

From: "Gisclon, John" <JOGISCLO@epri.com>
To: "Robert Tregoning" <RLT@nrc.gov>, "Bhagwat Jain" <BPJ@nrc.gov>
Date: 3/24/05 10:34AM
Subject: Analyses Requested for Resolution of Run 1 Issues

Messrs: Robert Tregoning

B. P. Jain

USNRC

As previously discussed, industry met with GSI-191 resolution vendors on Monday, March 21, 2005. One of the purposes of this meeting was to identify information necessary to enable these vendors to effectively and correctly identify the impact of chemical effects on the GSI-191 issue and to propose options for resolution of adverse effects.

For run 1 (NaOH buffer) two similar potential issue areas were identified as requiring information. The areas both have potential fibrous debris bed flow resistance impacts, and involve characterization of the sedimentary and precipitate material. Although characterization of materials has been previously discussed, the vendor meeting has identified specific areas that need to be addressed in order to be able to quantify and deal with chemical effects products that may affect fibrous debris bed head loss.

For run 2 (TSP buffer), no precipitation was observed, and the sediment may or may not contain chemical reaction products, however, it probably does have the potential to impact fibrous debris bed head loss. Therefore characterization of run 2 sediment is similarly deemed necessary.

The following information is considered essential:

Sedimentary material (runs 1 and 2):

- * Qualitatively, what is the settling behavior of this material?
Please perform the testing requested during the week of March 7, 2005 (run 1 only).
- * What fraction of the material collected from the test tank after the test (sediment) is:
 - o Fiberglass
 - o Added particulate debris inserted at the beginning of the test, including both concrete dust and the surrogate latent particulate matter

- * Characterize the remaining material by determining:
 - o The quantity (total mass) of sedimentary material. (It is recognized that this will be an estimate as some of the material was deposited on fiberglass pillows, etc.)
 - o Size distribution of chemical reaction products (can be performed by examination of SEM images)
 - o Average density of chemical reaction product material separated from the fiber and added particulate. The average density can be determined by weighing the material in a dry form, and then immersing into water and noting the displacement.
 - o The elemental composition
 - o The chemical compounds present
- * With the above information, recommend a non-chemically reactive surrogate material which could be employed for determination of head loss characteristics.

Precipitant material (run 1 only):

- * Characterize the material by determining:
 - o Total quantity (mass) of precipitate material relative to the sample fluid volume tested, time, and temperature
 - o Size distribution (can be performed by examination of SEM images)
 - o Average density of material separated from the fiber and added particulate. The average density can be determined by weighing the material in a dry form, and then immersing into water and noting the displacement.
 - o The elemental composition
 - o The chemical compounds present
- * With the above information, recommend a non-chemically reactive surrogate material which could be employed for determination of head loss characteristics.

It is noted that characterization of chemical reaction products is an attribute of the ICET program and is noted in both the MOU addendum and the Test Plan.

Please provide a plan and schedule for providing this information.

Since this information is essential for GSI-191 resolution we would like to have this information as soon as possible, in any event before April 15, 2005 for run 1 and May 1, 2005 for run 2. If LANL is unable to provide this information, we request that you inform us of this no later than April 1, 2005.

Sincerely,

John M. Gisclon

Test Program Lead

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