

AP1000 Sump related **issues**

DEBRIS SOURCE TERM

- As a design basis value, Westinghouse assumed a latent debris source term for fiber that is significantly less than the approach recommended in the NRC Safety Evaluation of NEI Guidance Report 04-07 (GR). Westinghouse did not provide a technical basis for the design basis value.
- A relatively small amount of latent debris is assumed to be transported to the IRWST and recirculation screens. The Westinghouse evaluation did not include enough information for the staff to determine if the analysis was realistic or conservative with respect to treatment of vertical surfaces, miscellaneous debris, amount of thermal insulation, appropriateness of sample plants, and transport assumptions.
- There is no linkage between the Combined License Information Items and the key analysis assumptions associated with latent debris, cleanliness, coatings as well as short-term and long-term modifications.

DEBRIS SOURCE TERM

- Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) are not sufficient to demonstrate key analysis assumptions associated with debris sources (e.g., insulation material), coatings, signage, aluminum and chemicals inside and outside the zone of influence (ZOI) will be met. Additionally ZOI and flood up zones are not identified.
- Because the design basis debris source term is not established, the staff can not accept the screen head loss testing, core head-loss testing, downstream effects analysis, and other evaluations that use this debris source term.

IN-CORE DOWNSTREAM EFFECTS

- The core head loss testing submittal APP-FA01-T2R-001 rev. 0 uses a test section not representative of the AP1000 fuel assembly and core design.
- Westinghouse did not justify the applicability of the bump-up factor applied to the chemical deposition model used in the generic PWROG topical report on downstream effects in the core to the AP1000 plant.

Control Room Habitability

- The zero in-leakage control room has not been justified.
- The basis for the treatment of testing uncertainties has not been addressed.
- The effective in-leakage through the doors has not been established. A number of unsupported assumptions went into the calculations.
- New actuation of the air canisters creates problems that have not been addressed. There does not appear to be dose analyses that support habitability of the technical support center.
- There is still no agreement of the Technical Specification Surveillance on tracer gas testing.