

Calvert Cliffs Unit 1

Refueling Outage

Spring 2004

Reactor Vessel Head Inspections

**Calvert Cliffs Nuclear Power Plant,
Inc.**

Agenda

- Meeting Objectives - M. Milbradt ✓
- Executive Summary - M. Milbradt
- Inspection Scope - J. Haydin
- Summary - M. Milbradt

Objectives

- Common understanding of CCNPP approach to inspection
- Common understanding of CCNPP nozzle configuration
- Common understanding of Regulatory Compliance

Executive Summary

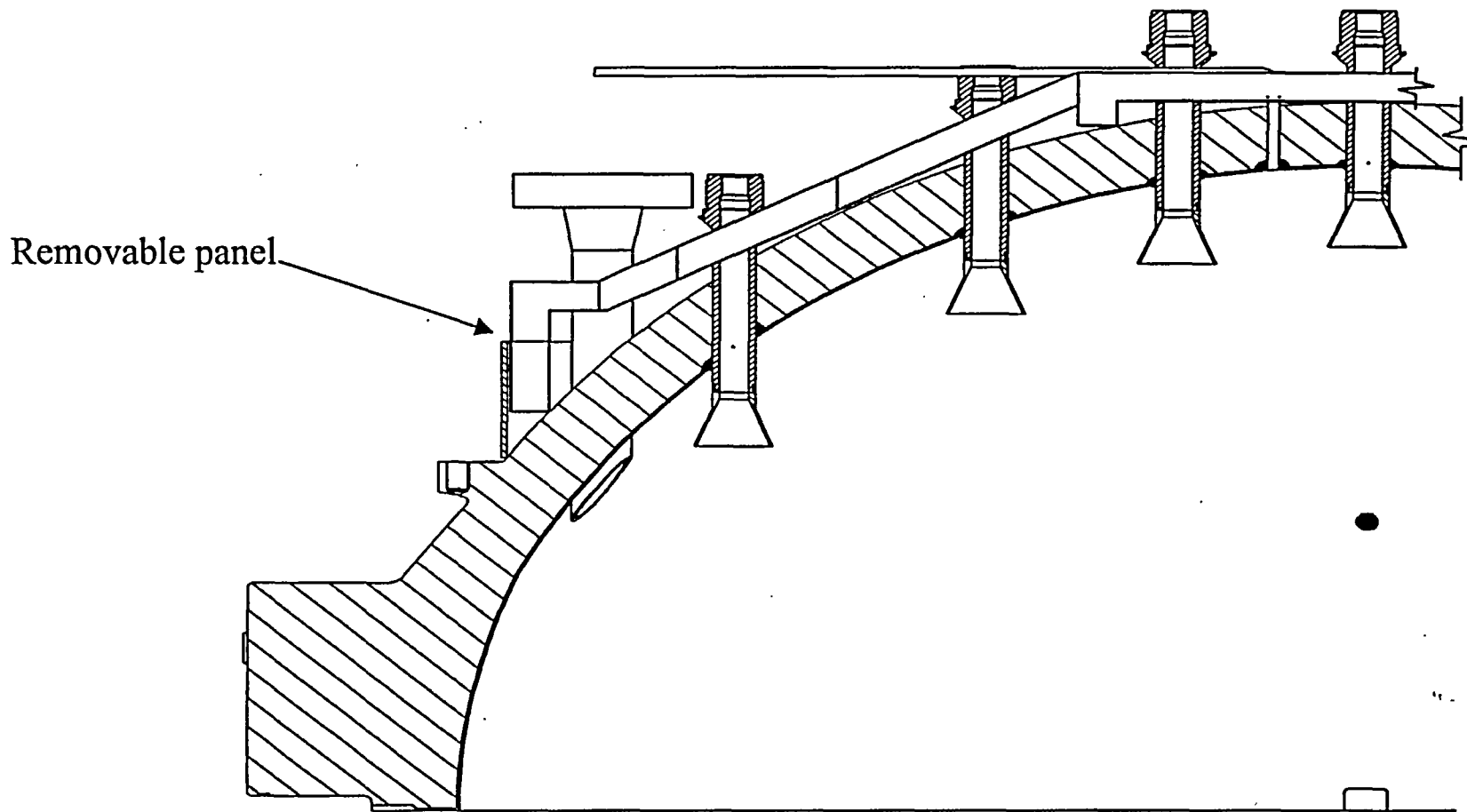
- Unit 1 and Unit 2 heads have similar nozzle configuration
- Relaxation granted for Unit 2
- Plan same inspection approach on Unit 1 which will ensure structural integrity
- We will comply with the order. We plan on submitting a relaxation request in January.

Reactor Vessel Head Insulation

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Bare Metal Visual Inspection

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- Unit 1 Exam - Spring 2002 results
 - 100% visual examination of all penetrations
 - No indications of leakage
 - No indications of head wastage

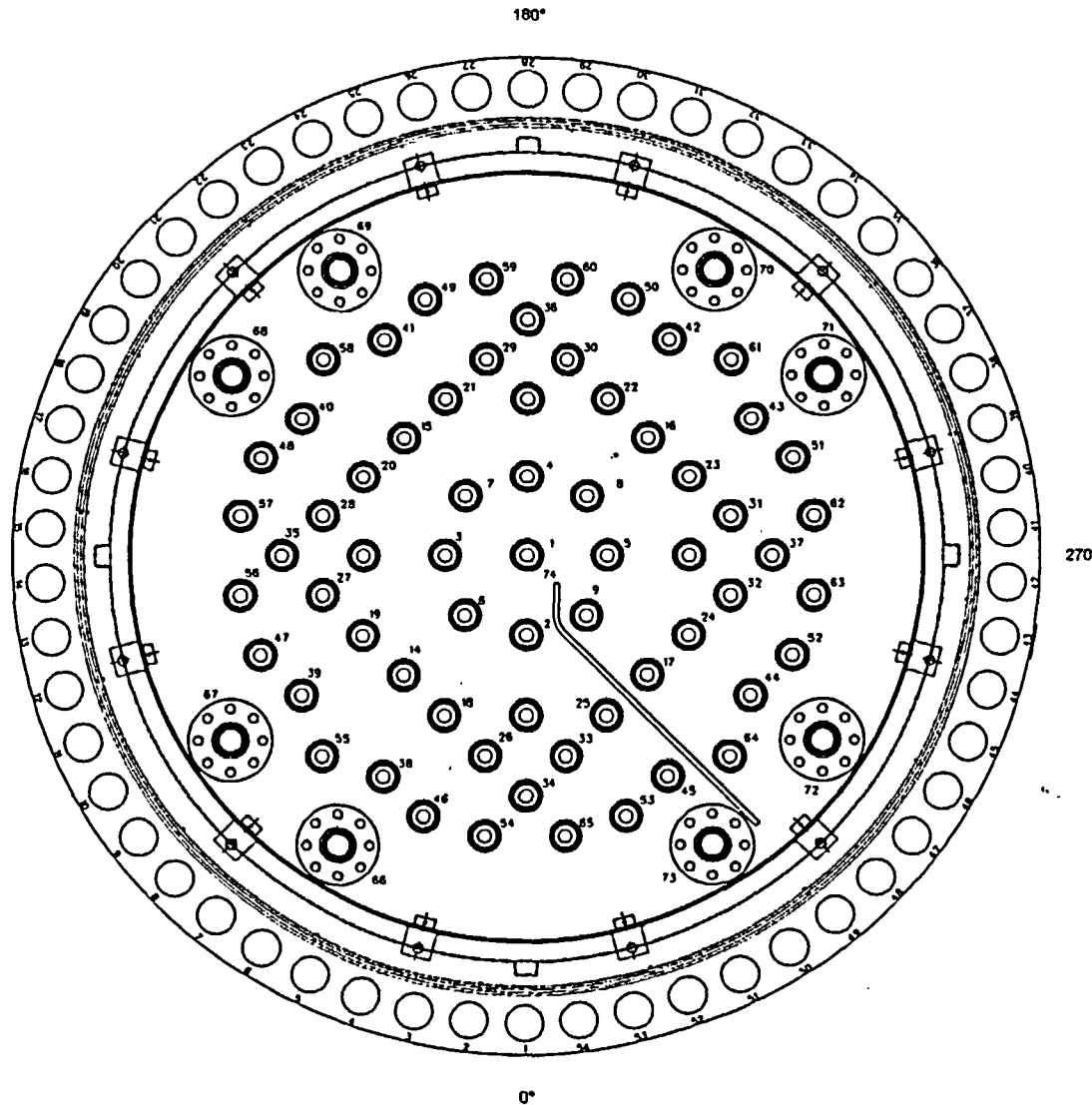
Bare Metal Visual Inspection

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- Unit 1, 2004 Visual Examination Plan
 - Same approach as 2002
 - Same vendor and technique
 - Acquire visual inspection data on every penetration and the rest of the surface IAW the Order
 - Previous exam identified minor amounts of extraneous material (covering a few square inches of head) which we intend to move to permit full surface examination

Head Configuration

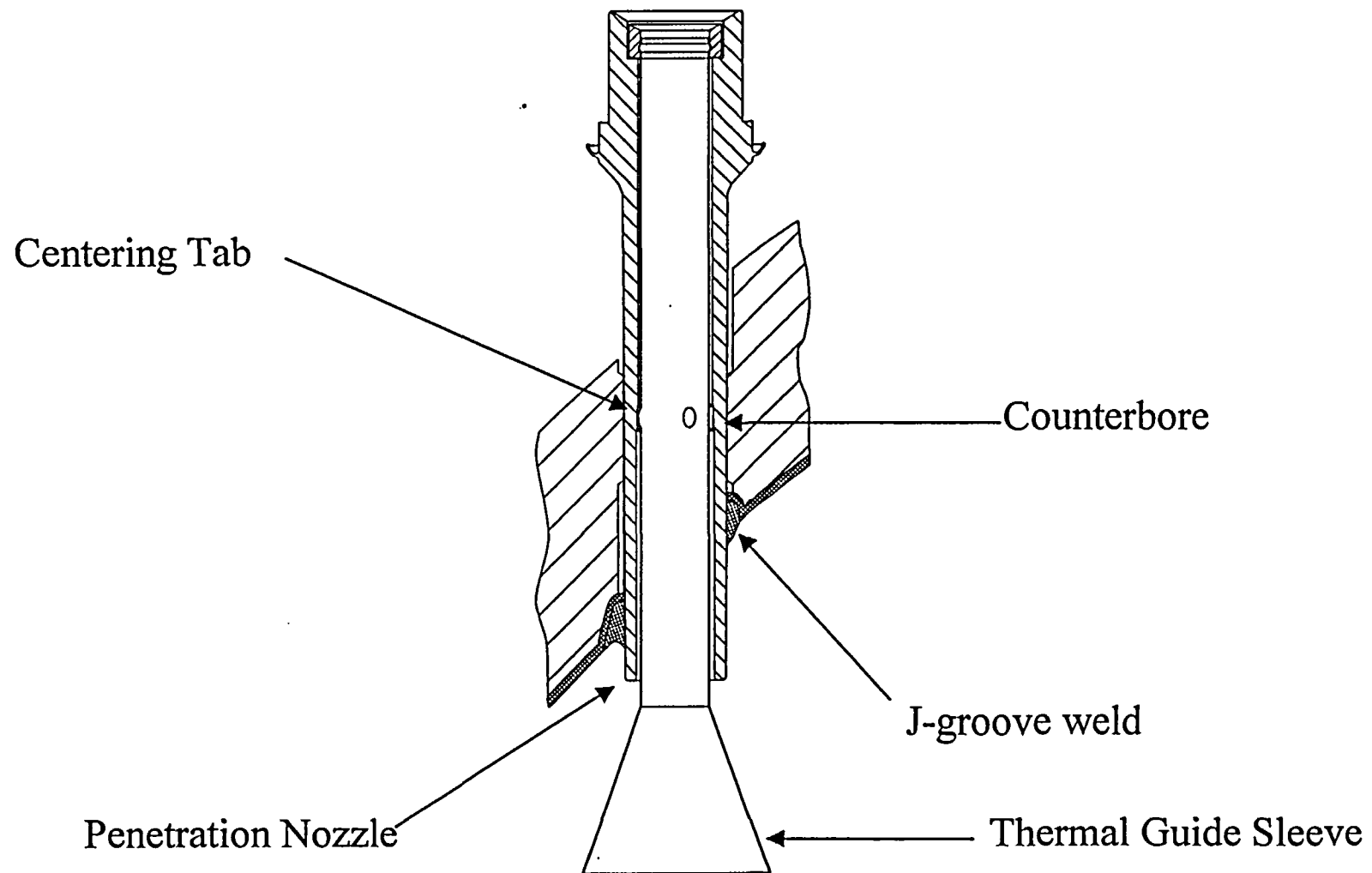
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74 Total Penetrations
8 In-core Instruments (ICI)s
1 Head Vent
65 Control Element
Drive Mechanisms (CEDM)s

CEDM Nozzle Detail

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Unit 1 Volumetric Exam

- Consistent with Unit 2, 2003 exam
 - CEDMs with stationary guide/thermal sleeves
 - Blade Probe Ultrasonic Testing (UT)
 - ICIs and vent line
 - Rotating Probe UT
 - Leak path determination
 - ICIs and CEDMs with UT
 - Eddy Current Test (ET) vent line weld

Volumetric Inspection

- Unit 2, 2003 Inspection Findings
 - In some penetrations, thermal sleeve and penetration geometry prevented inspecting 2" above J-groove weld
 - Probe configuration (over/under transducers) excluded bottom ~ 0.5" of nozzle OD
 - Unit 1 nozzle configuration is similar. We expect to achieve similar results to those achieved on Unit 2

Nozzle Repairs

- CEDMs; Framatome's ID Temper Bead (IDTB) method
 - Remove a portion of the penetration nozzle and re-establish welded pressure boundary
- ICIs and Head Vent Nozzles
 - Manually remove defect and re-weld

Summary

- Examination Goals
 - 100% visual examination of the top of the vessel head including 360° around each penetration
 - UT of Alloy 600 penetration material
 - Leak path assessment of CEDMs and ICIs
 - ET of Head Vent
- We will comply with the order. We plan on submitting a relaxation request in January.