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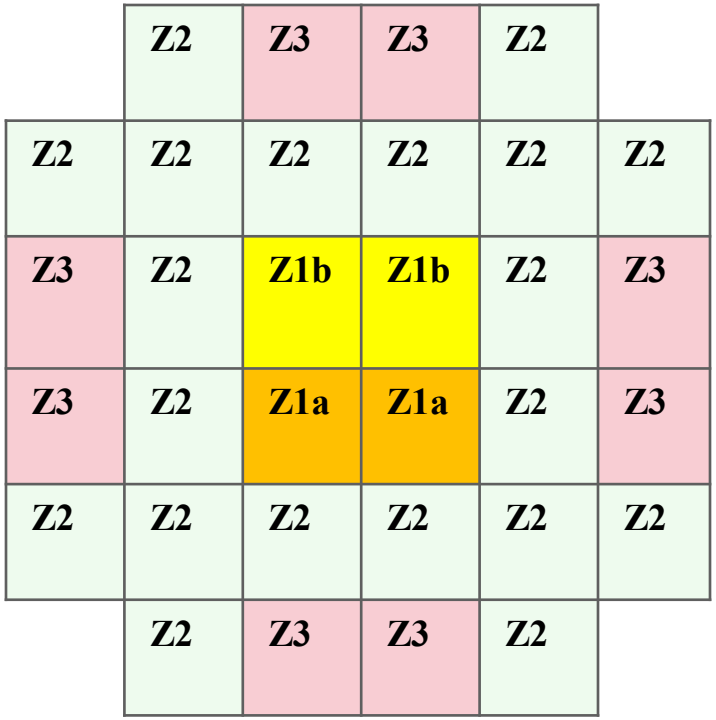
Operating Experience

Randy Robins
Dominion Power

Introduction

- Review of Event
  - Fuel Improperly Located in Dry Shielded Canisters Resulted in Zone Assembly Decay Heat Limit being Exceeded
- Corrective Actions
- Generation of Operating Event Report

Review of Event



Technical Specification Figure Indicating Decay Heat Zone Loading

- **Four Zones (Z1a, Z1b, Z2, Z3)**
- **Each Zone has an Assembly Maximum Decay Heat Limit**
- **Z1b Maximum Assembly Decay Heat Limit < Z1a Maximum Assembly Decay Heat Limit**
- **Maximum Total Decay Heat Limit for Four Center Assemblies (Z1a + Z1b Assemblies)**
- **Maximum Total Decay Heat Limit for DSC (Total for all 32 Assemblies)**

Review of Event

Preparation of Documents for Dry Storage Loading

- Verification Fuel meets Technical Specification Requirements:
  - Physical Condition
  - Initial Enrichment
  - Burnup
  - Cooling Time
  - Decay Heat for Specific Zones
- Preparation of Canister Loading Map
- Fuel Movement Sheets

Review of Event

Technical Specification Functional and Operational Limits

Fuel to be Stored:

> "Fuel Assemblies may be qualified for four (4) heat load zones designated as Zones 1a, 1b, 2, and 3. Figure 2 shows the heat load zone locations."

Functional and Operating Limits Violations:

> "Within 24 hours, notify the NRC Operations Center."
>
> "Within 30 days, submit a special report which describes the cause of the violation and the actions taken to restore compliance."

Review of Event

	Z2 FA 1	Z3 FA 2	Z3 FA 3	Z2 FA 4	
Z2 FA 5	Z2 FA 6	Z2 FA 7	Z2 FA 8	Z2 FA 9	Z2 FA 10
Z3 FA 11	Z2 FA 12	Z1a FA 13	Z1a FA 14	Z2 FA 15	Z3 FA 16
Z3 FA 17	Z2 FA 18	Z1b FA 19	Z1b FA 20	Z2 FA 21	Z3 FA 22
Z2 FA 23	Z2 FA 24	Z2 FA 25	Z2 FA 26	Z2 FA 27	Z2 FA 28
	Z2 FA 29	Z3 FA 30	Z3 FA 31	Z2 FA 32	

Zone

Fuel Assembly ID

Cell Number

- **Dominion Template for Loading Map had Zones Z1a and Z1b locations reversed**
- Resulted in 12 F/As distributed over 7 casks with decay heat greater than zone assembly specific limit being loaded at North Anna
- Resulted in 5 F/As distributed over 4 casks with decay heat greater than zone assembly specific limit being loaded at Surry
- Zone assembly specific limit was exceeded by a maximum of 59 Watts

Corrective Actions

Actions Taken Upon Discovery

- Condition Report submitted to Central Reporting System
- Contacted CoC Holder for guidance on interpretation of Technical Specifications
- Operability assessment
- Notification of Shift Manager
- Preparation of 24 HR NRC notification per Technical Specifications

Corrective Actions

Formal Condition Report Review and Assignments:

- Condition Report Review Team (CRT) is a multi-discipline, multi-departmental team which meets to assign Condition Report significance levels and assignments. Makes determination of whether OE Report will be generated.
- Corrective Action Assignment Review Team (CAART) made up of site management meets to review Condition Report significance levels and assignments proposed by CRT, directing changes, where appropriate.

Corrective Actions

Additional Corrective Actions:

- Perform extent of condition review for Fleet
- Determine site specific actions to restore compliance
- Provide 30 day report to NRC
- Perform Apparent Cause Evaluation (ACE) to investigate organizational and programmatic concerns
- Prepare Operating Experience (OE) Report

Corrective Actions

- 24 hr notification made to NRC on March 25, 2011 (Event Number 46697)
- 30 day report made to NRC on April 25, 2011
- CoC holder performed analysis to show as-loaded canisters did not result in system design limits being exceeded (i.e., fuel clad temperature, canister, basket, poison material temperatures, internal pressure)
- Request for exemption to regulations requiring compliance with CoC Technical Specifications for affected canisters at time of loading was submitted July 21, 2011 and approved April 12, 2012.
- Apparent Cause Evaluation concluded there was inadequate procedural guidance to verify Technical Specification requirements; as a result the following actions were taken:
  - Reviewed and revised as needed affected procedures and guidance
  - Provided additional training to personnel tasked and qualified to perform fuel certification document preparation
  - Verified that all evaluations related to meeting the Technical Specification requirements of the storage system, Technical Specification information, and station best practice information have been properly documented and reviewed, correctly applied to loaded casks, and included in current fuel certification procedures.

Corrective Actions

- Operating Experience Report posted to INPO, 5/3/11, (OE33351) providing:
  - Description of Event
  - Date of Event
  - Location of Event
  - Significance/Consequences of Event
  - Lessons Learned for the Industry
  - Applicability to Industry
  - Causes
  - Corrective Actions
  - Other similar OE Reports
  - Contact Information

Sharing in-house operating experience information with the industry is an integral part of the Dominion OE program. The major criterion for reporting in-house operating experiences to the industry is the information shared would be useful to other stations in preventing similar events.