RTYPE H6.02

PILGRIM NUCLEAR POWER STATION

Procedure No. 2.1.8.7

ASME CODE VISUAL EXAMINATION OF PRIMARY CONTAINMENT

STAR

Stop
Think
Act
Review

REFERENCE USE

QUALITY RELATED

REVISION LOG

REVISION 4 **Date Originated 11/05**

Pages Affected	Description
4-19	Revise Procedure to allow for use in conjunction with ENN-EP-S-001.

REVISION 3 **Date Originated 3/02**

Pages Affected	Description
9	Add "When identified by Engineering" to Step 7.2[4].

REVISION 2 **Date Originated 2/00**

Pages Affected	Description
3,7-9,19	Add Attachment 10 (Drywell Exterior).

TABLE OF CONTENTS

1.0 PURPOSE AND SCOPE

1.1 PURPOSE

This Procedure is to be used in conjunction with ENN-EP-S-001.

This Procedure provides the method for performing the General Visual Examination of Primary Containment pressure-retaining surfaces in accordance with the requirements of 10CFR50.55a(b)(2) and subsection IWE of ASME Section XI. The purpose of these examinations is to detect evidence of degradation that may affect either the structural integrity or leak-tightness of Primary Containment.

The General Visual Examination is performed once every 40 months by personnel selected from the Engineering organization. Some Primary Containment components or areas (such as the Torus ring header, vent system, and Torus submerged areas) examined by the General Visual Examination are inspected every 10 years. The examination is the successor to the previously performed Appendix J walkdown and does not require the use of Code-certified inspection personnel but must be performed under the direction of an individual identified as the "Responsible Individual".

The scope of the General Visual Examination includes all interior and exterior accessible pressure-retaining surfaces of the Primary Containment structure and its integral attachments (code class MC), excluding insulated surfaces.

1.2 SCOPE

This Procedure applies to the following class MC components:

[1] Drywell and Drywell head

[2] Suppression Chamber (Torus) exterior surface

[3] Suppression Chamber vapor phase surface

[4] Containment reinforcing structures such as stiffening rings, manhole frames, and reinforcement around openings

[5] Suppression Chamber submerged surfaces (once every 10 years)

[6] Drywell vent system including vent piping, vent header, and downcomers (once every 10 years)

[7] Drywell exterior and penetrations

2.0 REFERENCES

[1] ASME Boiler and Pressure Vessel Code, Section XI, 1998 edition with 2000 addenda, Subsection IWE, Category E-A

[2] ENN-EP-S-001, "*IWE General Visual Containment Inspection*"

[3] ISIIWE1, "IWE Boundary Drawing - Typical Piping Penetration"

[4] ISIIWE2, "IWE Boundary Drawing - Typical Piping Penetration"

[5] ISIIWE3, "IWE Boundary Drawing - Typical Piping Penetration"

[6] ISIIWE4, "IWE Boundary Drawing - Typical Instrument Penetration"

[7] ISIIWE5, "IWE Boundary Drawing - Typical Electrical Penetration for Low Voltage Power, Control & Instrumentation Cable"

[8] ISIIWE6, "IWE Boundary Typical Electrical Penetration for Coaxial Cable"

[9] ISIIWE7, "IWE Boundary Drawing -Typical Electrical Penetration for Medium Voltage Power Cable"

[10] ISIIWE8, "IWE Boundary Drawing - Containment Vessel Section"

[11] ISIIWE9, "IWE Boundary Drawing - Drywell Seal & Control Rod Inserts"

[12] ISIIWE10, "IWE Boundary Drawing - CRD Hatch Drywell Penetration X-6"

[13] ISIIWE11, "IWE Boundary Drawing - Ten Feet Zero Inch Diameter Equipment Door Assembly"

[14] ISIIWE12, "IWE Boundary Drawing - Suppression Chamber Access Penetrations X-200A & X-200B"

[15] ISIIWE13, "IWE Boundary Drawing - Personnel Air Lock"

[16] NE15.03, *"Performing, Reporting, and Controlling ISI Activities"*

[17] PNPS RPT-05-001, "PNPS Fourth Ten Year Interval Inservice Inspection Program"

3.0 DEFINITIONS

[1] Definitions of ENN-EP-S-001 apply.

4.0 DISCUSSION

4.1 PERSONNEL CERTIFICATIONS

Personnel performing the General Visual Examination are not required to be Code certified but shall meet the relevant requirements outlined in Section 6.0.

5.0 PRECAUTIONS AND LIMITATIONS

[1] These inspections are performed in radiation areas. Special care must be exercised to prevent personnel contamination and minimize dose to individuals performing the inspections. Review the appropriate RWP and follow the instructions using ALARA principles.

[2] Some areas inside Primary Containment may not be sufficiently purged of nitrogen to permit entry immediately after containment is de-inerted. The PNPS Nuclear Safety Coordinator/designee must determine whether the atmosphere is breathable in all areas inside containment prior to entry, particularly the Drywell-Torus vents and the ring header.

[3] The Torus ring header, vent surfaces internal to the Torus, and submerged surfaces of the Torus are required to be examined as part of the General Visual Examination only once every 10 years.

6.0 PREREQUISITES

[1] Approved Radiation Work Permits (RWPs) for examinations in the following areas must be in place:

(a) Drywell - all elevations

(b) Refuel Floor (both surfaces of Drywell head)

(c) Torus Room elevation -17' inboard and outboard of Torus

(d) Torus Room elevation 16' (top of Torus)

(e) Vent System

(f) Torus interior (catwalk only for General Visual Examination)

[2] Adequate illumination supplied by hand-held lanterns or supplemental lighting, if required, shall be used. Binoculars, spotting scopes, periscopes, or other optical aids may be used for remote examinations.

[3] The General Visual Examination shall be performed either directly or remotely by an examiner with near-distance acuity of 20/25 or greater Snellen fraction and far-distance acuity of 20/30 or greater Snellen fraction or equivalent. Acuity shall be demonstrated natural or corrected with at least one eye.

[4] Prior to Drywell entry, an ALARA briefing will be conducted with all Inspectors. As a minimum, the following will be discussed:

(a) Time saving travel

(b) Areas of responsibility - who goes where

(c) Time saving inspection techniques

(d) Dose rates

7.0 PROCEDURE

[1] Ensure that all required RWPs are activated.

[2] General Visual Examinations shall be conducted in accordance with ENN-EP-S-001 to detect conditions that may affect either the containment structural integrity or leak tightness. Inspection personnel shall work in pairs. Reportable areas are identified as those having discoloration, blistering, flaking, peeling or cracking of the coating, corrosion, pitting, mechanical damage, uncoated areas, or arc strikes.

[3] List all reportable conditions in the table and plot the location of each area using the diagrams on the Inspection Forms (Attachments 1 through 10). Alternatively, the forms contained in ENN-EP-S-001 (Attachments 7.1, 7.5, and 7.6) may be used to document inspection results. Include area location (azimuth, elevation, etc.), approximate size, and significant details. Photographs should be taken, if possible, and logged on the appropriate Inspection Form. Areas determined to be inaccessible shall be shown by hash marks on the Attachments.

[4] Visually examine the Drywell interior pressure-retaining surfaces using Attachments 1, 2, 3, 4, and 5.

[5] Visually examine the interior and exterior pressure-retaining surfaces of the Drywell head using Attachment 6.

[6] Visually examine the Torus interior pressure-retaining surfaces (vapor phase) using Attachment 7.

[7] Visually examine the Torus exterior pressure-retaining surfaces using Attachments 8 and 9.

[8] Visually examine the Drywell exterior and penetrations in the Reactor Building using Attachment 10.

[9] Visually examine the Drywell vent system and ring header (once every 10 years) using Attachment 7.1 of ENN-EP-S-001.

[10] Visually examine Torus submerged areas (once every 10 years) using Attachment 7.1 of ENN-EP-S-001.

7.1 RECORDING AND REPORTING CRITERIA

[1] The criteria of Section 5.0 of ENN-EP-S-001 shall be used for recording and reporting criteria for the General Visual Walkdown.

[2] The Responsible Individual shall complete Attachment 7.2 of ENN-EP-S-001 (IWE General Visual Examination Evaluation Form) for each area or condition requiring further engineering evaluation.

[3] Attachments 7.1, 7.5, and 7.6 of ENN-EP-S-001 may be used as an alternative to the datasheet forms shown in Attachments 1 through 10 of this Procedure.

[4] Condition Reports shall be issued to document reportable conditions. One Condition Report should be written to present the consolidated Inspection Team results for each Attachment area, unless there is a safety concern which requires more immediate processing.

7.2 EVALUATION PROCESS

[1] All reportable conditions shall be evaluated by the Responsible Individual using Attachment 7.2 of ENN-EP-S-001. Conditions that may affect containment structural integrity or leak tightness shall be accepted by engineering evaluation or corrected by repair or replacement prior to proceeding with an Appendix J Type A test (ILRT) or prior to return to service if no ILRT is scheduled. Acceptance criteria for evaluations shall be determined based on licensing and design requirements for PNPS.

[2] When conditions exist in accessible areas that could indicate the presence of degradation or result in degradation to inaccessible areas, the inaccessible areas shall receive an engineering evaluation for acceptability.

[3] For each inaccessible area evaluated, the following information shall be incorporated into the ISI Summary Report by the ISI work organization:

(a) A description of the type and estimated extent of degradation, and the conditions that led to the degradation.

(b) An evaluation of each area and the results of the evaluation.

(c) A description of necessary corrective actions.

[4] When identified by Design Engineering, reportable conditions accepted for continued service by engineering evaluation shall be added to the IWE augmented examination scope under Code category E-C and re-examined during each successive 40-month period. If after three successive periods the conditions are essentially unchanged, these augmented examinations shall be discontinued.

7.3 REPORTS

[1] All Inspection Forms shall be completed, signed, dated, and submitted to the *Responsible Individual*.

[2] MSTP Rep Task S002074 shall be signed off upon completion of the General Visual Examination.

8.0 ATTACHMENTS

ATTACHMENT 1 - DRYWELL 9'

ATTACHMENT 2 - DRYWELL 23'

ATTACHMENT 3 - DRYWELL 41'

ATTACHMENT 4 - DRYWELL 74'

ATTACHMENT 5 - DRYWELL 83' AND 93'3-3/4"

ATTACHMENT 6 - DRYWELL HEAD

ATTACHMENT 7 - TORUS INTERIOR BAY

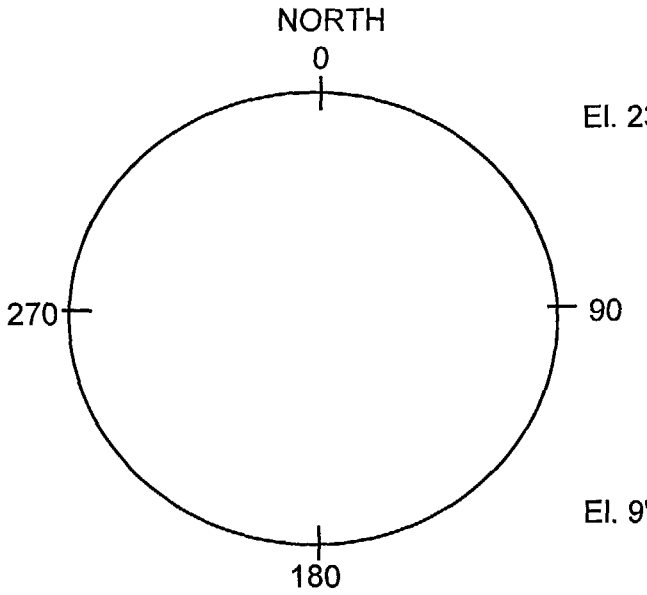
ATTACHMENT 8 - TORUS EXTERIOR (LOWER HALF) BAY

ATTACHMENT 9 - TORUS EXTERIOR (UPPER HALF) BAY

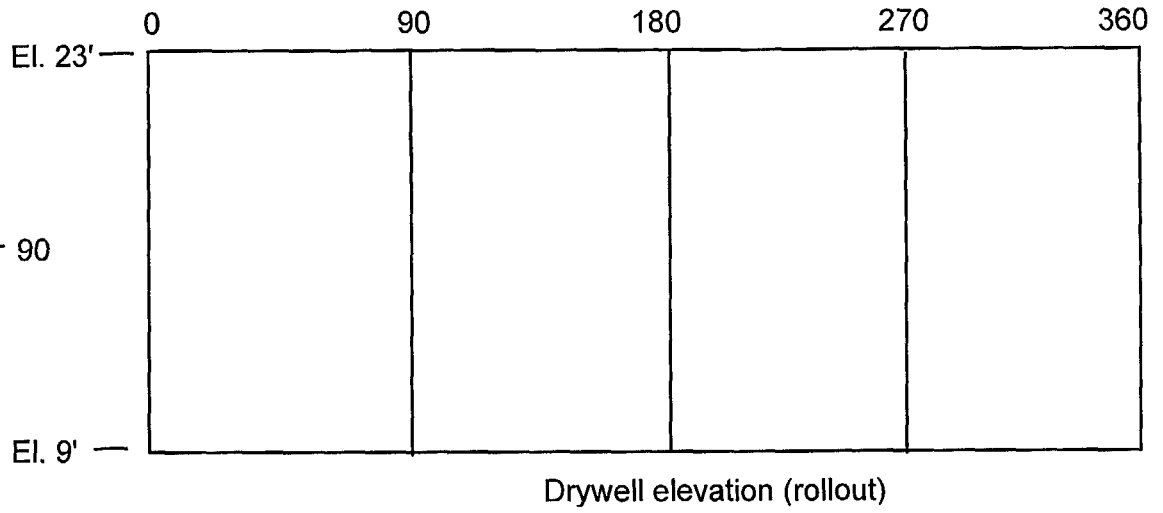
ATTACHMENT 10 - DRYWELL EXTERIOR

ATTACHMENT 1
Sheet 1 of 1

All Prerequisites (base document Section 6.0) met. _____
Name (print) Initials



DRYWELL 9'

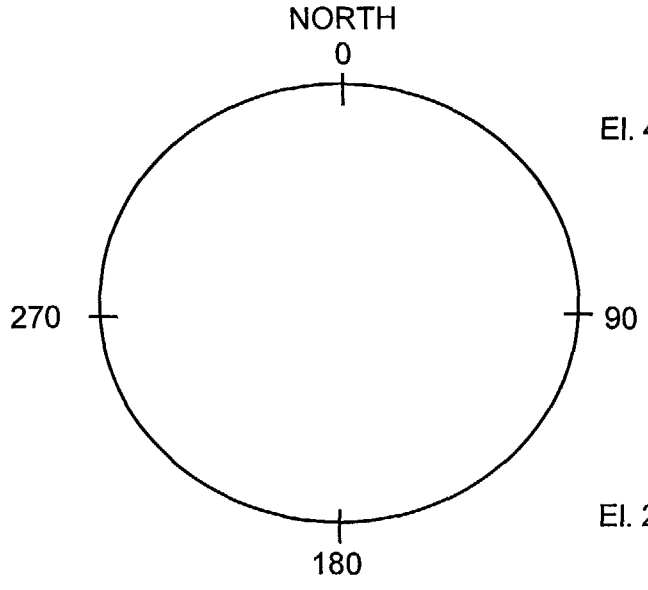


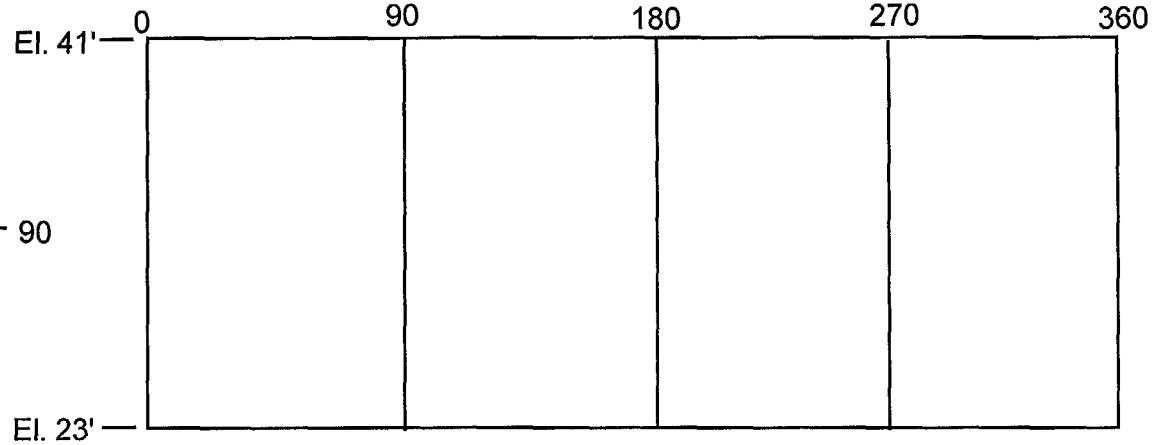
Area Indic. No.	Elev.	Az.	Approx dimen.	Blister -ing	Flaking	Peeling	Cracking Checking	Pitt-ing	Rust-ing	Discolor -ation	Mech. Damage	Uncoated	Arc Strikes	Dents Bulges Wear	Disk No.	Photo No.

EXAMINER SIGNATURES _____ _____ _____ DATE _____

All Prerequisites (base document Section 6.0) met. _____
Name (print) Initials

DRYWELL 23'





Drywell elevation (rollout)

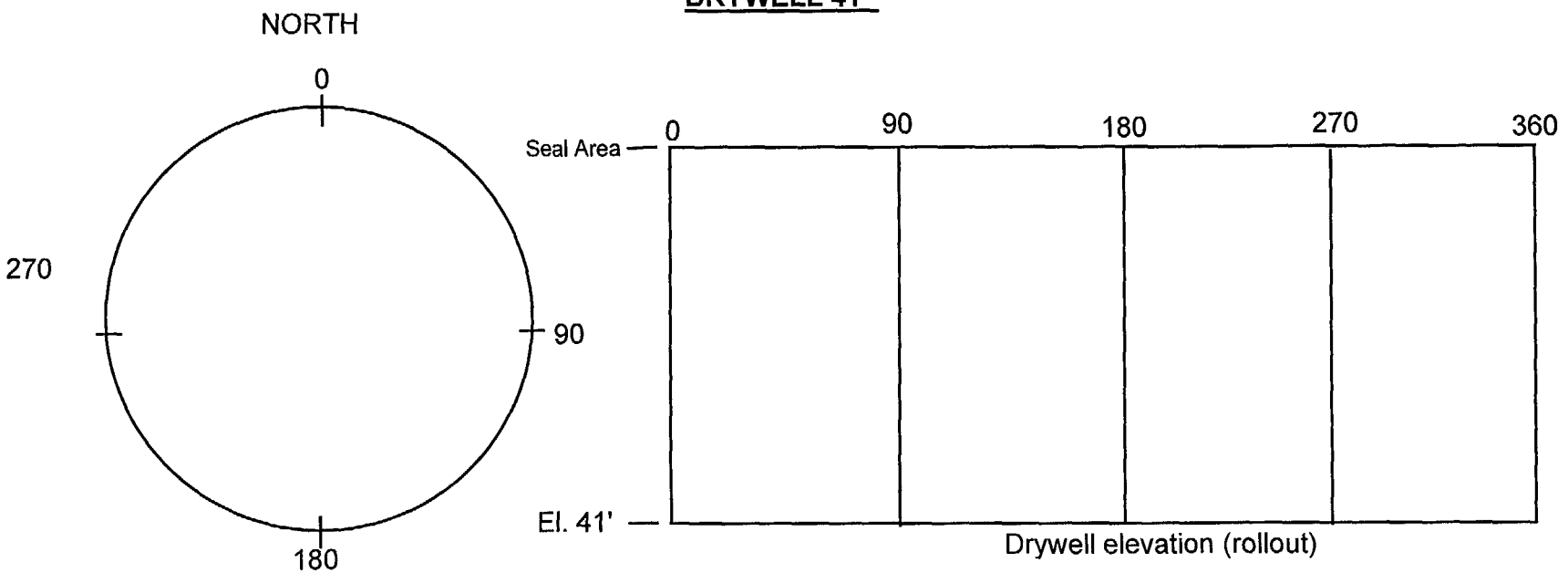
Area Indic. No.	Elev.	Az.	Approx dimen.	Blister -ing	Flaking	Peeling	Cracking Checking	Pitt-ing	Rust-ing	Discolor -ation	Mech. Damage	Uncoated	Arc Strikes	Dents Bulges Wear	Disk No.	Photo No.

EXAMINER SIGNATURES _____ _____ _____ DATE _____

ATTACHMENT 3
Sheet 1 of 1

All Prerequisites (base document Section 6.0) met. _____
Name (print) Initials

DRYWELL 41'



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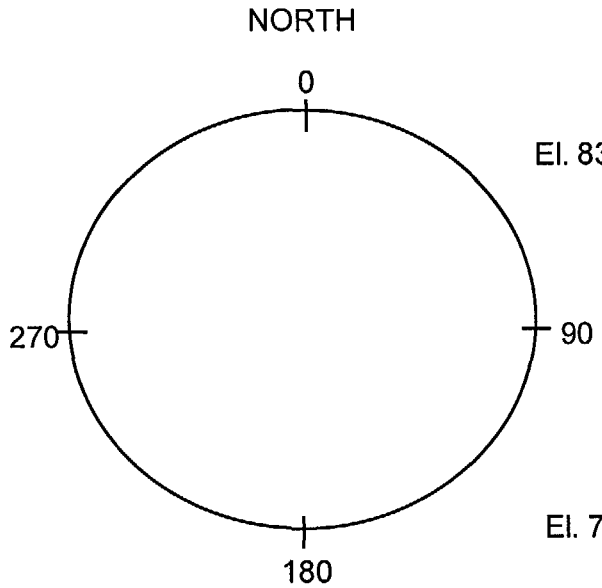
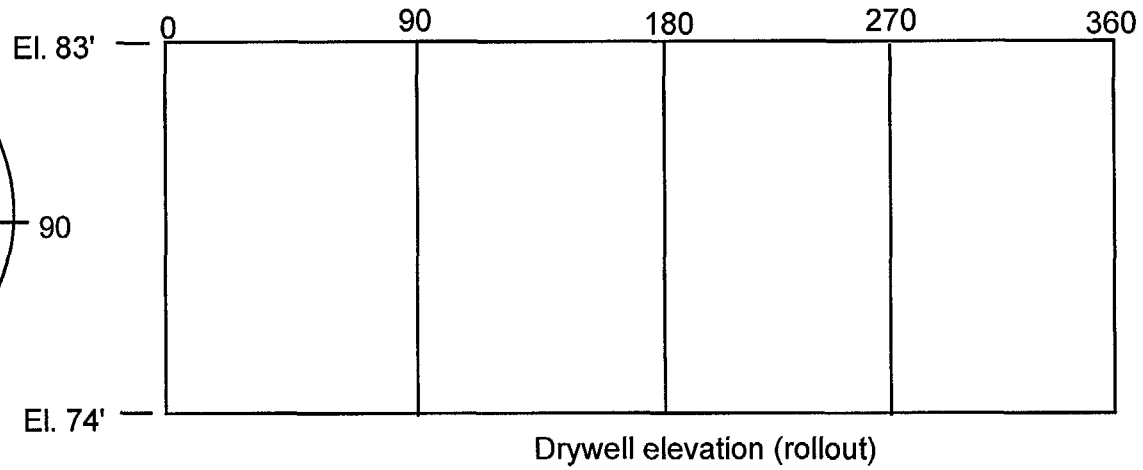
EXAMINER SIGNATURES _____ _____ _____ DATE _____

All Prerequisites (base document Section 6.0) met. _____
Name (print) Initials



DRYWELL 74'



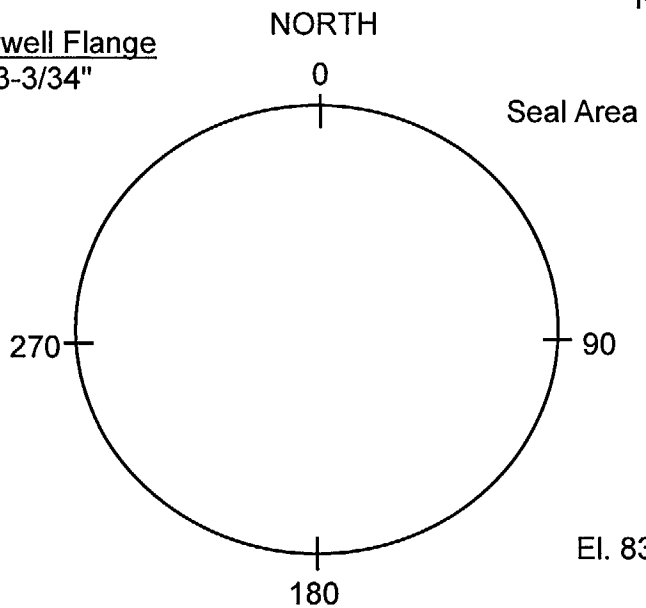
Area Indic. No.	Elev.	Az.	Approx dimen.	Blister -ing	Flaking	Peeling	Cracking Checking	Pitt-ing	Rust-ing	Discolor -ation	Mech. Damage	Uncoated	Arc Strikes	Dents Bulges Wear	Disk No.	Photo No.

EXAMINER SIGNATURES _____ _____ _____ DATE _____

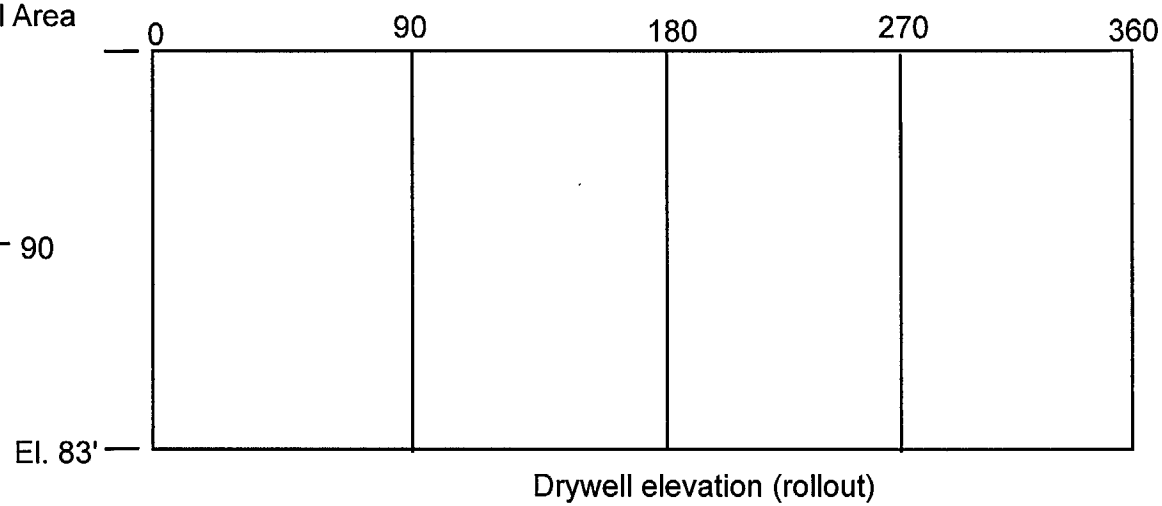
ATTACHMENT 5
Sheet 1 of 1

All Prerequisites (base document Section 6.0) met. _____
Name (print) Initials

Drywell Flange
93'3-3/34"



DRYWELL 83'

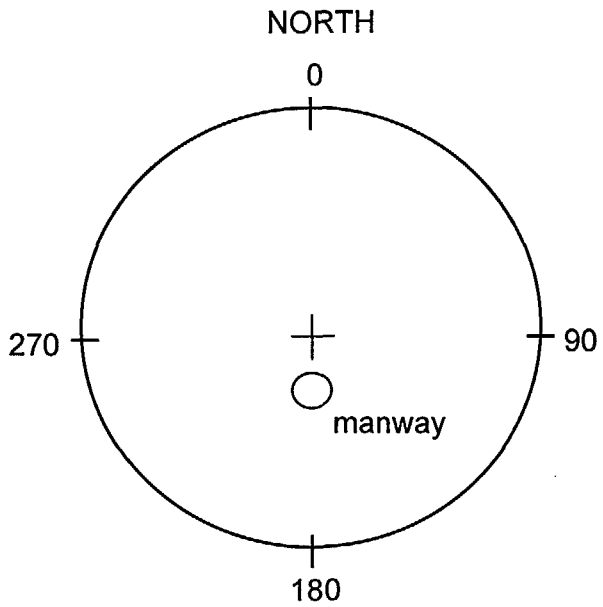


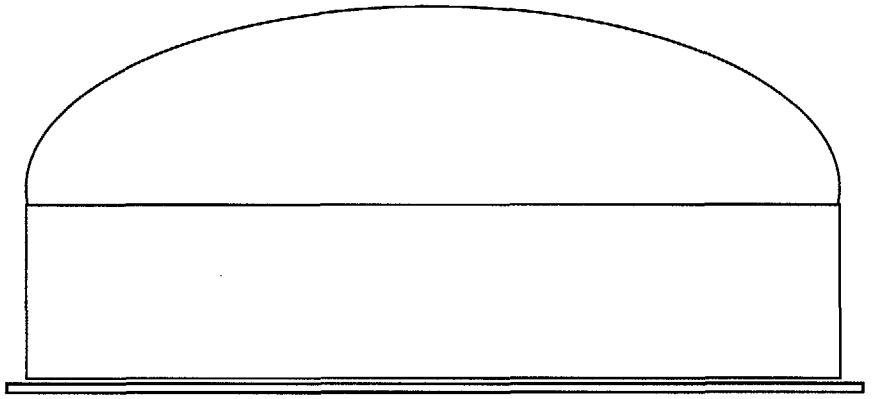
Area Indic. No.	Elev.	Az.	Approx dimen.	Blister -ing	Flaking	Peeling	Cracking Checking	Pitt-ing	Rust-ing	Discolor -ation	Mech. Damage	Uncoated	Arc Strikes	Dents Bulges Wear	Disk No.	Photo No.

EXAMINER SIGNATURES _____ _____ _____ DATE _____

All Prerequisites (base document Section 6.0) met. _____
Name (print) Initials

DRYWELL HEAD





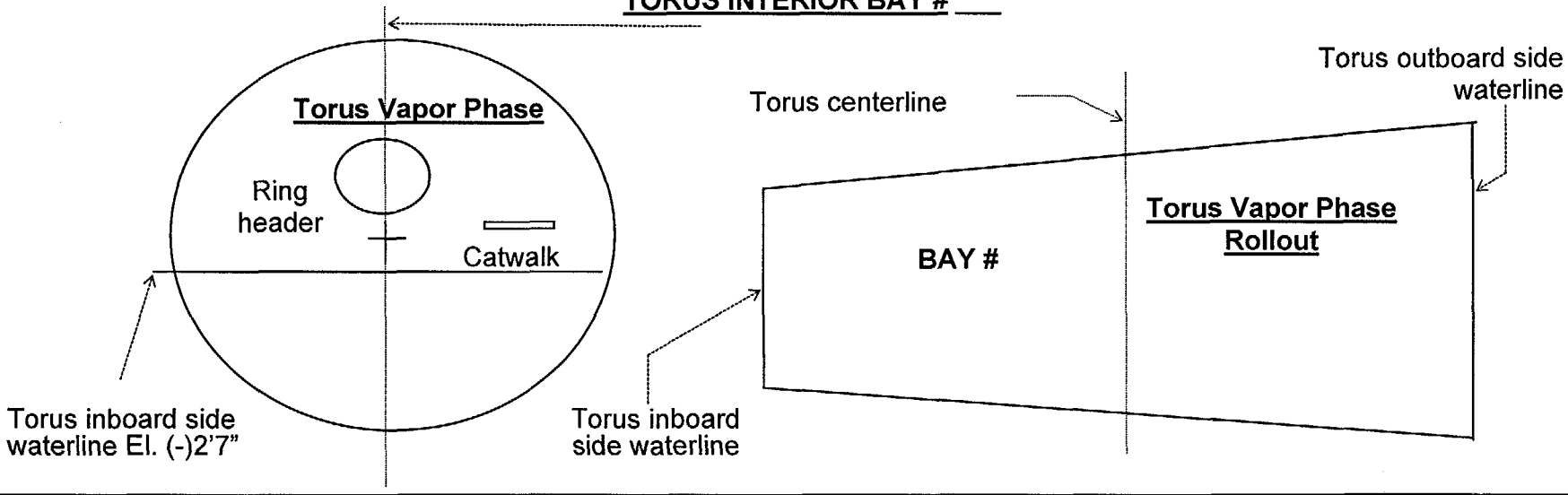
Drywell Head elevation

Area Indic. No.	Elev.	Az.	Approx dimen.	Blister -ing	Flaking	Peeling	Cracking Checking	Pitt-ing	Rust-ing	Discolor -ation	Mech. Damage	Uncoated	Arc Strikes	Dents Bulges Wear	Disk No.	Photo No.

EXAMINER SIGNATURES _____ _____ _____ DATE _____

All Prerequisites (base document Section 6.0) met. _____
Name (print) Initials

TORUS INTERIOR BAY # ___

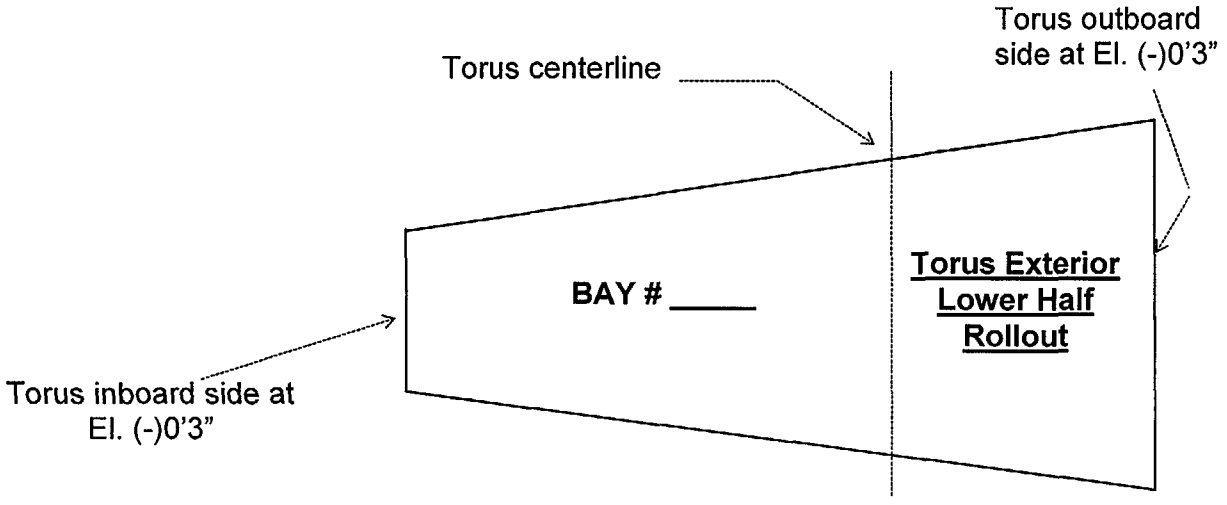


Area Indic. No.	Elev.	Az.	Approx dimen.	Blister -ing	Flaking	Peeling	Cracking Checking	Pitt-ing	Rust-ing	Discolor -ation	Mech. Damage	Uncoated	Arc Strikes	Dents Bulges Wear	Disk No.	Photo No.

EXAMINER SIGNATURES _____ _____ _____ DATE _____

All Prerequisites (base document Section 6.0) met. _____
Name (print) Initials

TORUS EXTERIOR (LOWER HALF) BAY # ___

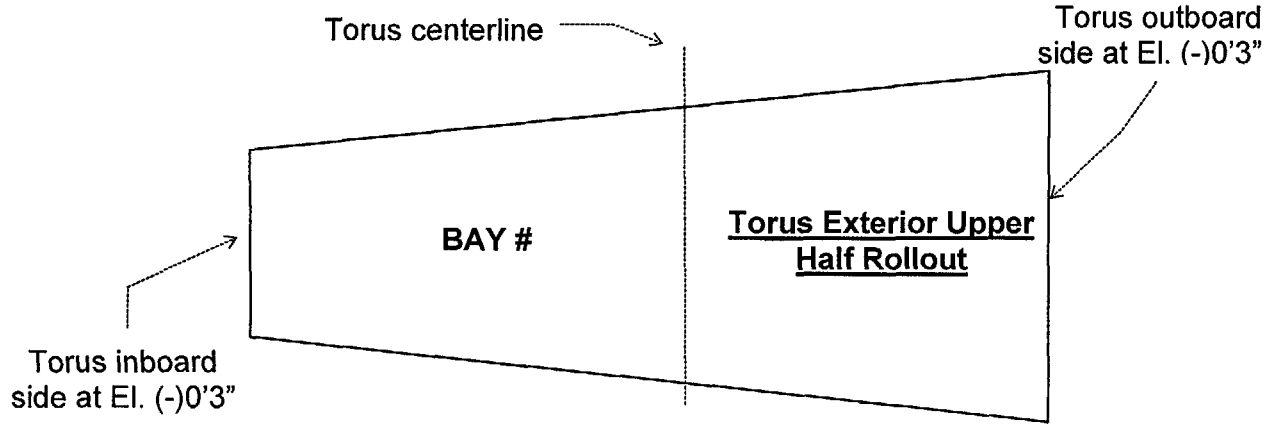


Area Indic. No.	Elev.	Az.	Approx dimen.	Blister -ing	Flaking	Peeling	Cracking Checking	Pitt-ing	Rust-ing	Discolor -ation	Mech. Damage	Uncoated	Arc Strikes	Dents Bulges Wear	Disk No.	Photo No.

EXAMINER SIGNATURES _____ _____ _____ DATE _____

All Prerequisites (base document Section 6.0) met. _____
Name (print) Initials

TORUS EXTERIOR (UPPER HALF) BAY # ____



Area Indic. No.	Elev.	Az.	Approx dimen.	Blister -ing	Flaking	Peeling	Cracking Checking	Pitt-ing	Rust-ing	Discolor -ation	Mech. Damage	Uncoated	Arc Strikes	Dents Bulges Wear	Disk No.	Photo No.

EXAMINER SIGNATURES _____ _____ _____ DATE _____

All Prerequisites (base document Section 6.0) met. _____
Name (print) Initials

DRYWELL EXTERIOR

NOTE

Very little of the Drywell exterior and penetrations are accessible from the Reactor Building. This examination is best conducted with the containment System Engineer to locate areas for examination.

Area Indic. No.	Elev.	Az.	Approx dimen.	Blister -ing	Flaking	Peeling	Cracking Checking	Pitt-ing	Rust-ing	Discolor -ation	Mech. Damage	Uncoated	Arc Strikes	Dents Bulges Wear	Disk No.	Photo No.

EXAMINER SIGNATURES _____ _____ _____ DATE _____