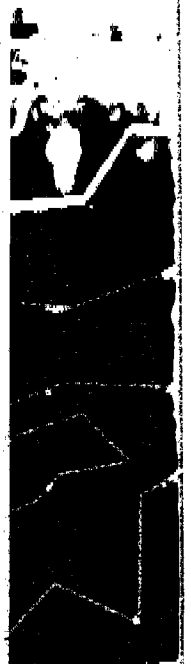


# **ANO-2 Bare Metal Visual Relaxation Request**

**Entergy Operations, Inc.**

**Date – June 17, 2003**



# Introduction

Bill James

6/17/2003

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*B. Jensen*

# Purpose of Meeting

- ▶ BMV Hardship
- ▶ RVH Inspection Plans
- ▶ Diverse and Complementary Inspections
- ▶ Relaxation Requests
- ▶ Answer Questions

6/17/2003



# Agenda

**Introduction**

**Bill James**

**Hardship Review**

**Doug Edgell**

**Inspection Plans**

**William Sims**

**Other Relaxation Requests**

**William Sims**

**Closing Remarks**

**Craig Anderson**

6/17/2003

*plint*

# Feb 11, 2003 Order Requirements for BMV

- ▶ IV.C (1) plants in the High category, RPV head inspections shall perform:
  - 1) (a) Bare metal visual examination of 100% of the RPV head surface (including 360° around each RPV head penetration nozzle), AND
  - (b) Either:
    - (i) Ultrasonic testing of each RPV head penetration nozzle and an assessment to determine if leakage has occurred into the interference fit zone,
    - OR
    - (ii) Eddy current testing or dye penetrant testing of the wetted surface of each J-Groove weld and RPV head penetration nozzle base material.

# Feb 11, 2003 Order

- ▶ A request for relaxation shall address:
  - (1) The proposed alternative(s) for inspection of specific nozzles will provide an acceptable level of quality and safety, or
  - (2) Compliance with this Order for specific nozzles would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

# Energy Relaxation for ANO-2

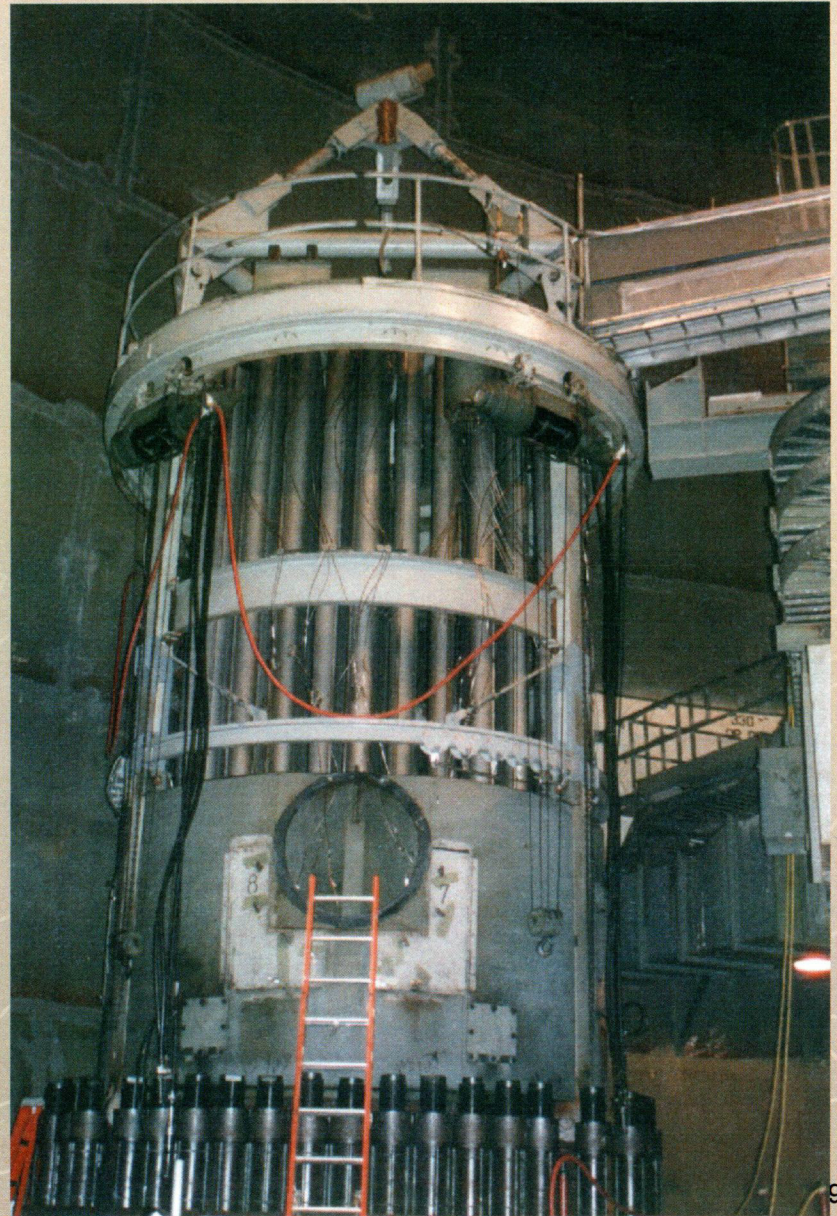
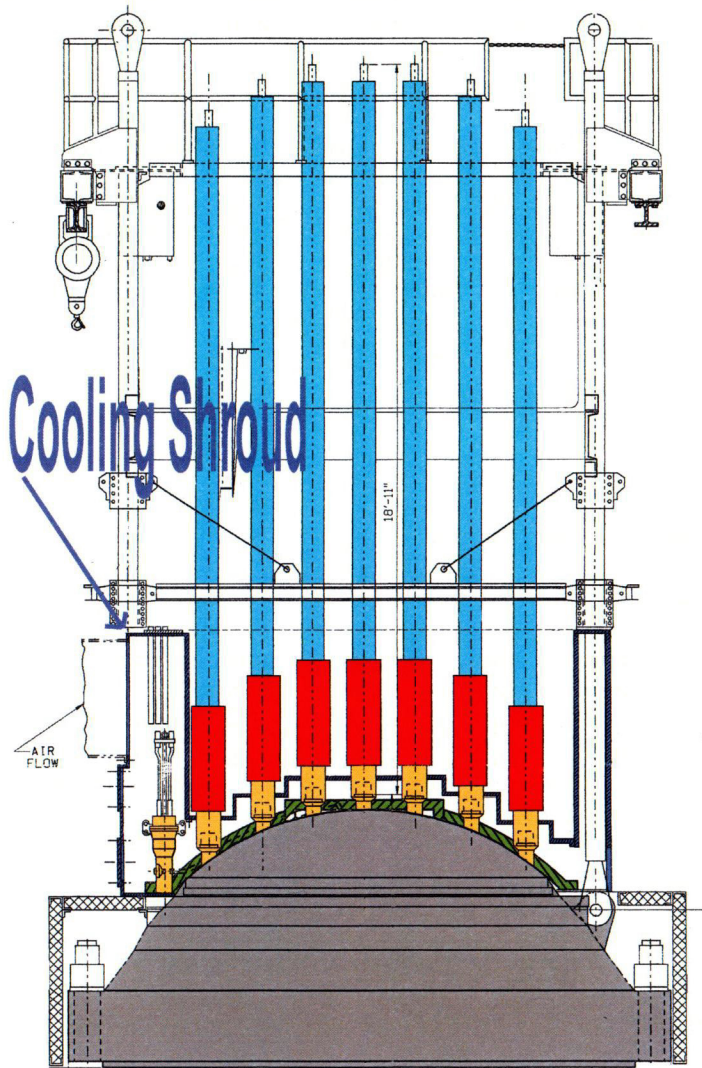
APPROACH: Two-fold

1. Hardship in Performing BMV
2. Complementary inspections that ensure quality and safety

# ANO-2 Relaxation Request

- ▶ **May 8<sup>th</sup> Submittal:** Believed to provide for both BMV hardship as well as a diverse and complementary approach to BMV
- ▶ **Retrospect:** Additional technology can provide supplemental level of diversity

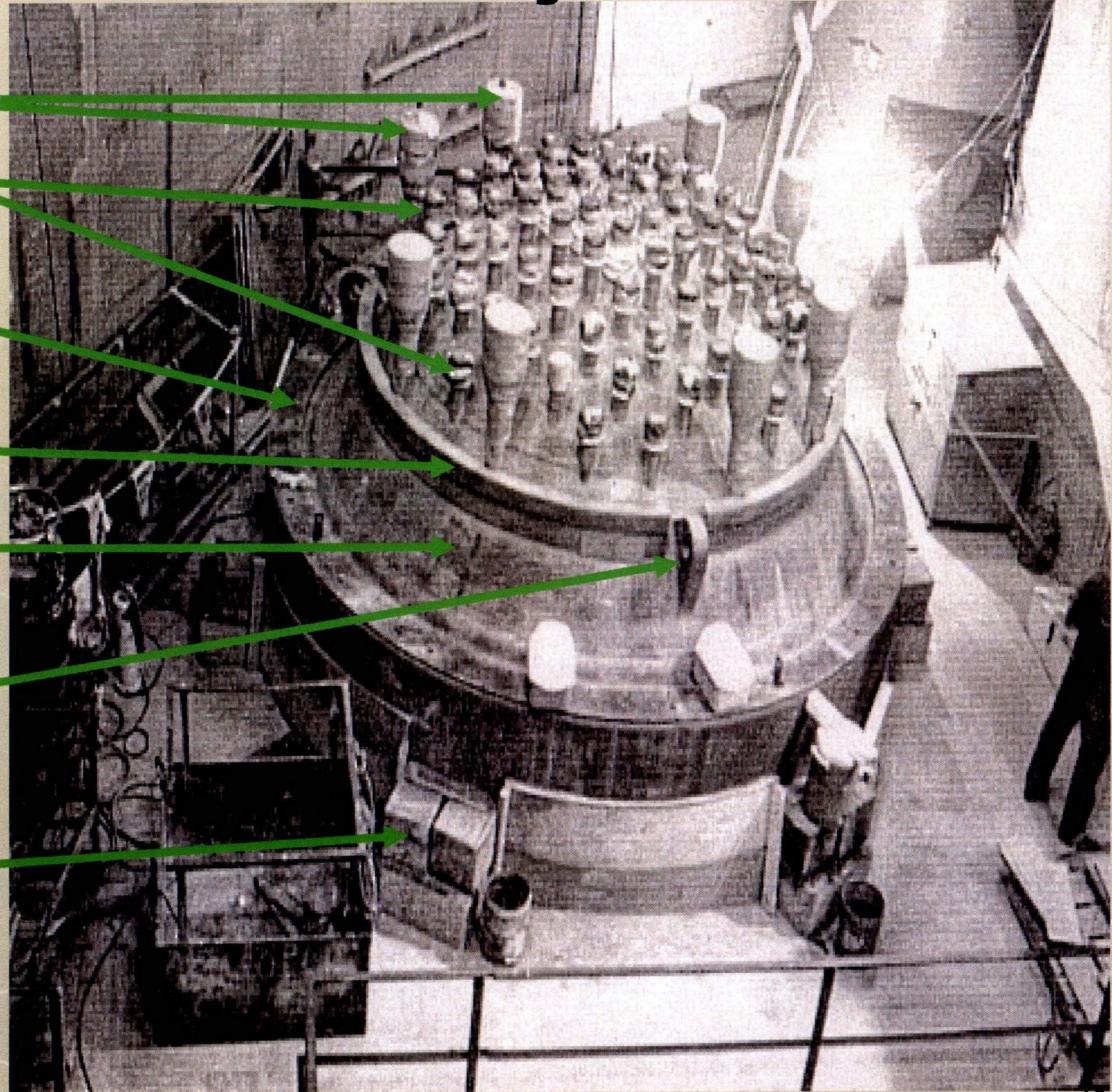




# Reactor Vessel Head Design

ANO-2 Head During Plant Construction

- ▶ ICI Nozzles (8)
- ▶ CEDM Nozzles (81)
- ▶ RVH Flange
- ▶ Insulation Retainer Ring
- ▶ Accessible Area for BMV
- ▶ Lifting Trunion
- ▶ Head Stand



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# Reactor Vessel Head Fabrication

**ANO-2 Head During Plant Construction**

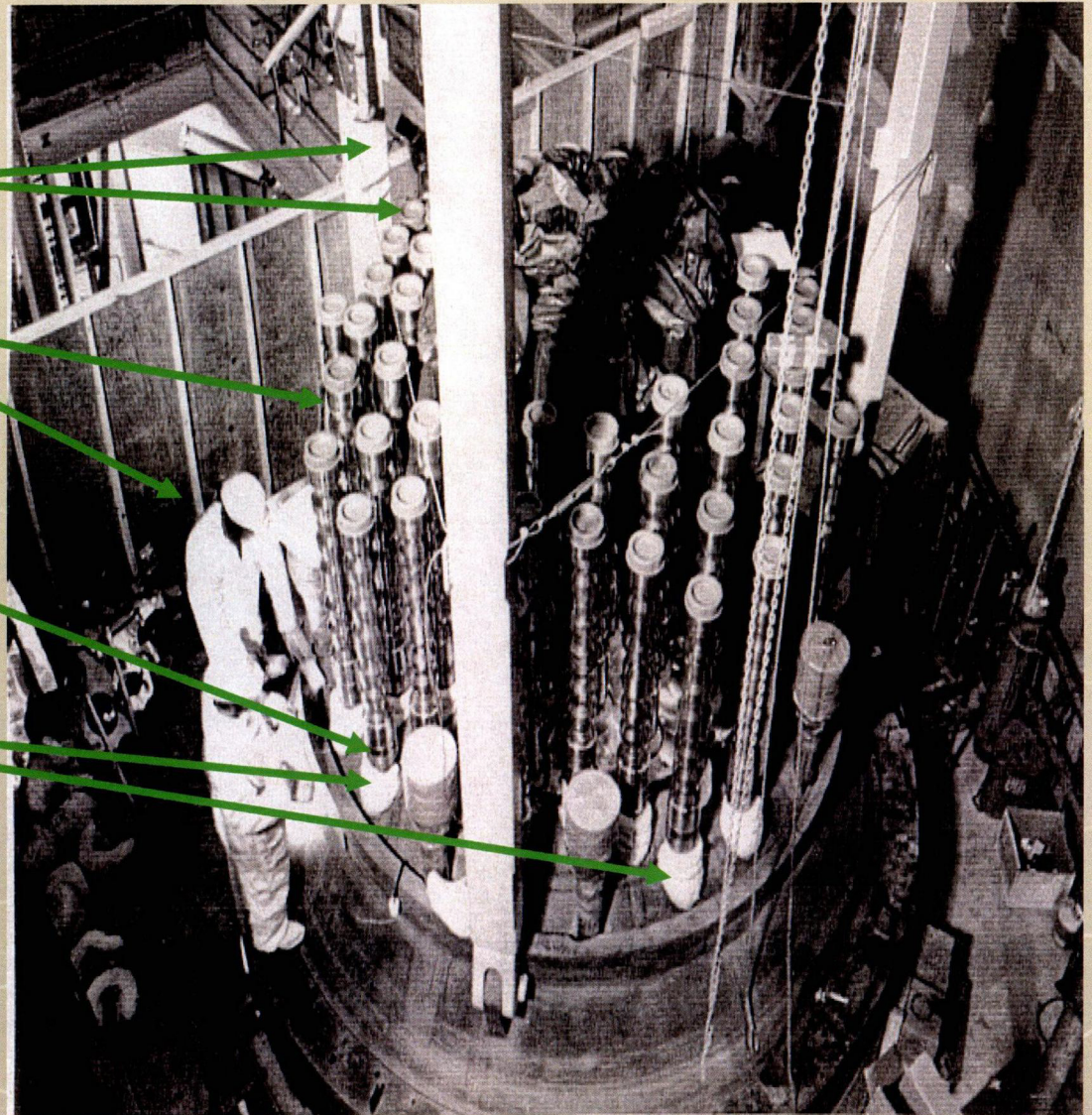


- ▶ **CEDM Motor Housings**
- ▶ **Motor housing and insulation collars were installed from the center out due to the restricted access**
- ▶ **CEDM Nozzles**
- ▶ **ICI Nozzles**

**Note: Nozzle to CEDM connection follow head contour**

# Reactor Vessel Head Fabrication

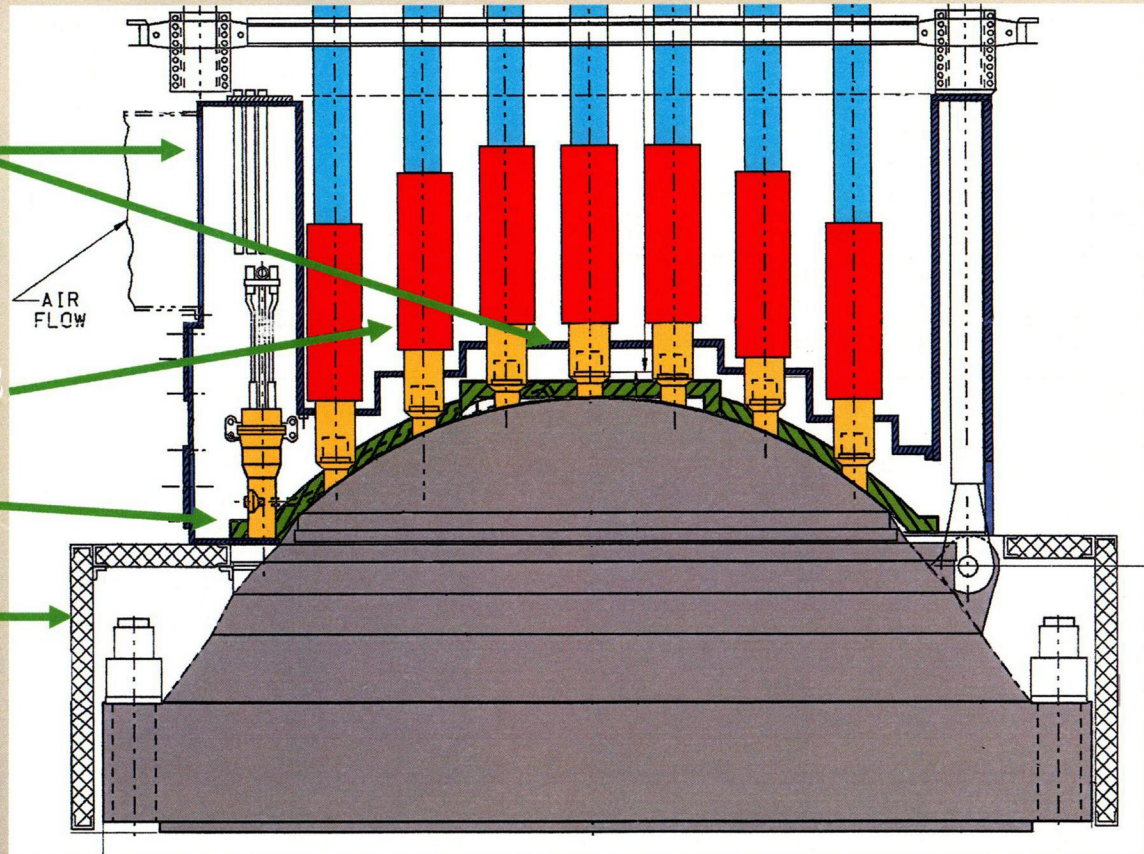
- ▶ **Lift Rig Columns**
- ▶ **CEDM Motor Housings**
- ▶ **ICI Nozzles**
- ▶ **CEDM Insulation Collars**



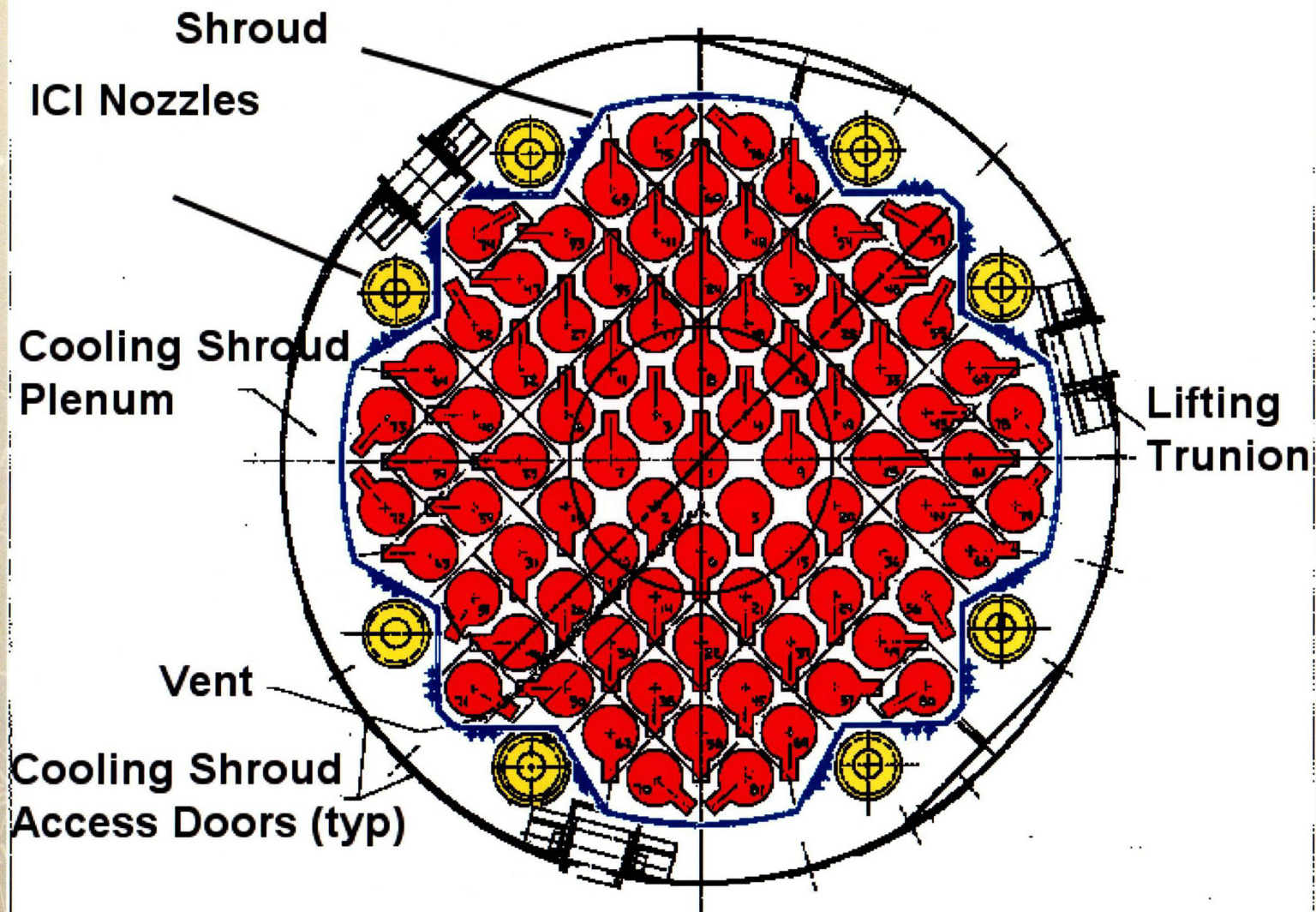
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# RVH Cooling Shroud and Insulation

- ▶ **Cooling Shroud**
- ▶ **ICI Access Doors**
- ▶ **CEDM Coil Stacks**
- ▶ **Panel Insulation**
- ▶ **Removable Insulation**



# RVH Cooling Shroud and ICI BMV



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# Panel Insulation

- ▶ Collars are enclosed by prefabricated Stainless Steel reflective insulation panels
- ▶ Panels are sized to closely fit around the collars
- ▶ 56" diameter dome panel and 16 panels around the radius

