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Constellation Energy Group

Nine Mile Point
Nuclear Station

March 6, 2003
NMP1L 1716

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

SUBJECT: Nine Mile Point Unit Nos. 1 and 2
Docket Nos. 50-220 and 50-410
Facility Operating License Nos. DPR-63 and NPF-69

Inservice Inspection Relief Requests Regarding Inner Radius Examination of Class 1 Reactor Pressure Vessel Nozzles
TAC Nos. MB7722 and MB7723

Gentlemen:

Pursuant to 10 CFR 50.55a(a)(3)(i), Nine Mile Point Nuclear Station, LLC (NMPNS) hereby requests approval of an alternative to certain inservice inspection requirements of the 1989 Edition (no Addenda) of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, for Nine Mile Point Units 1 and 2 (NMP1 and NMP2). The description and justification for this request are provided in the enclosed inservice inspection relief requests ISI-21A-1 for NMP1 (Enclosure 1) and ISI-21B-1 for NMP2 (Enclosure 2).

NMPNS is requesting an alternative to the ASME Code, Section XI requirements to perform a volumetric examination of the inner radius of reactor pressure vessel (RPV) nozzles welded with full penetration welds. In lieu of volumetric examination, the relief requests propose performance of a visual examination for RPV nozzles where the plant configuration allows visual examination on essentially 100 percent of the nozzle inner radius. This proposed alternative is being requested in accordance with 10 CFR 50.55a(a)(3)(i) on the basis that it provides an acceptable level of quality and safety.

Similar requests have previously been approved for the Detroit Edison Company's Fermi Unit 2 by NRC letter dated October 5, 2001 (TAC No. MB2166), and for the Tennessee Valley Authority's Browns Ferry Nuclear Plant Unit 2 by NRC letter dated October 7, 2002 (TAC No. MB4880).

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NMPNS requests NRC approval of relief requests ISI-21A-1 and ISI-21B-1 by September 12, 2003, to support development of the NMP2 inservice inspection plans for refueling outage number 9, scheduled for the Spring of 2004.

Very truly yours,

Bruce S. Montgomery
Manager Engineering Services

BSM/DEV/jm
Enclosures:
1. NMP1 Relief Request ISI-21A-1
2. NMP2 Relief Request ISI-21B-1

cc: Mr. H.J. Miller, NRC Regional Administrator, Region I
Mr. G.K. Hunegs, NRC Senior Resident Inspector
Mr. P.S. Tam, Senior Project Manager, NRR (2 copies)

ENCLOSURE 1

Nine Mile Point Unit 1
Third Inservice Inspection Interval
Relief Request ISI-21A-1

NINE MILE POINT UNIT 1
THIRD INSERVICE INSPECTION INTERVAL
RELIEF REQUEST ISI-21A-1

A. COMPONENT IDENTIFICATION

System: Reactor Pressure Vessel

Class: Quality Group A, ASME Code Class 1

Component Description: Reactor Pressure Vessel (RPV) Nozzle Inner Radius Sections

ASME Section XI, Table IWB-2500-1, Examination Category B-D, Full Penetration Welds of Nozzles in Vessels - Inspection Program B			
EXAM ITEM NUMBER	**SYSTEM IDENTIFICATION**	**NOZZLE DESCRIPTION**	**NUMBER OF NOZZLES**
B3 100	01.0 - Main Steam System	Outlet Nozzles	2
	32 0 - Reactor Recirculation System	Loop Suction (Outlet) Nozzles	5
	36 0 - RPV Closure Head	Safety Valve Nozzles	18
	37.0 - Reactor Head Vent	Vent Nozzle	1

B. ASME SECTION XI EXAMINATION REQUIREMENTS

ASME Section XI, 1989 Edition, No Addenda, Table IWB-2500-1 for Examination Category B-D, requires a volumetric examination of nozzle inner radius section of all Reactor Pressure Vessel Nozzles welded with full penetration welds as shown in Figures IWB-2500-7(a) through (d).

C. RELIEF REQUESTED

Pursuant to 10 CFR 50.55a(a)(3)(i), Nine Mile Point Nuclear Station, LLC (NMPNS) requests relief from the ASME Section XI requirements to perform volumetric examinations as described in Section B above for the individual nozzle inner radius sections identified on Attachment 1 to this request.

D. BASIS FOR RELIEF

All nozzle forgings were nondestructively examined during fabrication and have previously been examined using inservice ultrasonic examination techniques specific to each nozzle configuration. No indication of fabrication defects or service related cracking has been detected by these examinations. Attachment 1 provides the date of the last ultrasonic examination for each nozzle included within this request.

Nozzle inner radius examinations are the only non-welded areas requiring examination on the RPV. This requirement was deterministically made early in the development of the ASME Section XI Code, and applied to 100% of nozzles welded with full penetration welds.

Fatigue cracking is the only applicable degradation mechanism for the nozzle inner radius region. For all nozzles other than Feedwater, there is no significant thermal cycling during operation. Therefore, from a risk perspective there is no need to perform volumetric examination on any nozzles other than Feedwater and operational Control Rod Drive (CRD) returns. No service related cracking has ever been discovered in any Boiling Water Reactor (BWR) fleet plant nozzles other than on Feedwater or operational CRD returns.

The four (4) Feedwater nozzle inner radius sections will continue to be examined with ultrasonic techniques developed and qualified in accordance with GE-NE-523-A71-0594-A, Revision 1, approved by the NRC under TAC No. MA6787.

NMPNS is proposing to implement a visual examination alternative similar to the inspection alternative proposed in ASME Section XI Code Case N-648-1. The visual examination will cover the same examination surface as specified for the volumetric examination.

NMPNS believes that application of a visual examination alternative for the listed nozzle inner radius regions ensures an acceptable level of quality and safety. Performing a visual examination has the additional benefit of reducing personnel radiation exposure, consistent with the site ALARA program.

E. ALTERNATIVE EXAMINATIONS

As an alternate to the volumetric examination requirements defined in Section B above, NMPNS proposes to perform a visual examination, to include essentially 100% of the surface M-N as shown in Figures IWB-2500-7(a) through (d) in lieu of the volumetric examination required by Table IWB-2500-1, Examination Category B-D, Item B3.100, of Inspection Program "B", for inservice examination of reactor vessel nozzle inner radius sections listed on Attachment 1.

NMPNS proposes the direct visual (VT-1) type examination of the RPV Closure Head Safety Relief Valve (N7A thru N7L) and the RPV Head Vent (N8) nozzle inner radius sections. For the direct visual examinations, the resolution sensitivity will be established using a 1-mil (.001 inch) wire standard, or equivalent for the detection of cracking.

For the remaining nozzle inner radius sections, NMPNS proposes using the remote visual examination Enhanced VT-1 (i.e, EVT-1) type examinations of the Main Steam Outlet (N3A and N3B) and Reactor Recirculation Outlet (N1A thru N1E) nozzle inner radius sections as described in the Electric Power Research Institute (EPRI) Technical Report entitled "TR-105696-R4 (BWRVIP-03) Revision 4: BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines." The resolution sensitivity for remote in-vessel examinations will be established using the one half (1 / 2) mil wire standard as described in that report.

If crack-like surface flaws are detected by visual examination, the flaws will be characterized in accordance with Table IWB-3512-1. When applying Table IWB-3512-1 criteria, the crack depth will be assumed to be equal to one-half the measured crack length. Flaws exceeding the acceptance criteria of Table IWB-3512-1 are unacceptable for continued service unless the reactor vessel meets the requirements of IWB-3142.2, IWB-3142.3 or IWB-3142.4.

F. IMPLEMENTATION SCHEDULE

Relief is requested for the remainder of the Third Ten-Year Inservice Inspection Interval (12/26/99 - 12/25/09).

G. ATTACHMENTS

Attachment 1 List of Applicable RPV Nozzle Inner Radius Sections

NINE MILE POINT UNIT 1
THIRD INSERVICE INSPECTION INTERVAL
RELIEF REQUEST ISI-21A-1

ATTACHMENT 1 LIST OF APPLICABLE RPV NOZZLE INNER RADIUS SECTIONS							
NOZZLE DESIGNATION	REACTOR VESSEL NOZZLE DESCRIPTION	RPV NOZZLE INNER RADIUS EXAMINATION IDENTIFICATION NUMBER	SIZE	LAST UT EXAM	UT COVERAGE	ESTIMATED VISUAL COVERAGE	VISUAL LIMITATIONS
N3A	01.0 Main Steam Nozzle	01-WD-001-IR	24.0"	12/88	74%	100%	None
N3B	01.0 Main Steam Nozzle	01-WD-033-IR	24 0"	05/99	100%	100%	None
N1A	32.0 Reactor Recirculation Loop Outlet Nozzle	32-WD-001-IR	28.0"	03/95	95%	100%	None
N1B	32.0 Reactor Recirculation Loop Outlet Nozzle	32-WD-044-IR	28 0"	04/99	100%	100%	None
N1C	32 0 Reactor Recirculation Loop Outlet Nozzle	32-WD-084-IR	28 0"	04/99	100%	100%	None
N1D	32 0 Reactor Recirculation Loop Outlet Nozzle	32-WD-124-IR	28 0"	04/99	100%	100%	None
N1E	32.0 Reactor Recirculation Loop Outlet Nozzle	32-WD-166-IR	28 0"	03/95	95%	100%	None
N7A	36 0 ¹ Reactor Vessel Head Safety Valve Nozzle	36-WD-012-IR	6.0"	03/01	90 2%	100%	None
N7B	36.0 ¹ Reactor Vessel Head Safety Valve Nozzle	36-WD-014-IR	6 0"	03/01	90 2%	100%	None
N7C	36 0 ¹ Reactor Vessel Head Safety Valve Nozzle	36-WD-016-IR	6.0"	03/01	90 2%	100%	None
N7D	36 0 ¹ Reactor Vessel Head Safety Valve Nozzle	36-WD-018-IR	6 0"	03/01	90.2%	100%	None
N7E	36 0 ¹ Reactor Vessel Head Blind Flange Nozzle	36-WD-020-IR	6 0"	03/01	90 2%	100%	None
N7F	36 0 ¹ Reactor Vessel Head Safety Valve Nozzle	36-WD-022-IR	6 0"	11/88	64%	100%	None
N7G	36.0 ¹ Reactor Vessel Head Safety Valve Nozzle	36-WD-024-IR	6 0"	03/97	100%	100%	None
N7H	36 0 ¹ Reactor Vessel Head Safety Valve Nozzle	36-WD-026-IR	6 0"	06/88	64%	100%	None

NINE MILE POINT UNIT 1
THIRD INSERVICE INSPECTION INTERVAL
RELIEF REQUEST ISI-21A-1

ATTACHMENT 1 LIST OF APPLICABLE RPV NOZZLE INNER RADIUS SECTIONS							
NOZZLE DESIGNATION	REACTOR VESSEL NOZZLE DESCRIPTION	RPV NOZZLE INNER RADIUS EXAMINATION IDENTIFICATION NUMBER	SIZE	LAST UT EXAM	UT COVERAGE	ESTIMATED VISUAL COVERAGE	VISUAL LIMITATIONS
N7J	36 0 [1] Reactor Vessel Head Safety Valve Nozzle	36-WD-028-IR	6 0"	03/97	100%	100%	None
N7K	36.0 [1] Reactor Vessel Head Blind Flange Nozzle	36-WD-030-IR	6 0"	03/97	100%	100%	None
N7L	36 0 [1] Reactor Vessel Head Blind Flange Nozzle	36-WD-1073-IR	6 0"	03/97	100%	100%	None
N7M	36 0 [1] Reactor Vessel Head Safety Valve Nozzle	36-WD-032-IR	6 0"	03/97	100%	100%	None
N7N	36 0 [1] Reactor Vessel Head Blind Flange Nozzle	36-WD-034-IR	6 0"	03/97	100%	100%	None
N7P	36 0 [1] Reactor Vessel Head Blind Flange Nozzle	36-WD-036-IR	6.0"	03/97	100%	100%	None
N7R	36 0 [1] Reactor Vessel Head Blind Flange Nozzle	36-WD-038-IR	6.0"	03/97	100%	100%	None
N7S	36.0 [1] Reactor Vessel Head Blind Flange Nozzle	36-WD-040-IR	6 0"	03/97	100%	100%	None
N7T	36 0 [1] Reactor Vessel Head Blind Flange Nozzle	36-WD-042-IR	6.0"	03/97	100%	100%	None
N7U	36.0 [1] Reactor Vessel Head Blind Flange Nozzle	36-WD-044-IR	6 0"	03/97	100%	100%	None
N8	37.0 [1] Reactor Head Vent Nozzle	37-WD-001-IR	4 0"	03/97	100%	100%	None

1. There are a total of nineteen (19) Closure Head Nozzles Five (5) of the nineteen (19) nozzle inner radius sections were examined by the volumetric (ultrasonic) examination method during refueling outage sixteen (RFO-16), in the First Inservice Inspection Period. The remaining fourteen (14) nozzle inner radius sections are scheduled for completion in the Second and Third Inservice Inspection periods and are included within this request for relief as identified above.

ENCLOSURE 2

Nine Mile Point Unit 2
Second Inservice Inspection Interval
Relief Request ISI-21B-1

NINE MILE POINT UNIT 2
SECOND INSERVICE INSPECTION INTERVAL
RELIEF REQUEST ISI-21B-1

A. COMPONENT IDENTIFICATION

System: Reactor Pressure Vessel

Class: ASME Code Class 1

Component Description: Reactor Pressure Vessel (RPV) Nozzle Inner Radius Sections

ASME Section XI, Table IWB-2500-1, Examination Category B-D, Full Penetration Welds of Nozzles in Vessels - Inspection Program B			
EXAM ITEM NUMBER	**NOZZLE IDENTIFICATION**	**NOZZLE DESCRIPTION**	**NUMBER OF NOZZLES**
B3.100	N1 - Reactor Recirculation	Outlet Nozzles	2
	N3 - Main Steam	Outlet Nozzles	4
	N7 - Closure Head	RCIC Spray Nozzle	1
	N8 - Reactor Head Vent	Vent Nozzle	1
	N18 - Closure Head	Spare Nozzle	1

B. ASME SECTION XI EXAMINATION REQUIREMENTS

ASME Section XI, 1989 Edition, No Addenda, Table IWB-2500-1 for Examination Category B-D, requires a volumetric examination of nozzle inner radius section of all Reactor Pressure Vessel nozzles welded with full penetration welds as shown in Figures IWB-2500-7(a) through (d).

C. RELIEF REQUESTED

Pursuant to 10 CFR 50.55a(a)(3)(i), Nine Mile Point Nuclear Station, LLC (NMPNS) requests relief from the ASME Section XI requirements to perform volumetric examinations as described in Section B above for the individual nozzle inner radius sections identified on Attachment 1 to this request.

D. BASIS FOR RELIEF

All nozzle forgings were nondestructively examined during fabrication and have previously been examined using inservice ultrasonic examination techniques specific to each nozzle configuration. No indication of fabrication defects or service related cracking has been detected by these examinations. Attachment 1 provides the date of the last ultrasonic examination for each nozzle included within this request.

Nozzle inner radius examinations are the only non-welded areas requiring examination on the RPV. This requirement was deterministically made early in the development of the ASME Section XI Code, and applied to 100% of nozzles welded with full penetration welds.

Fatigue cracking is the only applicable degradation mechanism for the nozzle inner radius region. For all nozzles other than Feedwater, there is no significant thermal cycling during operation. Therefore, from a risk perspective there is no need to perform volumetric examination on any nozzles other than Feedwater and operational Control Rod Drive (CRD) returns. No service related cracking has ever been discovered in any Boiling Water Reactor (BWR) fleet plant nozzles other than on Feedwater or operational CRD returns.

NMPNS is proposing to implement a visual examination alternative similar to the inspection alternative proposed in ASME Section XI Code Case N-648-1. The visual examination will cover the same examination surface as specified for the volumetric examination.

NMPNS believes that application of a visual examination alternative for the listed nozzle inner radius regions ensures an acceptable level of quality and safety. Performing a visual examination has the additional benefit of reducing personnel radiation exposure, consistent with the site ALARA program.

E. ALTERNATIVE EXAMINATIONS

As an alternate to the volumetric examination requirements defined in Section B above, NMPNS proposes to perform a visual examination, to include essentially 100% of the surface M-N as shown in Figures IWB-2500-7(a) through (d) in lieu of the volumetric examination required by Table IWB-2500-1, Examination Category B-D, Item B3.100, of Inspection Program "B", for inservice examination of reactor vessel nozzle inner radius sections listed in Attachment 1.

NMPNS proposes the direct visual (VT-1) type examination of the RPV Closure Head RCIC Spray (N7), Closure Head Vent (N8) and Closure Head Spare (N18) nozzle inner radius sections. For the direct visual examinations, the resolution sensitivity will be established using a 1-mil (.001 inch) wire standard, or equivalent for the detection of cracking.

For the remaining nozzle inner radius sections, NMPNS proposes using the remote visual examination Enhanced VT-1 (i.e., EVT-1) type examinations of the Main Steam Outlet (N3A thru N3D) and Reactor Recirculation Outlet (N1A and N1B) nozzle inner radius sections as described in the Electric Power Research Institute (EPRI) Technical Report entitled "TR-105696-R4 (BWRVIP-03) Revision 4: BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines." The resolution sensitivity for remote in-vessel examinations will be established using the one half (1 / 2) mil wire standard as described in that report.

If crack-like surface flaws are detected by visual examination, the flaws will be characterized in accordance with Table IWB-3512-1. When applying Table IWB-3512-1 criteria, the crack depth will be assumed to be equal to one-half the measured crack length. Flaws exceeding the acceptance criteria of Table IWB-3512-1 are unacceptable for continued service unless the reactor vessel meets the requirements of IWB-3142.2, IWB-3142.3 or IWB-3142.4.

F. IMPLEMENTATION SCHEDULE

Relief is requested for the remainder of the Second Ten-Year Inservice Inspection Interval (04/05/98 - 04/04/08).

G. ATTACHMENTS

Attachment 1 List of Applicable RPV Nozzle Inner Radius Sections

NINE MILE POINT UNIT 2
SECOND INSERVICE INSPECTION INTERVAL
RELIEF REQUEST ISI-21B-1

ATTACHMENT 1
LIST OF APPLICABLE RPV NOZZLE INNER RADIUS SECTIONS

NOZZLE DESIGNATION	REACTOR VESSEL NOZZLE DESCRIPTION	RPV NOZZLE INNER RADIUS EXAMINATION IDENTIFICATION NUMBER	SIZE	LAST UT EXAM	UT COVERAGE	ESTIMATED VISUAL COVERAGE	VISUAL LIMITATIONS
N1A	Reactor Recirculation Outlet Nozzle	2RPV-ACC	24.0"	3/92	100%	100%	None
N1B	Reactor Recirculation Outlet Nozzle	2RPV-ACF	24.0"	3/92	100%	100%	None
N3A	Main Steam Outlet Nozzle	2RPV-ACR	26 0"	5/98	100%	100%	None
N3B	Main Steam Outlet Nozzle	2RPV-ACU	26.0"	3/02	100%	100%	None
N3C	Main Steam Outlet Nozzle	2RPV-ACY	26 0"	4/95	100%	100%	None
N3D	Main Steam Outlet Nozzle	2RPV-AEB	26 0"	4/95	100%	100%	None
N7	Closure Head RCIC Spray Nozzle	2RPV-AFX	6 0"	5/95	85%	100%	None
N8	Closure Head Vent Nozzle	2RPV-AGA	4.0"	11/93	100%	100%	None
N18	Closure Head Spare Nozzle	2RPV-AGS	6 0"	10/96	85%	100%	None