

MEMORANDUM

To: K. Chang

CC: C. Boyars
G. Fuller
K. Stephens
L. Zaremba

From: R. B.. Moler *RBm*

Date: 17 April 1987

Subject: Sandia Critique of the Aerospace Demonstration Report

The Sandia comments on the referenced report are highly critical of the work. But the critique is itself replete with factual errors, innuendoes, and misinterpretations of the clear intent of the text being criticized, and in at least one case, distorts the text and then strongly criticizes the distorted version. The principal author appears to have a relatively poor conception of the bases on which most of the work is premised.

It appears that Bonano is not cognizant of the basic assumption of saturation concentration conditions at the container surface as a basis for the solutions to the diffusion equations. His conclusions are erroneous for this situation. (Even for the situation for which his conclusions are correct his derivation is wrong). Bonano's criticism of our analysis of the dimensionality of the solutions to the diffusion equations indicates that he misunderstands that we are showing that some models are such non-physical approximations of reality that they can be eliminated on quite general grounds. It is hard to believe that Bonano would not recognize that a 1-dimensional model is a highly unrealistic representation of a repository and the reason underpinning this conclusion. Bonano's statement concerning the existence of simple solutions to the diffusion equations for some of the more complex situations involved is very naive'. Certainly solutions for a few limiting cases exist, but these are not applicable to the reality of a repository. I wonder if Bonano considers that the complex work carried out by Chambre' and Pigford, and the studies carried out by Oliver to analyze these more realistic situations were merely pedantic exercises. Bonano's criticism of the statements made regarding a pair of correlated random parameters is a further display of a superficial reading of the text and missing its clearly stated intent.

I will provide to Ken Stephens detailed comments that he can use to consolidate into a full rebuttal of the Sandia critique. I have a high regard for the capability of the Sandia personnel and this material is not representative of the quality of work that is characteristic of this group. I am surprised that such work was allowed to be distributed outside the organization. It reflects poorly on their competence and objectivity. Perhaps as Bonano states his bias regarding his "demonstration for the bedded-salt and basalt methodologies" has affected his judgement. I would be very interested in seeing any reports that have been published on these analyses.

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