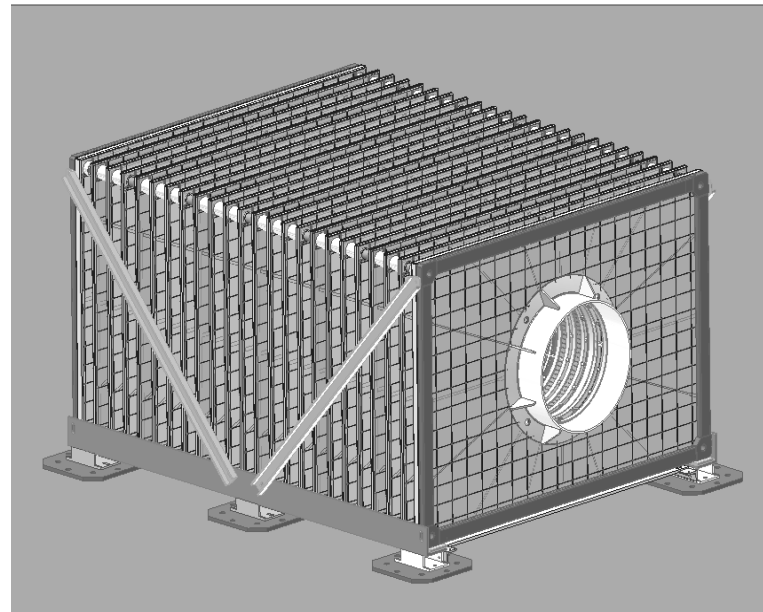


NRC Strainer Vendor Meeting on Chemical Effects



October 19-20, 2006



imagination at work

Background

- Preliminary testing on the impact chemical products has shown a significant increase in head loss.
- Introduction of less than a few percent of the amount predicted by WCAP-16530-NP has resulted in large head loss values.
- Method of incorporating the impact of chemical effects is being evaluated.
 - WCAP model conservatism
 - Input refinements
 - Design changes
 - Testing protocol

GE Status of Chemical Effects Testing

- Initial approach was to evaluate plant specific “bump-up” factors based on tests performed at Alion facilities.
 - GE would provide test article and plant specific debris loading.
 - Alion would characterize chemical product formation in accordance with WCAP-16530-NP and conduct head loss testing with and without chemical products.
 - A bump-up factor would be calculated to be used for plant strainer design.
- Chemical effects evaluation with the above approach is presently on hold for most of GE customers.

Status of Diablo Canyon Planned Activities

- Previous testing by Diablo Canyon has shown that:
 - Acceptable head loss can be achieved when the debris does not cover the entire strainer surface.
 - Fiber debris load should be reduced to prevent bed formation over the entire surface.
- Pending the results of on-going plant-specific jet impact testing, the planned debris reduction modifications include:
 - Install three debris interceptors.
 - Modify reactor cavity door to enhance debris flow to the cavity.

Status of Diablo Canyon Planned Activities

- Remove / replace or jacket high density fiberglass piping insulation.
- Double-jacket calcium silicate-insulated piping.
- Remove / replace or shield fiberglass insulation on steam generators and pressurizer.
- Remove fiberglass in fire stops.
- Add cable tray covers to shield fiberglass-insulated cable.

GE Planned Testing for Diablo Canyon

- Chemical effects materials (aluminum oxyhydroxide and sodium aluminum silicate) will be generated by PG&E using the WCAP-16530-NP methodology.
- Integrated sector tests will be performed by adding the particulate and fibrous debris first to visually confirm available clean surface area and then introducing the chemical precipitants after head loss reaches steady state.
- Confirmatory tests will add chemical precipitants first and then add debris.

GE Planned Testing for Diablo Canyon

- Anticipated debris load will result in nominal fibrous debris thickness of the order of 1/32”.
- Fuel grid chemical effects testing will be performed.
- GE is considering alternate solutions to mitigate the impact of chemical effects.