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SUBJECT: Forwards addl info re second 10-year interval inservice insp program,per 890816 commitment & NRC 890712 request.

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December 29, 1989

Director
Office of Nuclear Reactor Regulation
US Nuclear Regulatory Commission
Wwashington DC 20555

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Additional Information Pertaining to the
Second 10-Year Interval Inservice Inspection Program

Additional information pertaining to the second 10-year interval inservice inspection (ISI) program, Revision 9, for the Monticello Nuclear Generating Plant was requested in NRC letter dated July 12, 1989. We committed to providing that information in a letter dated August 16, 1989. The purpose of this letter is to respond to the request for additional information.

Our response to the request for additional information is attached. Please contact us if you have any questions related to this information or if additional information is required to supplement it.

Monica Vick
for Thomas M Parker
Manager
Nuclear Support Services

c: Regional Administrator-III, NRC
NRR Project Manager, NRC
NRC Resident Inspector
G Charnoff

Attachments

A047
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Attachment 1

MONTICELLO NUCLEAR GENERATING PLANT

Second Ten Year Interval Inservice
Inspection Program Response to
Request for Additional Information

Request A

The "Ten Year Interval-Examination Summary" tables were reviewed. Although the tables show the total number of welds to be examined, the specific piping welds to be examined during the second 10-year interval are not listed. Please provide information (i.e., weld numbers and isometric and/or component drawings) that will enable the staff to determine if the correct welds have been selected for examination during the second 10-year interval.

Response A

Specific piping welds are not listed to permit coordination of ISI activities with other maintenance activities. The individual welds are scheduled at the beginning of each inspection period based on the requirements of the 1977 Edition, Summer 1978 Addenda of the ASME Code Section XI except that the extent of examination for Code Class 1 and Code Class 2 piping welds are determined by the 1974 Edition, Summer 1975 Addenda as permitted and required by 10 CFR 50.55a(b).

You may review our Inspection Summary Reports, dated June 17, 1981, March 15, 1982, February 23, 1983, April 12, 1985, September 12, 1986, February 12, 1988 and December 12, 1989 to ensure that the welds inspected meet the code requirements.

Request B

The staff notes that the Class 2 piping welds in the Core Spray and Containment Spray Systems have been completely exempted from volumetric examination during the second 10-year interval. It is noted, however, that surface examinations are being performed.

Paragraph 10 CFR 50.55a(b)(2)(iv) requires that ASME Code Class 2 piping welds in the Residual Heat Removal (RHR), Emergency Core Cooling (ECC) and Containment Heat Removal (CHR) systems shall be examined. These systems should not be completely exempted from inservice volumetric examination based on Section XI exclusion criteria contained in IWC-1220. The staff has previously determined that a 7.5% augmented volumetric sample constitutes an acceptable resolution at similar plants. Discuss the impact of performing volumetric examination of at least 7.5% sample of the Class 2 piping welds in the Core Spray and Containment Spray Systems.

Response B

Table IWC-2500-1 Examination Category C-F states: piping welds 1/2 in. (13 mm) or less nominal wall thickness only require surface examination for these welds. Additional volumetric examinations beyond Code requirements, based on a 7.5% sample, would result in including volumetric examination for 15 welds. These 15 welds are already scheduled for surface examination.

Request C

Provide a list of the ultrasonic calibration standards being used during the second 10-year interval ISI at the Monticello Nuclear Generating Plant. This list should include the calibration standard identifications, material specifications, and sizes.

Response C

A list of calibration standards is attached.

Request D

Augmented examinations have been established by the NRC when added assurance of structural reliability is deemed necessary. Examples of documents for which augmented examinations may be required are:

(1) High Energy Fluid Systems, Protection Against Postulated Piping Failures in Fluid Systems Outside Containment, Branch Technical Position ASB 3-1;

(2) Regulatory Guide 1.150, Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations;

(3) NUREG-0619, BWR Feedwater Nozzle and CRD Return Line Nozzle Cracking;

(4) NUREG-0803, Integrity of BWR Scram System Piping; and

(5) Generic Letter 88-01, NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping (ref, NUREG-0313).

Address these and any other augmented examination which may have been incorporated in the Monticello Nuclear Generating Plant Second 10-Year Interval Inservice Inspection Program, Revision 9.

Response D

(1) Covered in Monticello's Updated Safety Analysis Report, Appendix I, Postulated Pipe Failures Outside Containment.

(2) Currently implemented in the ISI program for Reactor Vessel Welds.

(3) Currently implemented under the ISI program for Monticello.

(4) Section 5.1 Piping Integrity. Inservice Inspection of Control Rod Drive Scram Header and Piping is currently implemented under the ISI program for Monticello.

(5) Currently implemented under the ISI program for Monticello.

Attached is a list of augmented inspection items not included in the Inservice Inspection program.

Request E

Relief Request 18 requests relief from performing the VT-2 visual examination for evidence of leakage of the Reactor Pressure Vessel closure head flange leakage sensor nozzles. The Licensee states that these penetrations do not see pressure during operation or vessel pressure test unless the vessel O-rings leak and that inspection during pressure testing, therefore, serves no useful purpose. It also stated in the relief request that the nozzle area is not accessible without damaging insulation but that the area surrounding these two penetrations will be visually examined if insulation is removed for maintenance or other inspection activities.

Discuss how leakage of the vessel flange O-rings is detached. Discuss the impracticality of removing the insulation to allow performance of the Code-required examination. Discuss the impact of installing removable insulation so that these areas may be accessed for the Code-required examination.

Response E

Leakage past the inner vessel flange O-ring is detected by the reactor vessel head-seal leak detection system which consists of a closed chamber located in the head seal drain line coming off of nozzle N-13. A float type level switch is mounted in this chamber, a pressure switch and a pressure indicator are also included as part of the system. Leakage is detected by the build-up of pressure and/or liquid. Pressure in the chamber is indicated locally and pressure build-up is annunciated in the control room. The outer O-ring has no system to detect leakage. Nozzle N-14 has a drain line which is capped. The

Code required examination, VT-2, does not require the removal of insulation to complete the examination (see IWA-5242).

Request F

Relief Request 23 requests relief from VT-3 and VT-4 visual examinations of insulated Class 1, 2, and 3 piping component supports (Examination Categories B-K-2, C-E, and D-A, D-B, and D-C). Although the Licensee has committed to the visual examinations of the mechanical connections and welds, the impracticality of removing insulation for Code-required visual examination of the remainder of the component support has not been demonstrated, and must be justified for granting the relief requested.

Response F

Monticelle does not remove insulation from a component or piping system unless there is evidence of movement or damage to the insulation. Winter 1978 Addenda of Section XI, IWF-1300, does not require the removal of insulation to complete the examination.

Request G

Relief Request 24 requests relief from performing ultrasonic examinations of Recirculation pump flange bolts and Recirculation valve bonnet bolting in accordance with the Code requirements. Provide the procedure used for calibrating and performing ultrasonic examinations of the subject bolting. In order for the propose alternative examination to be acceptable, the Licensee should be using Code Case N-375-2 or the latest Code Edition and Addenda for examination of the subject bolting.

Response G

Code Case N-375-2 was not effective until April 5, 1984 and does not apply to Monticello's ISI program that was initially submitted in December 1981. The alternative examination falls under IWA-2240 to the extent that the procedure has been successfully demonstrated to the Inspector (Authorized Nuclear Inservice Inspector) as defined by Section XI.

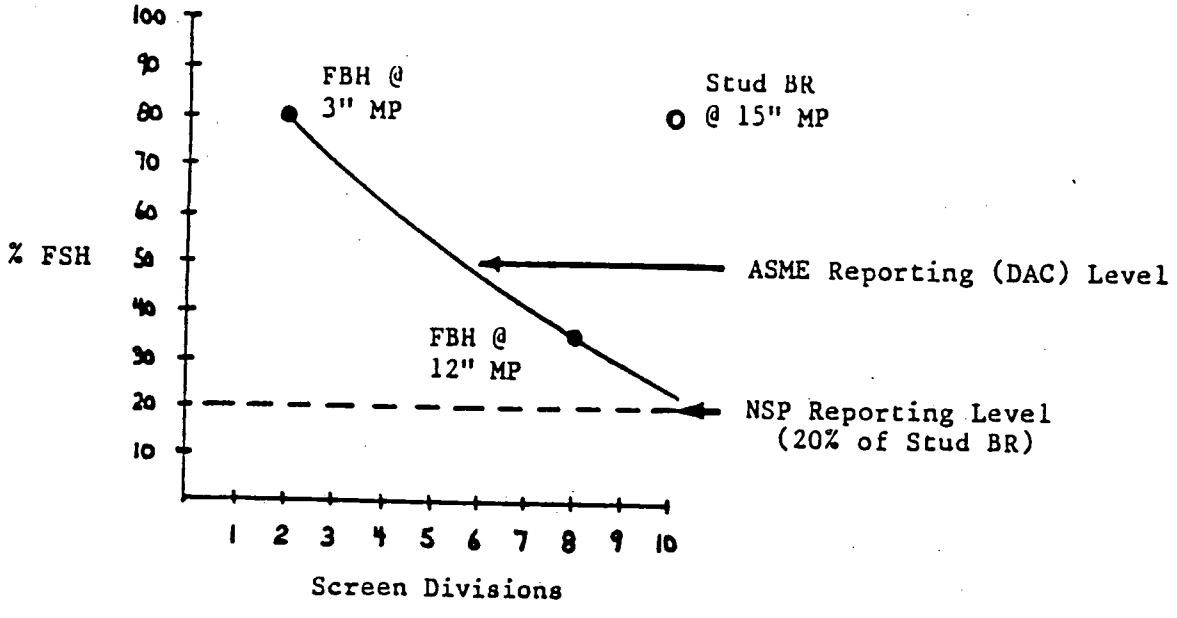
A qualification program was initiated in response to similar questions concerning this item in our original Prairie Island Inservice Inspection submittal. During the qualification test it was demonstrated that the NSP-UT-4 procedure, which utilizes a back reflection technique for flaw evaluation, was a more sensitive examination than the technique specified in ASME Section V, Article 5, Paragraph T-252.2. The results indicated that at the same

nominal metal path, the NSP procedure was approximately 6db more sensitive than the ASME technique (See Figure 1). In addition to the percent-of-DAC reporting level, the NSP procedure dictates that any reflector, regardless of amplitude, which is accompanied by a 50% loss of back wall reflection must be reported/evaluated. As poorer end reflecting surfaces are encountered, the NSP procedure tends to become a much more conservative approach to bolt and stud examination.

Figure 1

Qualification Program Results:

ASME V vs NSP Procedure



Request H

Relief Requests 30, 31, and 49 are considered generic in nature. For example, Relief Request 30 states:

> "The test pressure requirements of IWA-5000, IWB-5000, IWC-5000, and IWD-5000 will not be met on certain components.

The code does not recognize that non-isolable junctions of components with different design pressures or different ASME

Classes exist (i.e., pump suction and discharge lines, piping upstream and downstream of restricting orifices, etc.). Pressurizing components to the requirements of the code may result in overpressurizing the non-isolable components.

Where these junctions exist, test pressure will be based on the component with the lowest test pressure requirement."

The Licensee should provide explicit information for each of Relief Requests 30, 31, and 49 so that the relief requests can be evaluated. This information should include, but not be limited to:

(1) a list of the lines and boundaries of the portions of those lines for which relief is being requested;

(2) specific P&ID drawings with the applicable portion of the piping for which relief is requested identified on the drawing;

(3) a discussion of the condition and configuration which precludes the performance of the Code-required pressure test; and

(4) a discussion of the operating, design, Code-required, and proposed alternative test pressures for the portion of piping for which relief is requested and the adjacent piping from which it cannot be isolated.

Response H

Relief Request 30: Review of the Code requirements and the piping systems which they applied to identified only two lines where meeting the Code requirements was questionable. Lines TW7-10"-GE and TW11-10"-GE from pumps P-208A and P-208B to check valves CS-9-1 and CS-9-2 shown on P&ID M-122 are of concern. The suction piping to the pump is designed for 70 psig and has no relief valves. The discharge piping is designed to 303 psig and does have a relief valve. When a hydrostatic test is required, the test pressure would be 1.10 times the set pressure of the relief valve on the discharge piping per IWC-5222(a). Since there is no isolation of the high and low pressure piping at the pump, these sections of piping can not be pressurized to the required pressure as the suction piping would be over-pressurized. Alternative test pressure would be 1.10 times the design pressure of the suction piping (design temperature for the piping is 180 degrees F).

Relief Request 31: Review of the Code requirements (IWC-1220(c)) indicates that this relief request is not necessary. All of the lines of concern are less than 4 inch nominal pipe size and therefore would be exempt from the requirements of IWC-2500 and IWC-5200.

Relief Request 49: The lines of concern are SW13-4"-HF and SW25-4"-HF shown on P&IDs M-112 and M-811 (buried portions are indicated by arrows). IWA-5244(a) allows for a leakage test that determines the rate of pressure loss. Instead of determining the rate of pressure loss Monticello's test would measure the amount of water required to maintain the system at the required test pressure. The test would provide the leakage rate results in gallons per minute and maintain the piping at the required test pressure for the required test duration. The Code required test would provide leakage rate results in PSI per minute (which would have to be converted to GPM), and it may not be possible to start at a high enough test pressure to stay above the required test pressure for the required test duration even with acceptable leakage rates.

MONTICELLO NUCLEAR GENERATING PLANT
ULTRASONIC CALIBRATION BLOCKS

NSP NO.	TAB	SIZE	HEAT OR (PO) NUMBER	MATERIAL	SCHEDULE
RPV#1	A	5-5/16"+CLAD	C2220/1	A533 B CL. 1	-- ---
RPV#3	B	3.66"+CLAD	C9220	A533 B CL. 1	-- ---
1	C	3"	L44580	A106 B C/S	80 .300"
2	D	3.875"x3/4"	(155-44097)	304 S/S	-- ---
3	E	1-1/2"THK BLK	(155)	304 S/S	-- ---
4	F	4"	L42009	A106 B C/S	80 .337"
5	F	8"	N53114	A106 B C/S	80 .500"
6	G	6"	(401N-1726)	A53 B C/S	80 .432"
7	H	14"	62144	A106 B C/S	80 .750"
8	H	18"	(122491)	A106 B C/S	80 .937"
9	I	13-1/2"x3/4"	(164N44814)	304 S/S	-- ---
10	J	16"	N36809	A106 B C/S	80 .843"
11	K	8"	15885	304 S/S	80 .500"
12-1	L	4"	7-73280	304 S/S	80 .337"
12-2	L	4"	7-73280	304 S/S	80 .337"
13	M	3.426"x.530"	(155-44097)	304 S/S	-- ---
14	N	6" DIA STUD X 51-7/8"	15045	B4340 C/S	-- ---
15	O	3"	03052	304 S/S	80 .300"
16	P	2"	L25269	A106 B C/S	80 .218"
17	Q	2"	A-4272	A312 S/S	80 .218"
18	R	3"	01598	A312 S/S	160 .438"
19	S	3"	T08300	A106 B C/S	160 .438"
20	T	6"	AE938	A312 S/S	80 .432"
21	U	8"	L20632	A106 B C/S	100 .593"
22	V	12"	6S8905	304 S/S	80 .688"
23	W	14"	7137	A106 B C/S	100 .937"
24	X	16"	27DH136	304 S/S	80 .843"
25	X	18"	27DH136	304 S/S	80 .937"
26	Y	22"	10093	304 S/S	80 1.125"
27	Y	28"	10093	304 S/S	80 1.187"
28	Z	10"	N35898	A106 B C/S	80 .593"
29	A1	12"	L24489	A106 B C/S	80 .687"
30	B1	5-5/16"	C5571	A533 B C/S	-- ---
31	C1	16"	L80611	A106 B C/S	30 .375"
32	D1	10"	8024	A106 B C/S	40 .365"
33	E1	8"	L62508	A106 B C/S	40 .322"
34	F1	5"	N72615	A106 B C/S	80 .375"
35	G1	6"	27940	A106 B C/S	80 .432"
36	H1	10"x13.43"	BGM	B166 INCONEL	80 .491" .875"
37	I1	24"	L00543	A234 GR. WPB	-- .500"
38	J1	20"	N94046	A106 B C/S	20 .375"
39	K1	18"	N15689	A106 B C/S	STD .375"
40	L1	16"	N92599	A106 B C/S	30 .375"
41	M1	14"	L02777	A106 B C/S	30 .375"
42	N1	12"	L85468	A106 B C/S	STD .375"
43	O1	12"	L81058	A106 B C/S	100 .844"
44	Q1	6"	160367	A106 B C/S	40 .280"
45	R1	9" OD	CMB	A182 GR. F 304 S/S	-- 1.6195"

MONTICELLO NUCLEAR GENERATING PLANT
ULTRASONIC CALIBRATION BLOCKS

NSP NO.	TAB	SIZE	HEAT OR (PO) NUMBER	MATERIAL	SCHEDULE
46	S1	6.375" OD	CMB	A182 GR. F	-- 1.2745"
47	T1	3" OD	CMB	A336 CL. F8	-- .530"
48	U1	3.75" OD	CMB	A336 CL. F8	-- .875"
49	V1	4.5" OD	CMB	A336 CL. F8	-- .275"
50	W1	5.6" OD	CMB	A336 CL. F8	-- .875"
51	A2	4'	--	A515 GR. 70	-- .875"
52	B2	JET PUMP BEAM	(401-W3132)	A461 GR. 688	-- ---
53	C2	10"	59477	A333 GR. 6	80 .594"
54	D2	12"	722248	A350 GR. LF-2	-- .640"
55	E2	8"	CEO/CLL	SA182 B166	-- ---
56	F2	12"	31634	304 S/S	-- .591"
57	G2	24"	12564	304 S/S	-- 1.027"
58	H2	4"	98307	A106 B C/S	80 .337"
59	I2	8"	CMC ACY	A105 C/S	160 .906"
60	J2	22" OVERLAY	10093	304 S/S	80+OVERLAY
61	J2	12" OVERLAY	6S8905	304 S/S	80+OVERLAY
62	K2	22"	13549	316 S/S	-- .919"
63	L2	28"	32681	316 S/S	-- 1.096"
64	M2	12"	32657	316 S/S	80 .688"
65	N2	16"	13549	316 S/S	-- .681"
66	O2	28"	13515	316 S/S	-- 2.250"
67	P2	18"	13549	316 S/S	60 .750"
68	Q2	2" PLATE (N2)	4420051	C/S	-- 2.000"
69	R2	1" PLATE (N2)	50958	C/S	-- 1.000"
70	S2	12" SAFE-END	626390	316 S/S	-- ---
71	T2	28" SAFE-END		316 S/S	-- ---
72	U2	6" JPI	82661	A182 F316L	-- .875"
73	V2	SBLC	A13719	A479 316L	-- ---
73A	V2	SBLC	A13719	A479 316L	-- ---
74A	W2	1"		316L	80 .179"
74B	W2	1"		316L	80 .179"
74C	W2	1"		316L	80 .179"
	X2	VALVE WALL, BLOCKS (3)	1644E	SA351-CF8	-- 2.000"
			1615E	SA216-WCB	-- 2.000"
			I1328	SA351-CF8M	-- 2.000"
75		14" Core Spray		A508-CL1	-- .625"
76		8" HPCI Venturi			

Attachment 3

NON-SECTION XI
AUGMENTED EXAMINATIONS

SYSTEM IDENTIFICATION	COMPONENT	NDE METHOD	EXAMINATION FREQUENCY	REASON FOR EXAMINATION
CORE SPRAY	SPARGERS & PIPING	VISUAL	EACH OUTAGE	IE BULLETIN 80-13
FEEDWATER	SPARGERS	VISUAL	EVERY OTHER OUTAGE	NRC LETTER DATED 11-3-81
B3.90	NOZZLE BORE N4A N4B N4C N4D	UT	2 NOZZLES PER OUTAGE	NUREG 0619
B3.100	NOZZLE RADIUS N4A N4B N4C N4D	UT	2 NOZZLES PER OUTAGE	NUREG 0619
B6.50 B6.10	WASHERS & NUTS	VT&MT	EACH OUTAGE	SHOWING SIGNS OF CORROSION & PITTING
	JET PUMP HOLD DOWN BEAMS	UT VT	ONCE IN 10 YRS EACH OUTAGE	NUREG CR-3052
	JET PUMP SEN. LINE SUPPORT BRACKET OUTER	VT	EACH OUTAGE	GE SIL 420
CONTROL ROD DRIVE ISI-51	W-7	UT PT	EACH OUTAGE	NUREG 0619
	W-11	UT PT	EACH OUTAGE	NUREG 0619
	W-12	UT PT	EACH OUTAGE	NUREG 0619
	W-13	UT PT	EACH OUTAGE	NUREG 0619
	W-14	UT PT	EACH OUTAGE	NUREG 0619

Attachment 3

NON-SECTION XI
AUGMENTED EXAMINATIONS

SYSTEM IDENTIFICATION	COMPONENT	NDE METHOD	EXAMINATION FREQUENCY	REASON FOR EXAMINATION
FEEDWATER TO	W-1	UT	EACH OUTAGE	DESIGN CHANGE
RWCU TO		MT		79Z018
HPCI	W-2	UT	EACH OUTAGE	79Z018
ISI-37		MT		
	W-3	UT	EACH OUTAGE	79Z018
		MT		
	W-4	UT	EACH OUTAGE	79Z018
		MT		
	W-12	UT	EACH OUTAGE	79Z018
		MT		
	W-12A	UT	EACH OUTAGE	79Z018
		MT		
STANDBY LIQUID	INTERNAL	VT	ONCE IN TEN	SAFETY AUDIT
CONTROL TANK	SURFACES,	VT	YEAR PERIOD	COMMITTEE
	& WELDS	VT		
	HEATER	PT		
	NOZZLE			
	NOZZLE N6	PT		
	NOZZLE N4	PT		
	WELDS	PT		
	BOTTOM	PT		
	LONG SEAM			
	ATTACHMENTS	PT		