HLWYM HEmails

From: David Pickett
Sent: Monday, November 22, 2004 10:46 AM
To: Tae Ahn
Subject: RE: Review Comments - Re: KTI items CLST 3.02, 3.05, ENFE 3.04

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Tae,

Have we re-examined DOE's CSNF degradation model lately to be sure that it is still as conservative as you say? They have been backing off conservatisms in other areas, and we should be sure that the spent fuel model hasn't also changed.

Thanks,

David

> -----Original Message-----
> From: Tae Ahn [mailto:TMA@nrc.gov]
> Sent: Monday, November 22, 2004 8:32 AM
> To: jmcmurry@cnwra.swri.edu; vjain@cnwra.swri.edu; Richard Codell
> Cc: david.pickett@swri.org; vijay.jain@swri.org
> Subject: RE: Review Comments - Re: KTI items CLST 3.02, 3.05, ENFE
> 3.04
>
>
> My overall comment is that DOE's SNF dissolution models are already
> extremely conservative whatever pH would be. Cladd failure would
> occur only pH less than 2.
>
> I would like to arrange a tele-conference among ourselves.
> Please let me know today if possible. I am available all day today.
> It needs to be quick, because these agreements need to be addressed to
> DOE this year. Thanx.
>
> >>> Vijay Jain <vjain@cnwra.swri.edu> 11/22/04 09:17AM >>>
> Tae,
>
> The low pH is as adverse as high pH. DOE by selecting a WP with
> 2DOE-SNF and 2-HLW glass as a representative WP may not be
> conservative because a WP with 5 HLW glass and 1 DOE-SNF could result
> in significantly higher pH (a pH of 10-12). This could have a
> significant adverse effect. DOE needs to show that their selection is
> adequate.
>
> Similarly an increase in surface area of the HLW glass would directly
> result an increase in the pH of the solution because the pH depends
> upon the amount of alkali released from the glass.
>
> Question really is that in EQ3/6 DOE has assumed that A516 attains a
> pH of 4-5 while in reality pH never goes below 7-8.
> If the starting pH of the solution is 4-5 then the final pH after the

> dissolution of glass will be between pH of 7-8.
> However, if the starting pH is 7-8 which is really observed, the final
> pH could reach above 10 resulting in an aggressive dissolution.
>
> I think these are significant issues pertaining to the methodology
> that DOE has adopted in defining in-package chemistry. In my opinion,
> these agreements can not be closed at this time.
>
> Vijay
>
> Vijay Jain
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> -----Original Message-----
> From: Tae Ahn [mailto:TMA@nrc.gov]
> Sent: Monday, November 22, 2004 8:04 AM
> To: jmcmurry@cnwra.swri.edu; Richard Codell
> Cc: Darrell Dunn; david.pickett@swri.org; vijay.jain@swri.org
> Subject: Review Comments - Re: KTI items CLST 3.02, 3.05, ENFE 3.04
>
> ** High Priority **
>
> Comment 1 - 4.1.2 "The DOE has not provided a technical justification
> for excluding these other types of codisposal WP"
>
> It is unclear how 2 HLW glass canisters give low pH less than
> 2 for cladd failure or affect SF dissolution rates which are already
> conservative enough.
>
> Comment 2 - 4.1.2 - The increase of surface area by 4 or any change of
> void volume, actually will increase pH. It would not affect the
> performance adversely.
>
> Comment 3 - 4.1.3 - A516 corrosion rates were determined
> experimentally, Why should they be lower? Even so, Comment 1 still
> applies.
>
> Comment 4 - 4.1.3 - In applying EQ 3/6 using immediate dissolutions of
> glass and SF, the question was about the time dependence. If both
> dissolve time dependently, how much pH would change. Would it be
> significant? (again see Comment 1)
>
> Comment 5 - Status of CLST 3.05 - a wide range of pH was considered.
> It would matter only at very low pH as mentioned in Comment 1
>
> As considering other CLST agreements, the arguments made here are
>
> Comments as we stated in other agreements as
>
> "Staff have several comments that may not be significant to waste
> isolation, but that DOE should address for consistency and to support
> a high-quality license application,. These comments are:"
>

> Overall, the agreements need to be closed.
>
>
> Please call me for further discussion
>
> David/Vijay: I wonder who will consolidate all reviews made on cladd
> performance. Please let me know if you need me. I hope that can be
> done quickly. It is ready.
>
>
>
> >>> Jude McMurry <jmcmurry@cnwra.swri.edu> 11/19/04 06:01PM >>>
> Tae and Dick,
>
> As part of the review of all of the DOE responses to KTI agreement
> items that are provided in the appendices of TBD No. 7, three
> agreement items have been identified -- CLST 3.02, CLST 3.05, and ENFE
> 3.04 -- for which we've concluded that in each case DOE has NOT
> presented enough information to close the agreements.
>
> Vijay Jain and I have written a draft review to the DOE responses for
> these three items, where we explain why questions still remain for
> these particular agreements. This draft is being submitted for
> in-house technical review at CNWRA, and it is scheduled to be
> transmitted officially to NRC on Dec. 10, 2004, for formal review and
> comment. Prior to that, though, would you care to look over the
> attached draft to see if you agree with our reasons for keeping these
> items open? In the case of ENFE 3.04, for example, we had earlier
> received a short note from you, Dick, indicating that at first glance,
> anyway, you thought this one could be closed. Since we're coming to a
> different conclusion than that, we'd like you to see the reasons.
>
> In the meantime, we'll carry on with our in-house technical review of
> this document in order to transmit it to you officially by Dec. 10 or
> sooner. But if you have questions or comments you'd like to see
> addressed before then, please let me or Vijay know.
>
> Thanks
> Jude McMurry
> J. McMurry, Ph.D.
> Senior Scientist
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> Ph. (210) 522-6935
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From: David Pickett

Created By: dpickett@cnwra.swri.edu

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"Tae Ahn" <Tae.Ahn@nrc.gov>
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