HLWYM HEmails

From: Randall Fedors
Sent: Friday, June 22, 2007 10:20 AM
To: Chandrika Manepally; Hakan Basagaoglu
Subject: RE: Action: Seepage Workshop Report - Thermal Conductivity Range in TPA

Hakan,

Several comments.

The part about sampling from a distribution of 1.2 W/m-K (Manepally et al) and 2.13 W/m-K (Fedors et al) is misleading. I'm sure of your thinking on why those reports were cited for the specific values at the end points. The values of 1.2 to 2.13 are the range from dry to wet thermal conductivity taken directly from DOE values.

It would be helpful to have short description of Scott's model, most importantly the variable net infiltration used as a top boundary condition. This helps explain the shape of the TH curve.

I think it is worth adding some comments on curve matching, something that reflects the following: In the figure, you can see that it is difficult to match any one curve. This is caused by the change in percolation rate at 2000 years and the changing effective thermal conductivity with saturation (as rewetting occurs). Over the years, we've decided to better match the curve when the thermal pulse is decaying, and not to match the curves at peak temperature. This is because nothing is going corrosion-wise during peak temperature time. Deliquesence becomes important during the time after peak temperature (135 C down to 100 C) as the thermal pulse is decaying away. Thus, ignore peak temperatures and match the decaying portion of the curves. The figure shows that the factors 0.9 to 1.1 are reasonable. Though, one could ask, why not higher factors to match the strong dip in the TH curve??

--Randy

>>> hbasagaoglu <hbasagaoglu@cnwra.swri.edu> 06/21/07 6:25 PM >>>

Randy,

Attached is the current version of the write-up. We will compare the "drift-wall temp vs. time" from TPA simulations against the results from MULTFLO simulations (blue curve in Fig. 6.1 of the attached write-up). We will get you the revised section tomorrow. Thanks,

Hakan

-----Original Message-----
From: Randall Fedors [mailto:rwf@nrc.gov]
Sent: Thursday, June 21, 2007 4:47 PM
To: Chandrika Manepally
Cc: hakan.basagaoglu@swri.org
Subject: RE: Action: Seepage Workshop Report - Thermal Conductivity Range in TPA

Not sure how this was resolved, I'm still concerned about using 2.30 W/m-K.

I thought I remembered asking about a TPA simulation to support multiflo's
estimate using a constant thermal conductivity. Scott's plot is comparing

multiflo (variable Kth) to multiflo (constant Kth). It does look like he used a constant percolation rate for the constant Kth simulation, but I thought I remember him saying otherwise. It is the TPA abstraction that needs to be matched with the TH simulation result.
Scott assumes his multiflo representation with constant Kth provides the same result as the TPA abstraction.

--Randy

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