

## **SALEM BYPASS TESTING INFORMATION**

At Salem bypass tests were done at CCI facility in 2006 and 2008.

The 2006 tests were performed in the Multi Functional Test Loop (MFTL). This test loop had 40 pocket 1-sided strainer modules installed at one end of the flume. The top 20 pockets were blocked off in order to more closely simulate the height of the installed strainers at Salem. The tests were run primarily with NUKON only (1 test included Kaowool). The fiber was not baked in these tests.

The 2008 tests were also performed in the MFTL. The test loop had a 42 pocket strainer test module (2 sides which are each 3 pockets wide by 7 pockets tall) which was placed near the middle of the flume. The strainer module was prototypical (i.e. based on the installed strainer design) and was manufactured specifically for the Salem testing. The tests included three fiber types in the fiber debris mixture (NUKON, Kaowool, and Fiberglas). The NUKON and Kaowool fiber was baked in these tests to simulate exposure to hot surfaces. The Fiberglas fiber was not baked because it is not installed on hot piping in the plant.

The NRC Staff witnessed Salem strainer head loss tests performed in the MFTL with the 2-sided test module on April 20-25, 2008. The NRC observations from these tests are documented in a trip report dated July 16, 2008 (ADAMS Accession No. ML081640193). In this report, the NRC concluded that the test methods, including fiber debris preparation methodology, employed by CCI were generally prototypical or conservative. The fiber debris bypass tests conducted in 2008 utilized the same fiber preparation methodology as was witnessed during the strainer head loss tests. In addition, in the fall of 2007, debris samples similar to the debris used in MFTL testing prepared by CCI were provided to the NRC staff for review.

The preparation of the fibrous debris used in the bypass tests as described in Section 3f.4.1.5.7.1 of the final supplemental response submitted in April 2012 (PSEG letter LR-N12-0124) is also consistent with the fibrous debris preparation guidelines issued by NEI in January 2012.

A detailed discussion of the 2006 and 2008 Salem fiber bypass tests has been provided to the NRC in Section 3f.4.1.3 and 3f.4.1.6 of the Salem final supplemental response. The methodology to determine the amount of bypass through the strainer modules was same in both 2006 and 2008 tests and is summarized below.

- A 0.31 mm stainless steel mesh was placed in the test loop to collect the bypassed fiber.
- Samples were taken periodically from the test loop to determine the bypassed fiber size distribution.
- The dry weight of the collection screen was recorded prior to and after each test. The difference in the two weights is the mass of material which bypassed the strainers.
- The fiber concentration in each grab sample was determined by passing the sampled water through two consecutive paper filters with a screen size of 8 microns and 0.45 microns, respectively.
- The mass of material on the collection screen was combined with the mass of material from the grab samples to determine the total mass of fiber bypass.