

22nd Annual Regulatory Information Conference

GSI-191 Looking Back and Going Forward

"Maintaining Containment Recirculation Sump Functionality Following Implementation of Generic Letter 2004-02"

Paul Leonard
Donald C. Cook Nuclear Plant
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GL 2004-02: What We Did

- Containment Walkdowns
 - Debris Source Identification & Quantification
 - Material Condition Assessments
- New Strainer Installations / Other Modifications
- Removed Unnecessary Debris Sources from Containment
- Determination of Components in Recirculation Flow Path

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GL 2004-02: What We Did

- Analysis
 - Containment Recirculation Water Level
 - Containment Flow Paths (Upstream Effects)
 - Debris Generation
 - Debris Transport
 - Chemical Effects
 - Strainer System Head Loss
 - Net Positive Suction Head (NPSH)
 - Downstream Wear and Blockage

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GL 2004-02: What We Did

- Testing
 - Jet Impingement Testing of Containment Materials
 - Containment Materials Design Basis Accident (DBA) Testing
 - Debris Material Erosion Testing
 - Debris Material Transport Testing
 - Debris Only Strainer Head Loss Testing
 - Chemical Effects Strainer Head Loss Testing
 - Downstream Flow Path Blockage Testing

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Analysis and Testing Results

- The analysis and testing resulted in a significant quantity of numerical inputs and analytical assumptions that form the basis for concluding that the regulatory requirements specified by GL 2004-02 are met.
 - These attributes, along with the results obtained, form the Design Basis for the Containment Recirculation Sump (CRS) function

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How is the Design Basis Maintained and Protected Following Closure of GL 2004-02?

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Approach Taken by D. C. Cook Nuclear Plant (CNP)

- Established an Engineering Program for maintaining and monitoring the CRS function
- Performed reviews of, and revised a significant number of plant processes, procedures, engineering specifications, and design standards to incorporate necessary elements of the CRS Program

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Approach Taken by CNP

- Established an "Ongoing" NRC commitment to maintain programmatic requirements that will protect the CRS function
- Revised an Engineering Design Specification for materials to be installed in containment
- Established specific procedural controls for performing work in containment in Modes 1 – 4 to protect the CRS function

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Approach Taken by CNP

- Updated the Final Safety Analysis Report (FSAR) to ensure sufficient information is provided for this "New" accident analysis
- Significantly revised the procedures for performing changes to the plant to ensure CRS requirements are met
- Provided information in procurement procedures to ensure material compatibility with containment requirements

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Approach Taken by CNP

- Provided training to Engineering personnel to enable understanding of the new requirements associated with the CRS function
- Developed a “Margins” document to assist Operations and Engineering personnel when an unexpected condition is identified in containment

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Why Is This Important?

- Design and Licensing Basis Must Be Readily Available to Plant Personnel
 - Prevent unnecessary challenges to the CRS function
 - Provide the necessary links to supporting documents for future changes to the plant
- Aging Workforce
 - Those who have knowledge of the issue resolution path today may not be here tomorrow to answer the questions

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THANK YOU

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