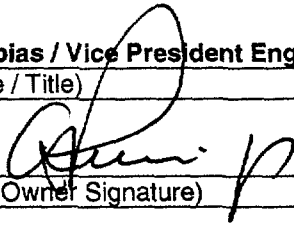
	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 1 OF 22	
VT-1 EXAMINATION				

Title: **VT-1 EXAMINATION**

Procedure Owner:	Oscar Limpias / Vice President Engineering	
	(Print Name / Title)	
Approved:		2/13/06
	(Procedure Owner Signature)	(Date)

Effective Date	EN Common	<input type="checkbox"/>		Effective Date Exception	ANO		PNPS	
	ENN	<input checked="" type="checkbox"/>	3/1/06		ECH		RBS	
	ENS	<input type="checkbox"/>			GGNS		VY	
					IPEC		W3	
					JAF		WPO	

Procedure Contains NMM REFLIB Forms: YES NO

Basis Statement

- ENN-NDE-10.01 Revision 2 includes:
 - Editorial change correcting section 9.0 attachment references from VT-3 to VT-1.

Site and NMM Procedures Canceled or Superseded By This Revision

ENN-NDE-10.01 Revision 1


Process Applicability Exclusion (ENN-LI-100) / Programmatic Exclusion (ENS-LI-101)

All Sites: Specific Sites: ANO GGNS IPEC JAF PNPS RBS VY W3

120

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
1.0	PURPOSE.....	3
2.0	REFERENCES.....	3
3.0	DEFINITIONS	4
4.0	RESPONSIBILITIES	4
5.0	DETAILS	4
6.0	INTERFACES	14
7.0	RECORDS	14
8.0	OBLIGATION AND REGULATORY COMMITMENT CROSS-REFERENCES	15
9.0	ATTACHMENTS	17
	ATTACHMENT 9.1 VT-1 EXAMINATION REPORT (BOLTING).....	18
	ATTACHMENT 9.2 VT-1 EXAMINATION REPORT (INTEGRAL ATTACHMENT WELDS)	19
	ATTACHMENT 9.3 VT-1 EXAMINATION REPORT (NOZZLE INNER RADIUS)	20
	ATTACHMENT 9.4 VT-1 EXAMINATION REPORT (CONTAINMENT SURFACES)	21
	ATTACHMENT 9.5 VT-1 EXAMINATION REPORT (CONCRETE SURFACES)	22


	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 3 OF 22	
VT-1 EXAMINATION				

1.0 PURPOSE

- [1] This procedure establishes the methods and requirements to be used for ASME Section XI VT-1 examination of components.
- [2] VT-1 examinations are conducted to detect discontinuities and imperfections on the surfaces of components, including such conditions as cracks, wear, corrosion, erosion, or physical damage.
- [3] IWE and IWL detailed visual examinations will be performed per VT-1 requirements to assess the condition of surfaces requiring augmented examinations and determine the magnitude and extent of any deterioration and distress of these surfaces.
- [4] This procedure is not applicable to VT-1 examinations performed per the Invesel Visual Inspection (IVVI) BWR VIP program.

2.0 REFERENCES

- [1] Nuclear Regulatory Commission, 10 CFR Part 50, Industry Codes and Standards.
- [2] ASME Boiler & Pressure Vessel Code, Section XI, 2001 Edition, including 2003 Addenda.
- [3] ASME Boiler & Pressure Vessel Code, Section V and XI, 1998 Edition with addenda through 2000.
- [4] ASME Boiler & Pressure Vessel Code, Section V and XI, 1992 Edition, including 1992 Addenda.
- [5] ASME Boiler & Pressure Vessel Code, Section XI, 1989 Edition no Addenda.
- [6] ASME Boiler and Pressure Vessel Code, Code Cases
- [7] ENN Site Specific Relief Requests, Reference Section 8.0
- [8] Regulatory Guide 1.147 "Inservice Inspection Code Case Acceptability"
- [9] ENN-NDE-1.00, Administrative Controls for Non-destructive Examination
- [10] ENN-NDE-2.12, Certification of Visual Testing (VT) Personnel.
- [11] ENN-NDE-10.02, VT-2 Examination
- [12] ENN-NDE-10.03, VT-3 Examination

	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 4 OF 22	
VT-1 EXAMINATION				

3.0 **DEFINITIONS**

- [1] Reference ASME Boiler and Pressure Vessel Code, Sections V, for the glossary of terms used in Nondestructive Examination (NDE).

4.0 **RESPONSIBILITIES**

4.1 SUPERVISOR

- [1] The Supervisor, charged with the responsibility for NDE at each site, is responsible for implementation of this procedure.

4.2 ENTERGY NDE LEVEL III

- [1] The Entergy Level III is responsible for development, interpretation and qualification of this procedure.
- [2] The Entergy Level III is responsible for demonstration of this procedure to the ANII when requested.

4.3 NDE PERSONNEL

- [1] Personnel performing examinations per this procedure shall be certified in accordance with a written certification program accepted by the site.
- [2] Level II or III personnel shall be responsible for the examination and interpretation of results.
- [3] Level I and trainee (Level IT) personnel may be used to assist in performing examinations. Final interpretation of collected data shall be the responsibility of the Level II or III examiners.


5.0 **DETAILS**

5.1 PRECAUTIONS AND LIMITATIONS


- [1] None

5.2 PROCEDURE DEMONSTRATION

- [1] Procedure demonstrations shall be documented and contain or reference the examination techniques required to meet the Code requirements in the following paragraphs.
- [2] JAF, IPEC / ASME Sections XI, 1989 Edition.
- (a) For procedural demonstration, the combination of access and lighting sufficient to resolve a 1/32" black line on an 18% neutral gray card may be used.

	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 5 OF 22	
VT-1 EXAMINATION				

- [3] JAF, IPEC - ASME Section XI Subsection IWE and IWL, 1992 Edition including 1992 Addenda; VY - 1998 Edition with Addenda through 2000.
- (a) For procedural demonstration, a near-distance vision test chart containing text with lower case characters without an ascender or descender meeting the requirements of ASME Section XI, IWA-2210 is required.
 - (b) Measurements of the of the near-distance test chart shall be made once before initial use with an optical comparator (10X or greater) or other suitable instrument, to verify that the height of a representative lower case character for the selected type size meets the requirements of Table IWA-2210-1.
 - (c) When performing remote visual examinations, the maximum direct examination distance specified in Table IWA-2210-1 may be extended and the minimum illumination requirements specified in Table IWA-2210-1 may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.
- [4] PNPS – ASME Section XI 2001 Edition through 2003 Addenda
- (a) For procedural demonstration, a test chart containing text with some lowercase characters, without an ascender or descender (e.g. a, c, e, o), that meets the requirements of Table IWA-2211-1 is required.
 - (b) Measurements of the test chart or card shall be made once before its initial use with an optical comparator (10x or greater) or other suitable instrument to verify that the height of the lowercase characters without an ascender or descender meets the specified requirements.
 - (c) Remote examination may be substituted for direct examination. The remote examination shall be demonstrated capable of resolving characters in accordance with Table IWA-2211-1. Additionally, the remote visual examination system shall be capable of distinguishing colors applicable to the component examinations be conducted.

	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 6 OF 22	
VT-1 EXAMINATION				

5.3 EQUIPMENT


[1] The following or additional equipment may be used as determined necessary by the examiner:

- (a) Flashlights / Drop Lights
- (b) Light Meter
- (c) Mirrors
- (d) Magnifying Lenses
- (e) Binoculars
- (f) Telescopes
- (g) Tape Measure / Six Inch Scales
- (h) Borescopes
- (i) Fiber Optics
- (j) Cameras


5.4 ACCESS AND ILLUMINATION (LIGHTING)

[1] Accessibility


- (a) JAF, IPEC - ASME Sections XI, 1989 Edition, no Addenda
 - (1) Direct visual examination shall be conducted when access is sufficient for the eye to be within 24" (610 mm) of the surface to be examined and at an angle of not less than 30° to the surface. Mirrors may be used to improve the angle of vision and/or accessibility in constricted areas.
 - (2) Remote visual examination may be substituted for direct examination. For all remote visual examinations, optical aids such as telescopes, borescopes, fiber optics, cameras, or other suitable instruments may be used provided such systems have a resolution capability at least equivalent to that attainable by direct visual examination.

	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 7 OF 22	
VT-1 EXAMINATION				

- (b) JAF, IPEC - ASME Section XI Subsection IWE and IWL, 1992 Edition including 1992 Addenda; VY - 1998 Edition with Addenda through 2000.
- (1) For direct examination, the maximum examination distance of two feet shall apply to the distance from the eye to the surface being examined at an angle not less than 30 degrees.
 - (2) Remote examination may be substituted for direct examination. The remote examination shall be demonstrated to resolve the selected test chart characters in Table IWA-2210-1.
 - a. Remote examinations may use visual aids such as telescopes, binoculars, fiber optics, and cameras.
 - b. The remote visual examination system shall have the capability of distinguishing and differentiating between colors applicable to the requirements for the component examinations being conducted.
- (c) PNPS – ASME Section XI 2001 Edition through 2003 Addenda
- (1) Direct visual examination distance requirements shall be as specified in Table IWA-2211-1.
 - (2) Remote visual examination may be substituted for direct examination. The remote examination shall be demonstrated capable of resolving characters in accordance with Table IWA-2211-1.
 - (3) The remote visual examination system shall be capable of distinguishing the colors applicable to the component examinations being conducted.
- [2] Illumination (Lighting)
- (a) Illumination may be achieved by natural or artificial means. Flashlights, drop lights, or industrial lighting may be used.
 - (b) JAF, IPEC - ASME Sections XI, 1989 Edition, no Addenda
 - (1) Lighting, natural or artificial shall be sufficient to resolve a 1/32" black line on an 18% neutral gray card or the finest line on a machinist scale.

	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 8 OF 22	
VT-1 EXAMINATION				

- (c) JAF, IPEC - ASME Section XI Subsection IWE and IWL, 1992 Edition including 1992 Addenda; VY - 1998 Edition with Addenda through 2000.
- (1) The illumination of light source shall be measured using a calibrated light meter or the lighting verified to be adequate in resolving the lower case test characters of an approved test chart or character card meeting the requirements of ASME Section XI, IWA-2210.
 - a. The minimum illumination of a light source when using a light meter shall be 50-ft candles for inspection.
 - b. The illumination levels from battery powered portable lights shall be checked before and after each examination or series of examinations not to exceed four hours between checks.
 - c. Measurement of the illumination level on each examination surface is not necessary when the same portable light source or similar installed lighting equipment is demonstrated to provide the specified illumination at the maximum distance.
- (d) PNPS – ASME Section XI 2001 Edition through 2003 Addenda
- (1) Resolution of the specified characters (0.044 in.) can be used in lieu of illumination measurement to verify illumination adequacy.
 - (2) Minimum illumination of a light source when using a light meter shall be 50 ft-candles for inspection.
 - (3) If illumination measurement is performed, it is not necessary to measure the illumination level on each examination surface when the same portable nonbattery-powered (e.g. drop light) or similar installed lighting equipment is demonstrated to provide the illumination specified at the maximum examination distance.
 - (4) When illumination measurement is performed during the examination and a battery-powered light is used, the adequacy of the illumination level shall be checked before and after each examination or series of examinations, not to exceed 4 hr between checks.
- (e) IP2 RR-9r1, 10r1 and IP3 RR-16 - Examination of Nozzle Inner Radius sections
- (1) All nozzles (except the pressurizer surge nozzle 25IR at IP3 and PZRS1&6 at IP2) shall be examined using a remote color video camera with resolution sensitivity capable of detecting a 1-mill width wire or crack. This enhanced VT-1 (EVT-1) is consistent with the requirements found in the latest version of 10CFR50.55a(b)(2)(xxi)(A).


	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 9 OF 22	
VT-1 EXAMINATION				

5.5 SURFACE PREPARATION

- [1] Visual examinations that require clean surfaces or decontamination for valid interpretation of results shall be preceded by appropriate cleaning processes.
- [2] Mechanical or chemical cleaning processes may be used, if required, to remove contaminants such as carbon, rust, scale, or coatings.
- [3] The presence of protective coatings, and general oxidation, unless flaking or thickness reduction has occurred, is acceptable for VT-1 examination of integral attachment welds.

5.6 EXAMINATION


- [1] All relevant conditions observed during an examination that may require supplemental examination, corrective measures, repair, replacement or analytical evaluation shall be identified.
 - (a) Relevant conditions do not include fabrication marks, scratches, surface abrasion, material roughness and any other conditions acceptable by material, design and manufacturing specifications.
- [2] Examination of Pressure Retaining Bolting
 - (a) General
 - (1) The VT-1 examination shall be conducted to detect discontinuities and imperfections such as cracks, wear, corrosion, or physical damage.
 - (2) Bolting may be examined in place under tension, when the connection is disassembled, or when bolting is removed. Code and Relief Request requirements for disassembly of connections should be identified by the work order.
 - (b) VT-1 Examination of bolting greater than 2" in diameter (Category B-G-1).
 - (1) Examine nuts, bushings, washers and flange surfaces.
 - a. Bushing and threads in base metal of flanges require examination only when the connections are disassembled. Bushings may be examined in place.
 - b. Flange surface examinations include 1-inch annular surface of the flange surrounding each stud.

	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 10 OF 22	
VT-1 EXAMINATION				


- (c) VT-1 Examination of bolting 2" and less in diameter (Category B-G-2).
 - (1) Examine bolts, studs, and nuts.
 - (2) CRD Flange Bolting (JAF RR-14).
 - a. The visual examination (VT-1) will be performed on all accessible surface areas of the bolts.
 - b. Augmented surface (Liquid Penetrant) examinations shall be performed on all areas of CRD bolting with relevant indications or suspect areas. New design bolting intended for reuse shall require a VT-1 and an augmented surface examination.

- (d) VT-1 Examination, Class MC Pressure Retaining Bolting (Category E-A, E-G)
 - (1) VT-1 Examination of Pressure Retaining Bolting is conducted to detect defects which may cause the bolted connections to violate leak-tightness or structural integrity.
 - a. Examination of bolted connections includes bolts, studs, nuts, bushings, washers, and threads in base material and flange ligaments between threaded stud holes.
 - b. Examination of bushings, threads, and ligaments in base material of flanges is required only when the connection is disassembled.

- (e) VT-1 Examination of pressure retaining bolting shall include the following attributes:
 - (1) Crack-like flaws
 - (2) Thread damage (deformed or sheared threads)
 - (3) Corrosion / Wear
 - (4) Physical damage (bending, twisting or deformation)
 - (5) Missing / Loose bolting
 - (6) Fractured bolts, studs or nuts
 - (7) Degradation of protective coating
 - (8) Evidence of coolant leakage near bolting

	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 11 OF 22	
VT-1 EXAMINATION				


- [3] Examination of Integral Attachment Welds (Category D-A and IP2 RCP integral welded attachments per RR-38).
- (a) Examine all surfaces of Integral Attachment Welds for evidence of the following:
- (1) Crack-like surface flaws.
 - (2) Structural degradation of the attachment welds.
- [4] Examination of Nozzle Inner Radius sections (IP2 RR-9r1, 10r1 and IP3 RR-16)
- (a) All nozzles (except the pressurizer surge nozzle 25IR at IP3 and PZRS1&6 at IP2) shall be examined using a remote color video camera with resolution sensitivity capable of detecting a 1-mill width wire or crack.
- (b) Examine all interior surfaces for evidence of the following:
- (1) Crack-like surface flaws.
 - (2) Structural degradation
- [5] Examination of Coated and Non Coated Containment Surfaces Requiring Augmented Examination (Category E-C)
- (a) Examination attributes for containment surfaces.
- (1) Examine all (visible) painted or coated containment surfaces for evidence of the following:
 - a. Flaking
 - b. Blistering
 - c. Peeling
 - d. Discoloration
 - e. Any other signs of distress
 - (2) Examine all (visible) non-coated containment surfaces for evidence of the following:
 - a. Cracking
 - b. Discoloration
 - c. Wear

	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 12 OF 22	
VT-1 EXAMINATION				

- d. Pitting
- e. Erosion / Corrosion
- f. Arc Strikes
- g. Gouges
- h. Surface Discontinuities
- i. Dents
- j. Any other signs of surface irregularities

[6] Examination of Concrete Surfaces


- (a) Visual examinations are conducted to determine concrete deterioration and distress for suspect areas detected by general or VT-3 examinations, and conditions (e.g., cracks, wear, or corrosion) of tendon anchorage and wires or strands.
- (b) Visual examination of concrete surfaces shall be examined for evidence of:
 - (1) Cracking / Checking
 - (2) Abrasion
 - (3) Blistering
 - (4) Delaminations
 - (5) Efflorescence
 - (6) Peeling
 - (7) Pitting
 - (8) Popouts
 - (9) Scaling
 - (10) Spalling
 - (11) Other signs of distress.

	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 13 OF 22	
VT-1 EXAMINATION				

5.7 **ACCEPTANCE CRITERIA**

What must be CR'd? Who decides?

- [1] Components whose visual examination confirms the absence of the relevant conditions described in the examination section of this procedure shall be considered acceptable for continued service.
- [2] Any relevant condition observed during an examination that may require supplemental examination, corrective measures, repair, replacement or analytical evaluation shall require engineering evaluation for continued service.
- [3] Pressure retaining bolting (B-G-1, B-G-2, E-A and E-G).
 - (a) Visual examinations detecting the following relevant conditions shall be considered unacceptable and processed in accordance with the site ISI or corrective action program.
 - (1) Crack-like flaws that exceed the allowable linear flaw standards of IWB-3515.
 - (2) More than one deformed or sheared thread in the zone of thread engagement of bolts, stud, or nuts.
 - (3) Localized general corrosion that reduces the bolt or stud cross-sectional area by more than 5%.
 - (4) Bending, twisting, or deformation of bolts or studs to the extent that assembly or disassembly is impaired.
 - (5) Missing or loose bolts, studs, nuts, or washers.
 - (6) Fractured bolts, stud, or nuts.
 - (7) Degradation of protective coatings on bolting surfaces.
 - (8) Evidence of coolant leakage near bolting.
- [4] Integral Attachment Welds (Category D-A and IP2 RCP integral welded attachments per RR-38).
 - (a) Visual examinations detecting the following relevant conditions shall be considered unacceptable and processed in accordance with the site ISI or corrective action program.
 - (1) Crack-like surface flaws that exceed the allowable linear flaw standards of IWB-3516.
 - (2) Structural degradation of the attachment welds such that the original cross-sectional area is reduced by more than 10 percent.

	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 14 OF 22	
VT-1 EXAMINATION				

[5] Examination of Nozzle Inner Radius sections (IP2 RR-9r1, 10r1 and IP3 RR-16)

(a) Visual examinations detecting the following relevant conditions shall be considered unacceptable and processed in accordance with the site ISI or corrective action program.

(1) Crack-like surface flaws that exceed the allowable linear flaw standards of IWB-3512.

(2) Structural degradation such that the original cross-sectional area is reduced by more than 10 percent.

[6] Coated and Non Coated Containment Surfaces Requiring Augmented Examination (Category E-A, E-C)

(a) The containment ISI program shall specify the site requirements for acceptance of VT-1 visual examinations.

(b) Acceptance of IWE examinations shall be by engineering evaluation or based on site-specific acceptance criteria for the visual examination of Containment Surfaces.

[7] Examination of Concrete Surfaces (Category LA, LB)

(a) The containment ISI program shall specify the site requirements for acceptance of VT-1 visual examinations.

(b) Acceptance of IWL examinations shall be by engineering evaluation or based on site-specific acceptance criteria for the visual examination of Containment Surfaces.

6.0 INTERFACES

[1] None

7.0 RECORDS

[1] Examination results shall be evaluated in terms of the applicable acceptance criteria and documented on Attachment 9.1 through 9.6 or similar forms.


[2] Examination reports shall be reviewed per ENN-NDE-1.00 requirements.

- [3] Examination reports shall be processed per site requirements and as a minimum, shall include the following:
- (a) NDE report number / Identification
 - (b) Examination procedure and revision
 - (c) Component examined
 - (d) Equipment used
 - (e) Examination results
 - (f) Names and certification levels of examination personnel
 - (g) Examination date

8.0 OBLIGATION AND REGULATORY COMMITMENT CROSS-REFERENCES

8.1 OBLIGATIONS AND COMMITMENTS IMPLEMENTED OVERALL

Step	Document	Commitment Number
[1]	Nuclear Regulatory Commission, 10 CFR Part 50, Industry Codes and Standards.	None
[2]	Entergy Quality Assurance Program Manual, Section B.11, "Special Process Control"	None
[3]	ASME Boiler & Pressure Vessel Code, Section XI, 2001 Edition, including 2003 Addenda.	None
[4]	ASME Boiler & Pressure Vessel Code, Section V and XI, 1998 Edition through 2000 Addenda.	None
[5]	ASME Boiler & Pressure Vessel Code, Section V and XI, 1992 Edition, including 1992 Addenda.	None
[6]	ASME Boiler & Pressure Vessel Code, Section XI, 1989 Edition no Addenda.	None


	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 16 OF 22	
VT-1 EXAMINATION				

8.2 SECTION SPECIFIC OBLIGATIONS AND COMMITMENTS

Step	Document	Document Section	Commitment Number
[1]	ASME Boiler & Pressure Vessel Code, Section XI, 2001 Edition, including 2003 Addenda.	PNPS - Section 5.2, 5.4	None
[2]	ASME Boiler & Pressure Vessel Code, Section V and XI, 1998 Edition through 2000 Addenda.	VY - Section 5.2, 5.4	None
[3]	ASME Boiler & Pressure Vessel Code, Section V and XI, 1992 Edition, including 1992 Addenda.	JAF, IPEC – Section 5.2, 5.4.	None
[4]	ASME Boiler & Pressure Vessel Code, Section XI, 1989 Edition no Addenda.	JAF, IPEC - Section 5.2, 5.4	None

8.3 SITE SPECIFIC COMMITMENTS

Step	Site	Document	Document Section	Commitment Number
[1]	JAF	Third In-service Inspection Interval Relief Request.	Section 5.2, 5.4	RR-4, RR-14 and RR-27
[2]	IP2	Third In-service Inspection Interval Relief Request	Section 5.2, 5.4, 5.6[3], 5.7[4]	RR-9, RR-10, RR-38
[3]	IP3	Third In-service Inspection Interval Relief Request	Section 5.2, 5.4	RR-16
[4]	PNPS	Fourth In-service Inspection Interval Relief Request	Section 5.2, 5.4	PIL-05-R-002

	NUCLEAR MANAGEMENT MANUAL	QUALITY RELATED	ENN-NDE-10.01	REV. 2
		INFORMATIONAL USE	PAGE 17 OF 22	
VT-1 EXAMINATION				

9.0 ATTACHMENTS

- 9.1 VT-1 Examination Report (BOLTING)
- 9.2 VT-1 Examination Report (INTEGRAL ATTACHMENT WELDS)
- 9.3 VT-1 Examination Report (NOZZLE INNER RADIUS)
- 9.4 VT-1 Examination Report (CONTAINMENT SURFACES)
- 9.5 VT-1 Examination Report (CONCRETE SURFACES)

ATTACHMENT 9.1 VT-1 EXAMINATION REPORT (BOLTING)

Work Document:	Component:	Report No.:
System:	Drawing:	Page of
Line #:	<input type="checkbox"/> Direct <input type="checkbox"/> Remote <input type="checkbox"/> Light Meter (<input type="checkbox"/> N/A)	Equipment:

Bolting Attributes	Acc	Rej	N/A	Comments
Crack-like flaws	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Thread damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Corrosion / Wear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Physical damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Missing / Loose bolting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fractured bolts, studs or nuts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Degraded of protective coating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Coolant leakage near bolting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Acceptance Criteria: ASME Section XI 1998 Edition, 2000 Addenda

Remarks:

<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%; border-bottom: none;">Examiner</td> <td style="width:15%; border-bottom: none;">Level</td> <td style="width:15%; border-bottom: none;">Date</td> <td style="width:30%; border-bottom: none;">Examiner</td> <td style="width:15%; border-bottom: none;">Level</td> <td style="width:15%; border-bottom: none;">Date</td> </tr> <tr> <td style="border-top: none;"> </td> <td style="border-top: none;"> </td> <td style="border-top: none;"> </td> <td style="border-top: none;"> </td> <td style="border-top: none;"> </td> <td style="border-top: none;"> </td> </tr> </table>	Examiner	Level	Date	Examiner	Level	Date							
Examiner	Level	Date	Examiner	Level	Date								
<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%; border-bottom: none;">Review</td> <td style="width:15%; border-bottom: none;">Level</td> <td style="width:15%; border-bottom: none;">Date</td> <td style="width:30%; border-bottom: none;">ANII</td> <td style="width:15%; border-bottom: none;">Date</td> </tr> <tr> <td style="border-top: none;"> </td> <td style="border-top: none;"> </td> <td style="border-top: none;"> </td> <td style="border-top: none;"> </td> <td style="border-top: none;"> </td> </tr> </table>	Review	Level	Date	ANII	Date								
Review	Level	Date	ANII	Date									



VT-1 EXAMINATION

ATTACHMENT 9.3

VT-1 EXAMINATION REPORT

(NOZZLE INNER RADIUS)

Work Document:	Component:			Report No.:
System:	Drawing:			Page of
Line #:	<input type="checkbox"/> Direct <input type="checkbox"/> Remote <input type="checkbox"/> Light Meter (<input type="checkbox"/> N/A)			Equipment:
Nozzle IR Attributes	Acc	Rej	N/A	Comments
Crack-like surface flaws	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Structural degradation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Acceptance Criteria: ASME Section XI 1998 Edition, 2000 Addenda				
Remarks:				
Examiner	Level	Date	Examiner	Level Date
Review	Level	Date	ANII	Date

ATTACHMENT 9.4 VT-1 EXAMINATION REPORT (CONTAINMENT SURFACES)

Work Document:	Component:	Report No.:					
System:	Drawing:	Page of					
Line #:	<input type="checkbox"/> Direct <input type="checkbox"/> Remote <input type="checkbox"/> Light Meter (<input type="checkbox"/> N/A)	Equipment:					
Painted or Coated Surfaces	Acc	Rej	N/A	Non-Painted Surfaces	Acc	Rej	N/A
Flaking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cracking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blistering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discoloration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peeling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discoloration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pitting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other signs of distress	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Excessive corrosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Arc strikes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Gouges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Surface discontinuities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs of surface irregularities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acceptance Criteria: ASME Section XI 1998 Edition, 2000 Addenda							
Remarks:							
Examiner	Level	Date		Examiner	Level	Date	
Review	Level	Date		ANII	Date		

ATTACHMENT 9.5 VT-1 EXAMINATION REPORT (CONCRETE SURFACES)

Work Document:	Component:	Report No.:
System:	Drawing:	Page of
Line #:	<input type="checkbox"/> Direct <input type="checkbox"/> Remote <input type="checkbox"/> Light Meter (<input type="checkbox"/> N/A)	Equipment:

Concrete Surface Attributes	Acc	Rej	N/A	Comments
Cracking / Checking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Abrasion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Blistering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Delaminations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Efflorescence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Peeling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pitting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Popouts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Scaling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spalling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other signs of distress	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Acceptance Criteria: ASME Section XI 1998 Edition, 2000 Addenda

Remarks:

Examiner			Examiner		
Level	Date		Level	Date	
Review			ANII		
Level	Date			Date	