

NOTE TO: P. Justus
FROM: J. Trapp *JTS 22 JAN 90*
SUBJECT: Review of CNWRA Report 90-003

The following are my comments on the above report. My comments are divided into two groups, comments on previously prepared comments, and comments on the report itself.

Comments on Previous comments.

1. Specific Comment 1

While it is true that the relevant time frame refers to the period of performance, the uncertainty relates to use of the geologic record in making the projection for the relevant time period. Both the comment and the specific write up could be stated more clearly. As such I agree there is not what I would call an inconsistency; there is an uncertainty

2. Specific Comment 30

I don't agree that the statement should be eliminated. As is evident from the technical exchanges on tectonics, this is still a point of contention between the NRC and DOE. What is sufficient? In addition, the testing program for the waste package is for "expected conditions" not for anticipated processes and events and is a point of contention.

The relevant time period for anticipated processes and events is not necessarily 10,000 years. The performance objectives are for various periods of time and the question is what period of the geologic record should be used to project forward to the relevant time frame.

3. Specific Comment 31.

Unanticipated processes and events are linked to the performance objectives. See 113(b) and (c).

4. Specific Comment 33.

I am not sure what the comment means. Please check what numbers are being referenced.

5. Specific Comments 35-40.

I agree with whomever wrote these comments. There may be technical uncertainty in the areas of concern, but I see no regulatory uncertainty. This type of logic expressed in these sections has been used so much in power plant licensing that I have no problems.

Additional Comments

1. RR1001, Page b-43 (specific comment 24)

I am not sure that it is necessary to develop consistent terminology. For example, can we use "anticipated processes and events" for requirements and "undisturbed performance" for the EPA requirements?

2. RR0071, page B-18

While I have no real problem with this "uncertainty" there is a problem which may be either an uncertainty or inconsistency in logic which needs

to be addressed someplace. As the rule is written, on one hand, there is the requirement that there be all the records and monuments, while on the other hand, there is the assumption in both 60 and 40 CFR 191 that people will still inadvertently drill into the repository. In addition, there is the other end of the scale which basically states that there is a need to evaluate the effects of deliberate intrusion if it is sufficiently credible to warrant consideration. (see 48 FR 28200, bottom third of first column) If the records exist the probability should be extremely low that inadvertent intrusion will occur (therefore it is probably not "sufficiently credible") but the probability would be quite high for deliberate intrusion (therefore "sufficiently credible") if we assume we are putting un-reprocessed spent fuel in as waste. Once there is an assumed loss of records, the probabilities would flip-flop. This is an area which needs to be better defined, either under anticipated processes and events or under the EPA conforming rule making as there is not only the problem of defining probabilities but defining consequences. I see nothing which really states how deliberate intrusion consequences would be factored into the analysis.

3. Page b-40, 1st full paragraph.

This could be cleared up. The relevant time frame is for the performance objectives, however, the relationship of the length of record from the Quaternary, pre-Quaternary etc and how this is to be translated forward is where things get to be a big mess. Under anticipated processes and events, the Quaternary record is to be used, while for unanticipated processes and events, more than the Quaternary record is to be used. It ends up with the problem as to what is reasonably likely and what is sufficiently credible. If you read 48 FR 28200 this becomes even more absurd as sufficiently credible is attempted to be clarified by using the term sufficiently credible.

4. RR1001, page b-44 to b-45.

The way this is worded I see no regulatory uncertainty, only technical uncertainty.

5. RR1002, page b-46 to 47

The complete citation for substantially complete containment requires the assumption of anticipated processes and events. Because we don't really know what anticipated processes and events means, it is impossible to define what substantially complete containment means. Both uncertainties need to be resolved together.

6. RR2001, page b-59

I see no regulatory uncertainty as it is clear the rule is referring to the Quaternary Period. There is technical uncertainty because different geologists use different criteria to define what they mean by Quaternary.

7. RR2001, Page b-62

I agree with the problem as stated here. I am confused as to the relationship of this with table 2, page 14, because I can't quite see how one would be a problem and the other not a problem.

8. RR2019, pages b-98 to 99

While I understand what the concern is that is being addressed, the way this is worded results in confusing the requirements for 60.122(c)17 and 60.122(c)18. Because (c)17 is for future mining/drilling, while (c)18 is for past activities a cross reference in the text of the write up could make the intent more clear.