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PWR Owners Group GSI-191 Closure Activities: Corrosion and Fuel Assembly Test Update

NRC Public Meeting

April 16, 2014

PRESSURIZED WATER REACTOR OWNERS GROUP

AGENDA

- Corrosion Test Objectives
- Facility
- Key Parameters
- Status
- Fuel Assembly Test

Corrosion Test Objectives

1. Confirm the autoclave test results for 24 hours.
2. Demonstrate acceptable head loss over same time frame.

Facility

- Use of existing facility components:
  - Subscale test section.
  - Similar fiber and particulate debris addition method as used in current configuration.
- Additional equipment:
  - A large tank to function as an autoclave (~800 gallons).
  - A chiller (to cool autoclave discharge).

Key Parameters

The test is designed to develop and use a prototypic debris bed.

- Elevated temperature in autoclave to generate corrosion products; simulate sump temperatures.
- Fiber debris size distribution as determined by Alden bypass tests.
- Flow rates representative of fuel assembly flow.
- Particulate size distribution to be determined.
- p:f ratio to be prototypical; details TBD

Status

- A test matrix, and the rationale for the test matrix, is being developed.
- The in-the-bag versus out-of-the bag testing will provide input to the corrosion test matrix.

Fuel Assembly Testing

- Purpose of test is to confirm subscale test scaling.
- Key Parameters:
  - Flow rates representative of fuel assembly flow.
  - Full area fuel assembly geometry.
  - Fluid properties same as subscale test.
- Test matrix to be determined.

Questions?

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