US EPR™ Retention System Testing

Fariba Gartland
Manager – Plant Engineering

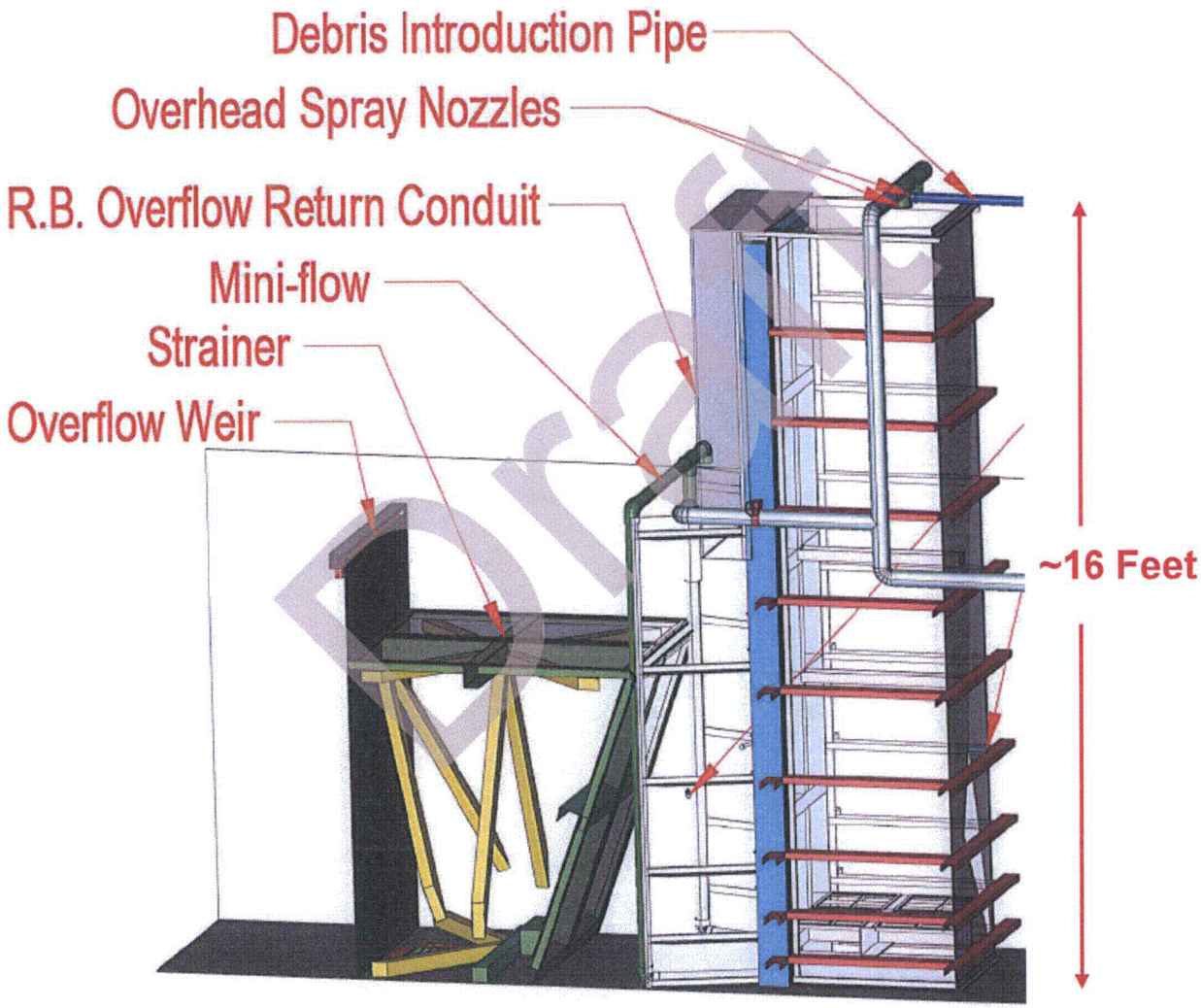
EPR™ by AREVA

AREVA

Introduction

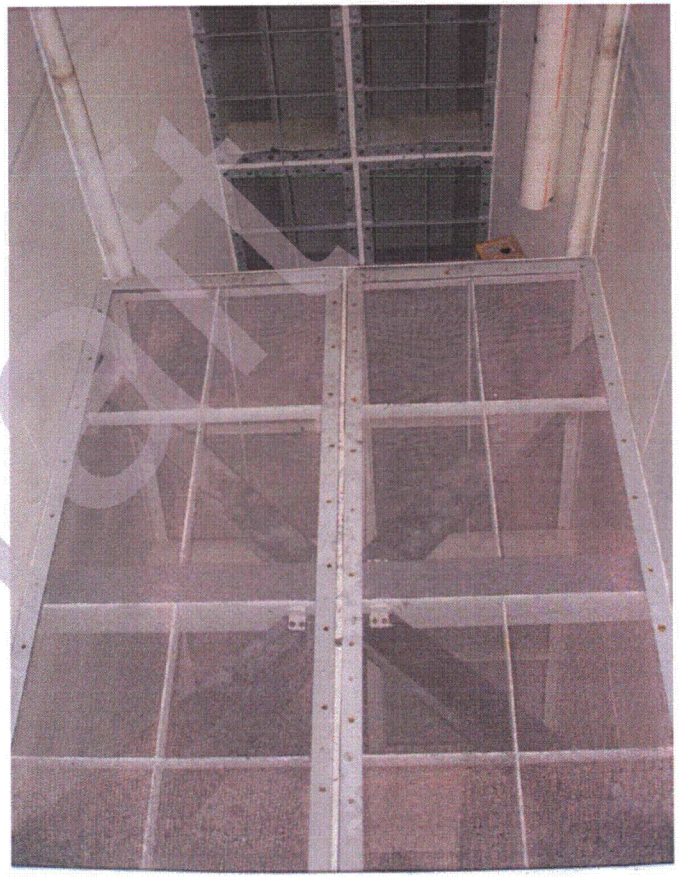
- US EPR Test Overview
- US EPR Test Facility
- US EPR Future Testing

Test Flume



Test Flume Pictures

Downstream of Test Flume Retaining Basket



Top of Test Flume Strainer with Retaining Basket in Foreground

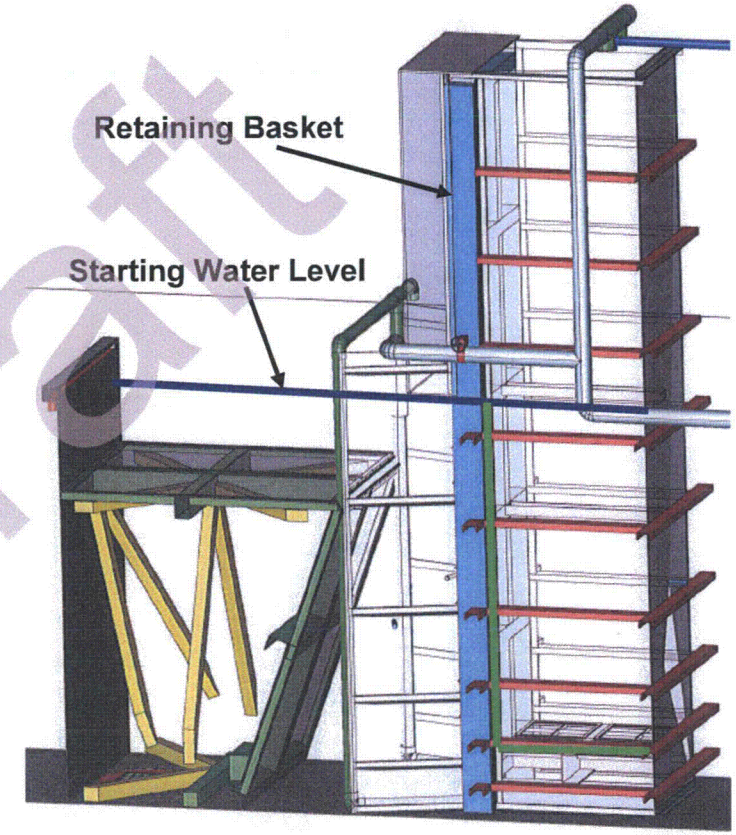
Test Flume Pictures

Submerged Test Flume Strainer

Retaining Basket Overflow

Future Testing

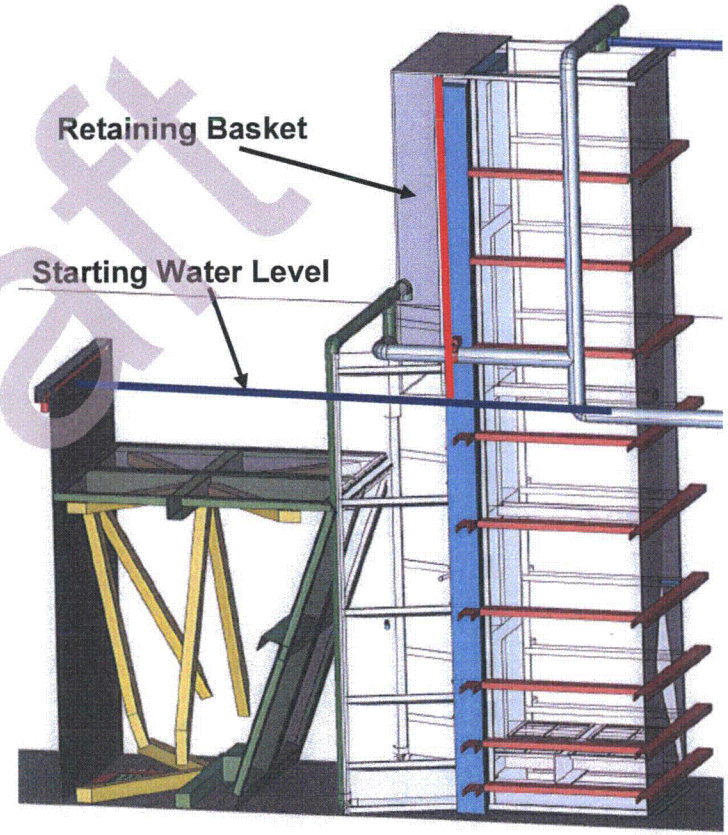
- 100% of debris and flow into 1 of 4 retaining baskets
- Additional thin bed testing
  - First thin bed batch is 0.7 lbm fine fiber
  - Enough fiber to create a 1/8th inch fiber bed on the wetted basket area (green)
  - Batching covers the wetted screen only (not structure)



US EPR™ Test Flume

Thin Bed Testing

- Two flume turnovers and a stable retaining basket head loss before next batch addition
- Second batch size decreases (0.5 lbm)
  - Amount for a 1/8th inch fiber bed on the dry basket area (red)
- 0.5 lbm batch additions continue until all fiber is added or strainer thin bed formation
  - 0.5 lbm is equal to a 1/28th inch fiber bed on the strainer



US EPR™ Test Flume

Thin Bed Testing

- Thin bed determined as a "significant" increase in measured strainer head loss
  - Fiber additions will stop at this point
- Bypass samples will be collected throughout
  - Sampling port within recirculation piping
  - ~30 feet downstream of strainer sump suction, prior to the recirculation pump

Open Items

Specific Feedback Requested:

- Initial fiber batch size for the proposed thin bed test if AREVA's approach is not acceptable
- Amount of smaller additions before and after a basket overflow if AREVA's approach is not acceptable
- The criteria to determine a thin bed on the strainer if AREVA's approach is not acceptable

Summary

- US EPR Test Overview
- US EPR Test Facility
- US EPR Future Testing