Discussion on AP1000 Component Interface Module and Defense-in-Depth and Diversity Design

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Purpose and Expected Outcome

- Purpose: To communicate the staff's findings and position for the AP1000 Component Interface Module (CIM) and the Defense-in-Depth and Diversity (D3) Design.
- Expected Outcome: An understanding of what further information is needed to accept the AP1000 CIM and D3 design. Also, the schedule for when the information will be provided.

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Topics

- Background
- Component Interface Module
- Defense-in-Depth and Diversity
- Path Forward

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Background

- On March 24, 2009, the staff indicated in a letter to Westinghouse that, among other items, there was a significant lack of information regarding the CIM and D3 design (ADAMS ML090710662).
- In Chapter 7 of the AP1000 Safety Evaluation Report with Open Items, the staff identified the lack of design information for the CIM and D3 design.

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Background (cont.)

- In December 2009, Westinghouse provided additional information for the CIM and D3 design in the following technical reports:
  - WCAP-17179, "AP1000 Component Interface Module Technical Report," Rev. 0
  - WCAP-17184, "AP1000 Diverse Actuation System Planning and Functional Design Summary Technical Report," Rev. 0

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Background (cont.)

- A proprietary AP1000 Diverse Actuation System Setpoint Methodology was submitted in October 2009

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Component Interface Module

- Insufficient description of the CIM and safety-related remote node controller software development process
  - WCAP-17179 references NRC reviews that are not part of the AP1000 licensing basis (i.e., Wolf Creek application).
  - WCAP-17179 references reviews are associated with different systems (i.e., Common Q equipment and ALS system).

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Component Interface Module (cont.)

- Software development process for the CIM and safety-related remote node controller should address criteria in SRP BTP 7-14.
- The software development process description should clearly outline the interface between Westinghouse and CS Innovations.

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Defense-in-Depth and Diversity

- The AP1000 D3 design credits Diverse Actuation System (DAS) manual controls to meet probabilistic risk assessment goals. However, performance requirements and their technical basis are not provided for the DAS manual actions
  - Example: Expected and required time for operator action.

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Defense-in-Depth and Diversity (cont.)

- Automatic DAS functions are provided. However, there are no performance requirements for the DAS automatic setpoints
  - Example: Will time delays or setpoint offsets be used? What is the basis for the delays or setpoint offsets?
- DAS reliability needs to be addressed (currently 2 out of 2 system).

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Defense-in-Depth and Diversity (cont.)

- Why is there a 14 day Technical Specification allowed outage time for the non-credited DAS automatic function and a 30 day allowed outage time for the credited manual DAS controls?
- How is the submitted AP1000 DAS Setpoint Methodology part of the AP1000 design control document?

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Path Forward

- NRC staff requests Westinghouse to identify how the technical issues will be addressed and the schedule for providing the information.