

October 1, 2003

Dr. H. Lawrence McKague  
Manager, Geology and Gerophysics  
Center for Nuclear Waste regulatory Analyses  
6220 Culebra Road  
San Antonio, TX 78228-5166

SUBJECT: ACCEPTANCE OF "3DSTRESS™ VERSION 3.0 CODE" BY D.A. FERRILL AND  
N.M. FRANKLIN (INTERMEDIATE MILESTONE 06002.01.062)

Dear Dr. McKague:

The subject deliverable, dated August 15, 2003, that you transmitted to me by CD has been reviewed for its functionality by U.S. Nuclear Regulatory Commission staff (NRC). It is up and running at NRC, except for the help files.<sup>1</sup> 3DSTRESS™ Version 3.0 is programmatically and technically acceptable. A CD copy that includes help files that can be readily downloaded should be placed in the Public Document Room. Please contact me within 10 days of receipt of this letter to make sure that this matter is resolved, or is being resolved.

Users now have the ability to analyze dilation and slip tendency on a fracture or fault surface in a 3-dimensional stress field. This feature has the potential for refining the predictive capability of the code to include the depth parameter of a future brittle failure point, and the capability to retrospectively consider the depth dimension of past stress fields. I note the additional upgrades, but have not tested them: (a) can load 3-D stress fields, (b) added flexibility in inputting data and analyzing data on Mohr Graphs and plots, (c) added multiple viewers to allow independent input files of fracture data to be loaded, viewed and maneuvered. You have further refined a tool that can be applied to review and evaluate dilation, slip and leakage on through-going faults and fractures from the surface to the depths of underground operations at Yucca Mountain and elsewhere.

If you have any questions, please contact me at 301-415-5669, [psj@nrc.gov](mailto:psj@nrc.gov).

Sincerely,

**/RA/**

Philip S. Justus, Program Element Manager  
Division of Waste Management  
High-Level Waste Branch  
Office of Nuclear Material Safety  
and Safeguards

cc: M. Leach  
B. Meehan

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<sup>1</sup> Help files: Based on experience with satisfactory resolution of a similar problem with an earlier version (i.e., erratic computer translation of font case during process of copying files to a CD), and consultation with Mr. Franklin (advised NRC's UNIX administrator to access the help files directly from a PTF source), I am confident that the help files glitch will be resolved.

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**/RAI**

Philip S. Justus, Program Element Manager  
Division of Waste Management  
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Office of Nuclear Material Safety  
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cc: M. Leach  
B. Meehan

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