

HLWYM HEmails

From: Randall Fedors
Sent: Tuesday, September 04, 2007 7:42 AM
To: Kaushik Das; Hakan Basagaoglu; 'cmanepally@swri.edu'
Cc: James Winterle; 'osvaldo.pensado-rodriguez@swri.org'
Subject: RE: Seepage Report Comments

Hakan,

1. Host-rock thermal conductivity response: (i) the curves in Figure 6-2 beg for 1.4 to be included, (ii) if it is not reasonable to include 1.4, then it is not physically realistic to assume the high value of 2.3 (or 2.1, or whatever) either.

Because the figure blared out that 1.4 might be considered, I think that some statements would be needed to address the obvious gap. I noted in the markup that the curve for $K_{th}=2.3$ only bounded the TH simulation results for a short, albeit critical time (for local corrosion). The curve for $K_{th}=1.4$, likewise only bounds the TH simulation results for a short time; but this may be of lesser importance because it bounds when the TH results put the temperature at or below 100C. Note that we have the lower bound at $K_{th}=1.9$, but from Figure 6-2, this value appears to best match in an average sense (not a lower bound sense) for 10,000 yrs. Note that the transition is marked down to 85 C. Thus, we would still have some logical inconsistencies. Any suggestions?

2. The code previously had factors accounting for these processes. Thus, I didn't want the report to imply that we finally introduced some new factors so that TPA could account for these processes. I think the sentence could easily be interpreted in the way I am implying here, which I don't think you meant to have it come out that way.

3. Just an artifact of the pdf editor. It only let me delete all the spaces, but you really should have 1 space. I did not intend to have anything else added there.

--Randy

>>> hbasagaoglu <hbasagaoglu@cnwra.swri.edu> 08/31/2007 7:33 PM >>>

Randy,

Many thanks for your very careful reading of the report, and we appreciate all your comments. We have incorporated almost all your comments and revisions into the revised version of the report. But, we have clarifications regarding three of your comments:

(1) Fig. 6.2 on page 6-4. (re: lower bound for the thermal conductivity of the host rock)
Your comments certainly make sense. We initially had the same thoughts for the lower bound for K and thought we may need to reduce the lower bound of K from 1.9 to 1.4. However, at that time, Osvaldo had pointed out two things:

(i) the use of $K=1.4$ would be relatively more conservative than $K=1.9$. A lower K would result in higher drift wall temperatures and hence the vaporization barrier above the drift

crown would last longer, which would reduce the chance for deep percolation to the EBS and potentials for inventory releases.

(ii) it is not physically realistic to assume a low K (as low as 1.4) at the repository scale.

We conducted a quick TPA run for a degraded drift, and found out that the WP temperature goes up to 240 C (in Subarea 3) in TPA runs when we set K to 1.4.

After all, 1.9 deemed reasonable previously. Please let us know if you have any further concerns or suggestions.

(2) Page 1.1. The second paragraph. Could you please let me know which of the five processes (listed in this paragraph) you would consider not accounted for by the seepage factors discussed in the report?

(3) 6th line from the top in the Summary Section (p. 7-1). You have highlighted, but I do not see any comments after 'the emplacement drift'. Could you please e-mail me if you have any specific comments there?

Kaushik may have additional comments/questions on Section 5. Apart from the comments above, the report has been revised in accordance with yours and Chris' comments (we will probably expect to receive additional comments from Chris on Sections 5, 6 , 7).

Thank you.

Hakan

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Recipients:

"James Winterle" <jwinterle@cnwra.swri.edu>

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"osvaldo.pensado-rodriguez@swri.org" <osvaldo.pensado-rodriguez@swri.org>

Tracking Status: None

"Kaushik Das" <kdas@cnwra.swri.edu>

Tracking Status: None

"Hakan Basagaoglu" <hbasagaoglu@cnwra.swri.edu>

Tracking Status: None

"cmanepally@swri.edu" <cmanepally@swri.edu>

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