42	McGuire 2	156	136	1.41E+19	0.16	27.2	12.82
43	Kewaunee	123	98.4	3.45E+19	0.17	34.8	20.00

Figure 1 Forgings Meet Equivalent Margin Requirements

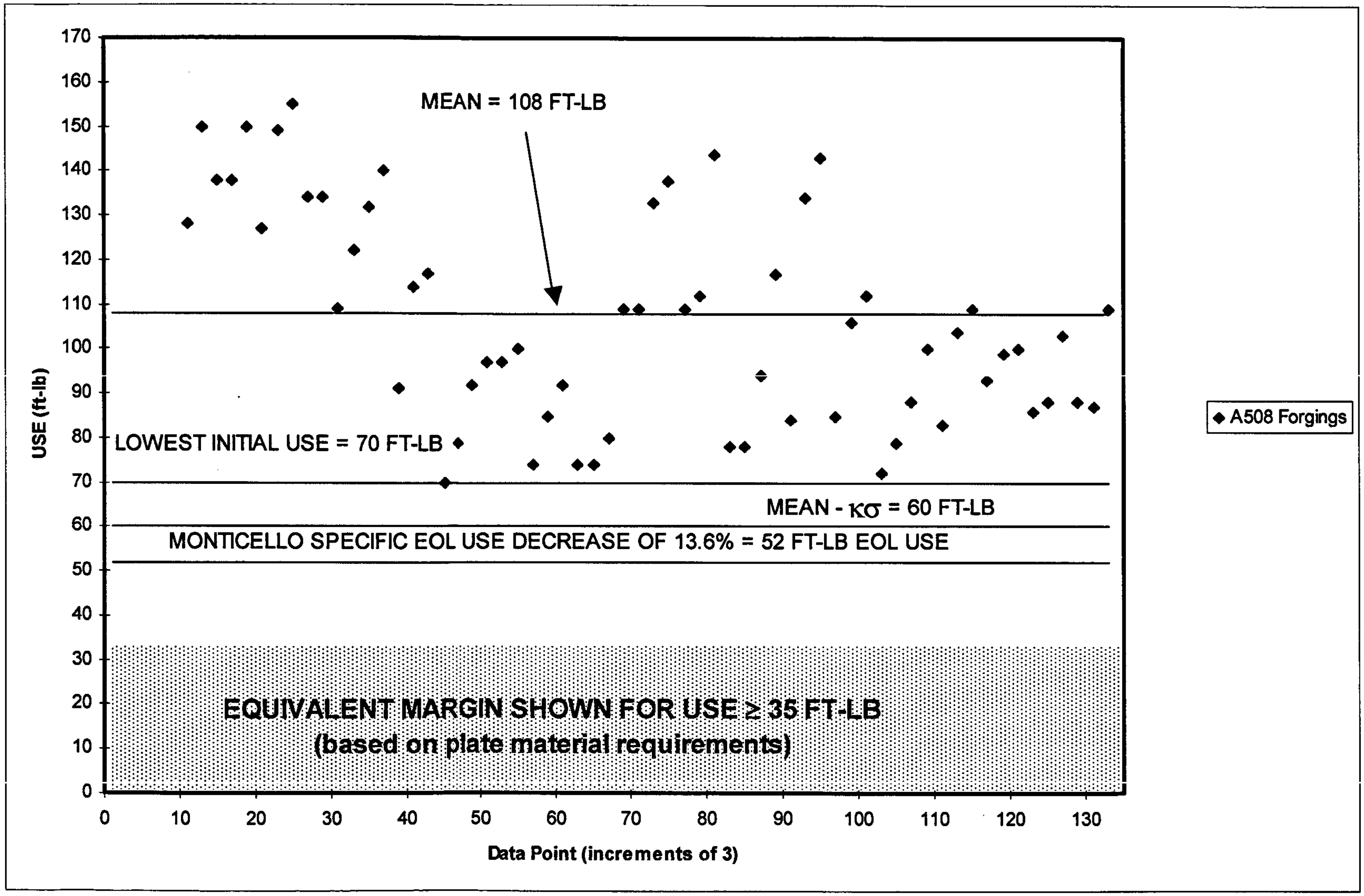
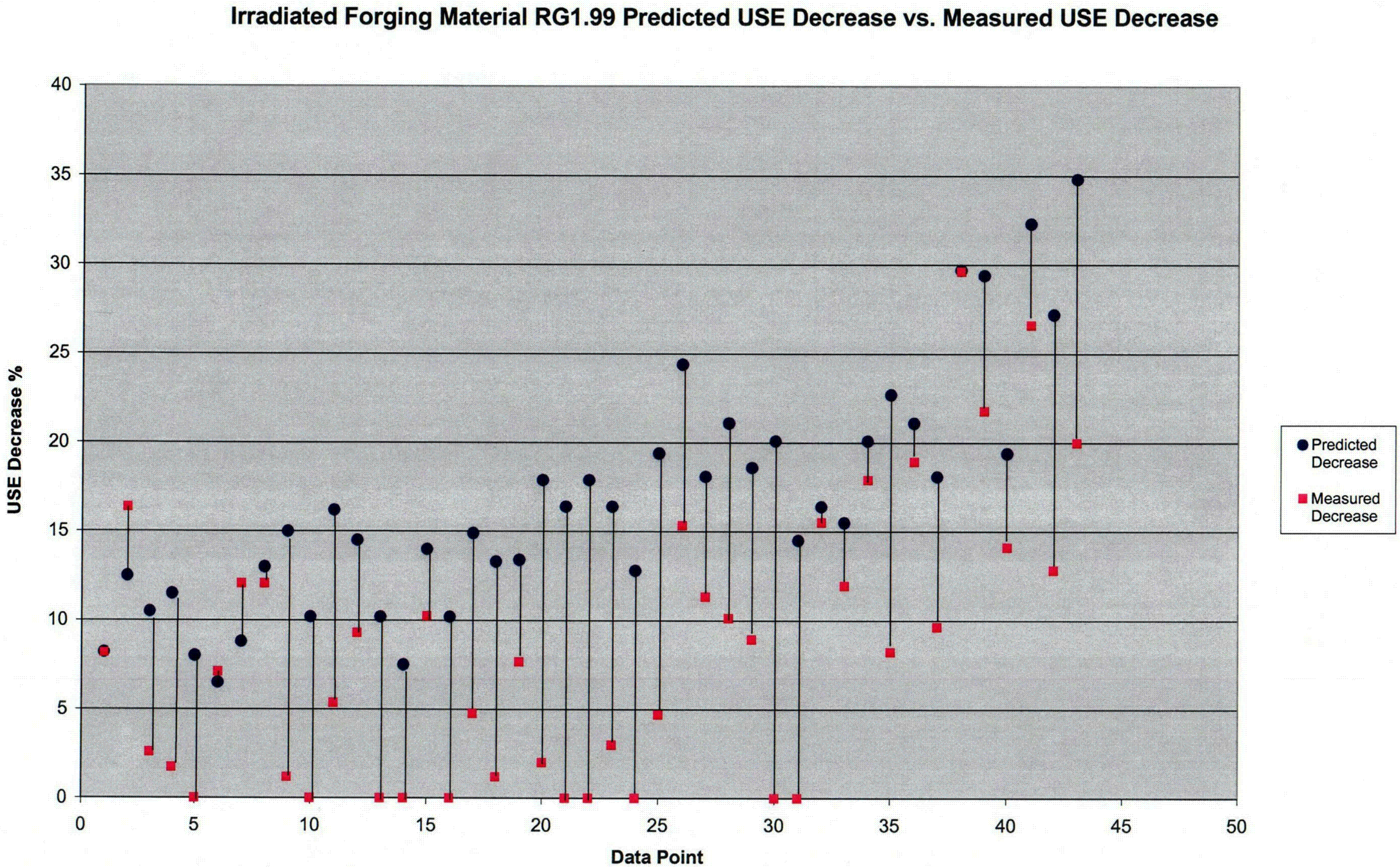


Figure 2 Surveillance Capsule Forgings: RG1.99 Predicted Decrease vs. Measured Decrease



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ENCLOSURE 5

Supplemental Information Related to Previous RAIs Responded to on December 7, 2005

1. **NRC RAI 3.6-1a**

In a letter dated December 7, 2005, the applicant provided a response to RAI 3.6-1 which addressed the aging management program for electrical penetrations. The staff requested the applicant to verify that the non-safety-related drywell penetrations were qualified for a 60-year life. The staff also requested the applicant to provide the frequency of surveillance inspections for leak detection for the penetrations.

NMC Response

All primary containment electrical penetrations are classified as safety related and perform a primary containment function. Some electrical penetrations have been classified as equipment qualification (EQ) related. All non-EQ penetrations within the scope of License Renewal were procured to the same specification as EQ related penetrations. The EQ penetrations are all environmentally qualified for greater than 60 years. The non-EQ penetrations were manufactured to the same specification and from the same materials as the EQ penetrations. Therefore, there is reasonable assurance that the non-EQ penetrations are qualified for greater than 60 years.

Preventative Maintenance Procedure 7269 - Containment Electrical Penetrations PM or Procedure 0137-01 - Local Leak Rate Test of Containment Electrical Penetrations perform routine maintenance and testing of electrical penetrations. The preventative maintenance procedure is performed to comply with Service Information Letter (SIL) No. 259 and the local leak rate testing is performed to comply with 10 CFR 50 Appendix J Option B. The scheduled frequency for Procedure 0137-01 is every refueling outage and the scheduled frequency for Procedure 7269 is every 2 years.

2. **NRC RAI 3.6-2a**

In its response to RAI 3.6-2, dated December 7, 2005, the applicant described the aging mechanisms for cable connectors. The applicant stated that the thermography program monitors substation equipment, 4-kV breakers, load centers, motor control centers, control panels, DC equipment, motors, generators, and connections associated with these components at least semi-annually. The staff requested the applicant to verify that the thermography program addresses the 10 program elements described in GALL AMP XI.E6. The staff also requested the applicant verify that the switchyard connections and transmission connections were also covered by the thermography program.

NMC Response

NMC commits to implementing a MNGP program which is consistent with the NUREG 1801, Revision 1, XI.E6, "Electrical Cable Connections Not subject to 10 CFR 50.49 Environmental Qualification Requirements" program. The details of this program will be consistent with the program description and the ten elements described in the NUREG 1801, Revision 1, XI.E6 program and will be provided in the March 2006 annual update.

ENCLOSURE 6

Correction of Errors in Describing and Referencing Requirements of the American Society of Mechanical Engineers (ASME) Section XI Inservice Inspection and Testing Program for Purposes of License Renewal

1. Clarification of Bolting Program Statements Concerning Section XI

MNGP is implementing the CRD bolting examination in accordance with Table IWB-2500, Category B-G-2, Item B7.80 of the 1995 Edition of Section XI of the ASME Code. This examination is listed in the MNGP Engineering Work Instruction for the ASME Code Section XI In-Service Inspection Program.

In our License Renewal Application, MNGP took exception to this portion of NUREG-1801, Revision 0, because it calls out the 1995 Edition of Section XI through the 1996 Addenda. The 1996 Addenda does not identify CRD bolting examinations in Table IWB-2500. The applicable MNGP Aging Management Program states that the 1995 Edition with the 1995 Addenda will be implemented in order to perform the CRD bolting examination. However, during a subsequent review, it was found that the 1995 Addenda to the 1995 Edition of ASME Section XI also eliminated the CRD bolting examinations. The use of the 1995 Addenda for the CRD bolting examination is an editorial error in the MNGP Fourth Interval In-service Inspection Plan. This error has been entered into the site Corrective Action Program (AR No. 01013564). This discrepancy has no impact on the performance of the CRD bolting examinations since the requirements for this examination are contained in the implementing procedure.

The deletion of the applicability of the 1995 Addenda of Section XI of the ASME Code requires (1) a revision to the MNGP Fourth Interval ISI Plan, (2) a revision to the applicable License Renewal Aging Management Plan, and (3) a change to the associated section of the LRA. The LRA will be updated during the annual update to be submitted in March of 2006.

This LRA update will indicate that the MNGP AMP takes exception to NUREG-1801, Revision 0, by not adopting the 1996 Addenda and complying with the 1995 Edition for the CRD bolting examination.

2. Use of 2001 Edition of Section XI of the ASME Code for Monticello Repair/ Replacement Program

In Enclosure 1, Table 1, "NRC Audit item B2.1.26-01: Alternatives to ASME Section XI, ISI Program Impact On Aging Management," Item 8, of our submittal dated August 11, 2005, NMC provided the basis for the acceptability of the use of the 2001 Edition of the ASME Code, Section XI, for the MNGP Repair/Replacement Program.

The reference to the applicable Federal Register Notice approving this version of Section XI of the Code was incorrectly stated in our submittal. Our response referenced an earlier Federal Register Notice which only applied through the 2000 Edition of the Code.

The correct reference is Federal Register Volume 69, No. 190, October 1, 2004.