

January 28, 2003

Dr. H. Lawrence McKague
Geology/Geophysics Element Manager
Center for Nuclear Waste Regulatory Analyses
6220 Culebra Road
San Antonio, Texas 78228-5166

SUBJECT: DELIVERY OF 3DSTRESS VERSION 2.0 SOFTWARE (INTERMEDIATE
MILESTONE 01401.472.260)

Dear Dr. McKague:

The subject deliverable in the form of a compact disk (CD) containing 3DSTRESS Version 2.0 executable, on-line help files, and sample data for both Irix and Solaris operating systems was received on time, September 27, 2002 (letter dated September 25, 2002 from H. Lawrence McKague to Philip S. Justus). A follow-up letter and CD was sent from McKague to Justus, dated November 5, 2002. This letter correctly identifies the deliverable as an Intermediate Milestone (the September letter erroneously labeled the deliverable as an Administrative Item).

The software enables the stress-state of faults and fractures to be displayed in 3-dimensional graphics mode. This Version 2.0, by David Ferrill and N. Franklin, includes the ability to represent a stress field on fractures that varies with depth. Lithostatic and fluid pressure can also be represented in this Version. This version promises to be capable of performing sensitivity studies and analyses of fracture properties and variable stress loads on Yucca Mountain fracture and fault systems. This tool will continue to be used to refine evaluations of DOE disruptive scenarios that include the impingement of stress loads on fractures and faults. 3DSTRESS enables the staff to conduct rapid verification tests and analyses of DOE's conclusions about the future behavior of Yucca Mountain's fracture system under projected mechanical loads due to tectonic stress, differential thermal stress, and static and dynamic stress that might induce rockfalls in the drifts.

I have Version 2.0 up and running, and with the assistance of G. Stirewalt of Mandex, our computer group administrator, and J. Hughes, UNIX System Administrator, verified that the new components are operational.

The deliverable is acceptable. The CD won't be placed in the Public Document Room, due to copyright restrictions, but can be made available to approved viewers by arrangement, as necessary.

Sincerely,

/RA/

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

January 23, 2003

Dr. H. Lawrence McKague
Geology/Geophysics Element Manager
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