



STATUS OF AP1000 OPEN ITEMS - ELECTRICAL SYSTEMS

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Agenda

- Open Item (OI) SRP8.3.2-EEB-3 (Battery Sizing Calculations)
- OI SRP8.3.2-EEB-4 (Battery Qualification)
- OI SRP8.3.2-EEB-5 (Battery Charger Calculations)
- OI SRP8.3.2-EEB-8 (AC System Design Calculations)
- OI SRP8.3.2-EEB-9 (Coordination between Battery Chargers and Inverters)
- Staff Schedule for Closure



Open Item SRP8.3.2-EEB-3&5

(Battery & Charger Sizing Calculations)

- The staff finds both items resolved provided the following is clarified by the applicant:
 - In APP-IDS-EOC-001 Rev 0, the stated required capacity of IDSC-DB Division C, 72-hour battery is not consistent with the DCD rating of 2400AH.



Open Item SRP8.3.2-EEB-4

(Battery Qualification)

- This issue can be considered resolved provided the following information is provided:
 - The applicant qualification program is non-conservative and needs to be amended to show that the qualification test reflects yearly testing as recommended by industry consensus guidance (i.e., EPRI), or provide technical justification for the proposed test plan.



Open Item SRP8.3.2-EEB-8

(AC System Design Calculations)

- This issue is considered resolved based on the following:
 - The applicant states that the results of the analysis of the onsite power distribution system demonstrate that adequate voltages at the terminals of the battery chargers are optimized for the maximum and minimum variations of the offsite power for events such as a unit trip, LOCA, startup and shutdown. This resolves the staff's concern.



Open Item SRP8.3.2-EEB-9

(Coordination Between Battery Chargers and Inverters)

- The applicant should clarify the following:

The applicant states that the battery chargers and voltage regulating transformers in the AP1000 design are used as isolation devices. DCD Section 8.3.2.2 states that these isolation devices will be periodically tested to verify their current-limiting characteristics. Since this is not an COL interface item or COL Action Item, indicate where this requirement will be located (TS or applicant controlled document) so that this periodic test requirement is satisfied by each COL applicant



Open Item SRP8.3.2-EEB-9

(Coordination Between Battery Chargers and Inverters)

- This issue can be resolved provided the applicant supplement the DCD based on the following:
 - In response to RAI EEB-9, the applicant states that the inverter dc input protection will be set at least 10% higher than the battery charger trip setpoints to prevent the inverter tripping before the battery charger. In the staff's view the safety- related inverter high dc input voltage trip setpoint, and the associated battery charger high dc output voltage trip setpoint, should be coordinated in both magnitude and time (see the following attachment). The applicant needs to amend the DCD to include their RAI response as modified.



Open Item SRP8.3.2-EEB-9 Attachment

- The inverter dc input protection will be set at least 10% higher than the battery charger trip set points. In addition, the time delay for the inverter high dc input voltage trip will be set higher than the time delay for the battery charger to prevent the inverter tripping before the battery charger.



Staff Schedule For Closure

- Staff Complete Audit activities -May 2010
- Staff Issue Audit Report –June 9, 2010
- Staff Revise Safety Evaluation Report (SER) w/OI –June 23, 2010
- Staff Complete Chapter 8 Final SER –June 30, 2010