HLWYM HEmails

From: Paul Bertetti
Sent: Tuesday, March 08, 2005 11:31 AM
To: Hans Arlt; Jude Mcmurry
Cc: John Bradbury; James Winterle; Randall Fedors
Subject: RE: TSPAI.3.29

Jude and Hans,

I would suggest that even if the Ops plan text isn't modified explicitly, the work needed for this analysis is already included in the general way the Ops plan is laid out. We always strive to include supporting analyses for TPA, risk information, and license review preparation (previously we would have called that issue resolution). So, my take is that the text would already cover the scope and content of the work. We just have to make it a priority to work on that issue.

Since all issues can't be identified up front, there are always items that must be addressed that weren't explicitly called out in the Ops plan. I think we have done a good job over the years to modify our efforts to focus on just these sort of things. Active communication (as we have seen in the last few weeks) will help to ensure that we continue to work on issues that are of concern to NRC staff.

Paul

-----Original Message-----
From: Hans Arlt [mailto:HDA@nrc.gov]
Sent: Tuesday, March 08, 2005 10:17 AM
To: jmcmurry@cnwra.swri.edu
Cc: jwinterle@cnwra.swri.edu; pbertetti@cnwra.swri.edu; Randall Fedors; John Bradbury
Subject: RE: TSPAI.3.29

Jude:
Would it be possible to get something related to this issue in your Ops Plan for UZ3? Jim's hypothesis for why DOE has such a difference between matrix diffusion in the UZ and the SZ is just that at this point, a hypothesis.
[excerpt from below]
"A possible explanation is that the process of matrix
diffusion will have a more significant effect on delaying radionuclide transport for those radionuclides that sorb strongly. Thus, because the unsaturated zone is the first natural barriers to radionuclide transport, it will have the greatest effect on retarding strongly sorbing radionuclides. Nonsorbing or weakly sorbing species that reach the saturated zone are not as well attenuated by matrix diffusion and, therefore, matrix diffusion in the saturated zone does not appear to have as significant an effect in repository performance calculations."

Could your OPs Plan include activity which would refute or back this statement up with analyses, etc.?

I refer you to the 'Risk Information to Support Prioritization of Performance Assessment Models' from August 2002 (TDR-WIS-PA-000000 REV 01 ICN 01) to see the difference between the neutralized UZ analysis in Figure 31 and the neutralized SZ analysis in Figure 33. If you need a little more background Jim W. or I can fill you in.
Hoping it not too late, Hans

>>> Jude McMurry <jmcmurry@cnwra.swri.edu> 03/07/05 10:48AM >>>
Hans,

I was out of the office on Friday, so I missed this round of discussions about TSPAI.3.29. Just to chime in with a postscript to it all -- I was the one responsible for assembling the review letter that included TSPAI.3.29, and Jim Winterle's description below is accurate in terms of how the draft evolved. I edited Jim's original text so that it focused on the specific wording of TSPAI.3.29 ('intergration of active fracture model with matrix diffusion in the abstracted TSPA transport model'). This was consistent with the guidance to streamline our reviews for items that weren't high-risk. Sorry that this tie-in to historical discussions was omitted in the process, but glad you noticed.

Jude

-----Original Message-----
From: Hans Arlt [mailto:HDA@nrc.gov]
Sent: Friday, March 04, 2005 9:58 AM
To: jwinterle@cnwra.swri.edu; pbertetti@cnwra.swri.edu; John Bradbury
Cc: jmcmurry@cnwra.swri.edu
Subject: RE: TSPAI.3.29

Dan Rom indicated it isn't out yet, so maybe ...
It's just that we pointed to and referenced this agreement in a couple of our public letters and the current version of our response makes no mention of our earlier concern. As far as I know, UZ matrix diffusion is still the single most important natural barrier that DOE is using (based on my knowledge of older documents). If the compliance period goes beyond 10,000 yr, it will likely be even more significant. No blame anywhere. This event is highly unusual. I know how busy you all were. Thanks for your efforts, Hans

>>> James Winterle <jwinterle@cnwra.swri.edu> 03/04/05 10:45AM >>>
Hans,
This review was being assembled from several authors at the same time when we had been given guidance to streamline the reviews of low and medium agreement items. (I may be able to dig up the guidance if it is important). My guess is that the multiple inputs were edited to produce a document that was consistent with that guidance. I just found a draft copy of this review that Paul circulated for comment prior to finalizing it. I read that version and thought I agreed with the conclusions and that it was consistent with the guidance, I provided only a few editorial suggestions that Paul incorporated into the final. I can take the blame, Hans, for not reviewing the draft in light of your earlier request and checking for differences between what I originally provided and what ended up in the late draft. Is it too late to make revisions? --Jim

-----Original Message-----
From: Paul Bertetti [mailto:pbertetti@cnwra.swri.edu]
Sent: Friday, March 04, 2005 9:25 AM
To: 'Hans Arlt'; John Bradbury
Cc: James Winterle; Jude McMurry
Subject: RE: TSPAI.3.29

Hans,

I have attached a pdf file of what we sent up to NRC in January regarding TSPAI.3.29. The comments to which you refer may have been in an early version of the draft or may not have been included in the draft once the other TBD 10 reviews were added. I don't have any answers or additional information at this time.

Paul

-----Original Message-----
From: Hans Arlt [mailto:HDA@nrc.gov]
Sent: Friday, March 04, 2005 9:09 AM
To: PBERTETTI@cnwra.swri.edu; John Bradbury
Cc: jwinterle@cnwra.swri.edu
Subject: RE: TSPAI.3.29

Paul, John:
Sometimes I overlook and miss things, however I can not find the excerpt Jim is referring to in the current concurrence package. Anybody know what happened? Hans

>>> James Winterle <jwinterle@cnwra.swri.edu> 03/04/05 10:00AM >>>
Hans,
Below is an excerpt from the draft input that I provided to the TBD-10 review section for TSPAI.3.28 and 3.29. I was not the lead for this review, so I do not know how much it may have been edited before or after it was sent to NRC. --Jim

"X.2 Relevance to Repository Performance

Results of the sensitivity analyses for matrix diffusion in the UZ show that a significant reduction in the simulated dose rate history occurs when credit is taken for matrix diffusion (e.g., CRWMS M&O, 2000, Figure 5.2-14). NRC had previously commented that is not entirely clear why the process of matrix diffusion in the unsaturated zone has a significant affect on repository performance compared to the matrix diffusion in the saturated zone, which has be shown to have relatively little effect on performance calculations of dose history (e.g., Zeigler, 2002). A possible explanation is that the process of matrix diffusion will have a more significant effect on delaying radionuclide transport for those radionuclides that sorb strongly. Thus, because the unsaturated zone is the first natural barriers to radionuclide transport, it will have the greatest effect on retarding strongly sorbing radionuclides. Nonsorbing or weakly sorbing species that reach the saturated zone are not as well attenuated by matrix diffusion and, therefore, matrix diffusion in the saturated zone does not appear to have as significant an effect in repository performance calculations. "

-----Original Message-----
From: Hans Arlt [mailto:HDA@nrc.gov]
Sent: Friday, March 04, 2005 8:43 AM
To: jwinterle@cnwra.swri.edu
Subject: RE: TSPAI.3.29

Jim:
Your October email indicated that you would incorporate the background information I referenced in order to discuss and explain why NRC/CNWRA staff now understand

"why the risk
significance of matrix diffusion in the UZ is moderate to high compared to the relatively low risk significance of matrix diffusion in the SZ." and "It was, however, not entirely clear to NRC staff why the risk significance of matrix diffusion in the unsaturated zone seemed moderate to high compared to the apparently low risk significance of matrix diffusion in the saturated zone. This ambiguity should be clarified when DOE provides the additional information requested in technical agreement TSPAI.3.29."

>>> Hans Arlt 03/03/05 06:53PM >>>

After Femi's presentation on the FEHM DLL and the results of matrix diffusion runs, and Keith's comparison between results of FEHM and Tina's GoldSim model of matrix diffusion, I'm interested in our evaluation of DOE's response to the Agreement TSPAI.3.29 once again. Could somebody send me a copy of our evaluation? John, do you know how far along the TSPAI.3.29 agreement letter is in 'the process'?

>>> Jim Winterle <jwinterle@cnwra.swri.edu> 10/12/04 04:03PM >>>
Hans,
Thanks for providing this background information. This would be a good subject to discuss in the section on relevance to repository performance. --Jim

-----Original Message-----
From: Hans Arlt [mailto:HDA@nrc.gov]
Sent: Tuesday, October 12, 2004 2:47 PM
To: jwinterle@cnwra.swri.edu
Subject: Re: TSPAI.3.29

Jim:
Looks good; however,....
TSPAI.3.29 was often referred to in context with the UZ vs. SZ matrix diffusion issue which you and I discussed this morning.

Please include in your evaluation this aspect of the agreement, and please forward to Paul.

Below are two examples (also attached):

February 8, 2002: "Results of the sensitivity analyses for matrix diffusion in the UZ show that a significant reduction in the simulated dose rate history occurs when credit is taken for matrix diffusion (e.g., see TSPA-SR, Figure 5.2-14). It is not entirely clear to NRC staff why the risk significance of matrix diffusion in the UZ is moderate to high compared to the relatively low risk significance of matrix diffusion in the SZ. This ambiguity should be clarified, however, when DOE provides the additional information requested by NRC staff in TSPAI Agreement 3.29. Additionally, DOE has agreed to obtain further validation of the conceptual model for matrix diffusion in the UZ through completion of tracer transport testing in the Alcove 8-Niche 3 test (see USFIC Agreement 6.03)."

November 15, 2002: "It was, however, not entirely clear to NRC staff why the risk significance of matrix diffusion in the unsaturated zone seemed moderate to high compared to the apparently low risk significance of matrix diffusion in the saturated zone. This ambiguity should be clarified when DOE provides the additional information requested in technical agreement TSPAI.3.29. Additionally, DOE has agreed to:
- obtain further validation of the conceptual model for matrix diffusion in the UZ through completion of tracer transport testing in the Alcove 8-Niche 3 test (see agreement USFIC.6.03), and
- provide independent lines of evidence to provide additional confidence in the use of the active fracture continuum concept in the transport model which can influence the extent of matrix diffusion in the unsaturated zone (see agreement TSPAI.3.28)"

I seem to recall TSPAI.3.29 being referenced in a more recent review/evaluation, but I can't find it at the moment.

At present, I believe the DOE's performance outputs show only one natural
barrier: the unsaturated zone below the repository. This is basically due to the UZ matrix diffusion/sorption, making this a high significant item.

Thanks for your efforts, Hans

>>> Jim Winterle <jwinterle@cnwra.swri.edu> 10/12/04 09:26AM >>>
Hans,
I read over the entire Appendix C of TBD-10 for agreements TSPAI.3.28 and
3.29. I drafted up the attached review of TSPAI.3.29. This review is

incomplete because RT will need to add their review comments for TSPAI.3.28.. If this looks OK to you, this is what I will provide to Paul Bertetti to incorporate into the complete review.

Jim Winterle

Southwest Research Institute
CNWRA, Bldg. 189A
6220 Culebra Road
San Antonio, TX 78238

ph: 210.522.5249

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From: Paul Bertetti

Created By: pbertetti@cnwra.swri.edu

Recipients:
"John Bradbury" <John.Bradbury@nrc.gov>
Tracking Status: None
"James Winterle" <jwinterle@cnwra.swri.edu>
Tracking Status: None
"Randall Fedors" <rfedors@cnwra.swri.edu>
Tracking Status: None
"Hans Arlt" <Hans.Arlt@nrc.gov>
Tracking Status: None
"Jude Mcmurry" <jmcmurry@cnwra.swri.edu>
Tracking Status: None

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