



United States Department of the Interior



GEOLOGICAL SURVEY
BOX 25046 M.S. 425
DENVER FEDERAL CENTER
DENVER, COLORADO 80225

IN REPLY REFER TO:

January 24, 1991

John J. Linehan, Director
Repository Licensing and Quality
Assurance Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards
Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Additional Information Related to the Computer Code MODFE

Dear Mr. Linehan:

By letter of December 10, 1990, Carl Gertz, Project Manager, Yucca Mountain Site Characterization Project Office, requested that we provide the information specified in your letter of August 10, 1990, to Ralph Stein of the U.S. Department of Energy. The information relates to the use of the code MODFE as reported upon in U.S. Geological Survey Water-Resources Investigations Report 84-4349.

Please find enclosed a diskette with a computer program, input data, and output data used in the simulation of increased recharge on the subregional ground-water flow system of Yucca Mountain and vicinity. The computer program SS.F77 was used to obtain steady-state simulation results for ambient and altered conditions within the flow system. There are several input files for this code. File IINSS represents the ambient-condition input for simulations presented in the report (baseline case) from which elevated-recharge cases were compared. Also included are finite element nodal locations (CORD.IN), element connectivity (ELEM.SRT), initial hydraulic head (HORIG.BASELINE), and land surface altitude data (TOP). Documentation for the code can be found in the program listing SS.F77; it will be published, possibly within a few months, in the USGS documentation package for MODFE (Modular Finite-Element Program by Lynn Torak and Richard Cooley), an effort that is independent of our Yucca Mountain studies.

Please note that the last line at the end of each file on the diskette is an artifact from transferring these files from the Prime to IBM-PC diskette. The last line of each file

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therefore should be deleted before use. Please note also that this work was done during 1983 and 1984, prior to the establishment of the USGS-YMP Quality Assurance program.

If you have questions about the contents of this diskette, please call John B. Czarnecki at 303-236-5176 or FTS 776-5176.

Sincerely,



Larry R. Hayes
Technical Project Office
Yucca Mountain Project Branch
U.S. Geological Survey

Enclosure

cc: w/o enclosure

C. Gertz, YMPO/Las Vegas
D. Dobson, YMPO/Las Vegas
D. Gillies, USGS/Denver
J. Czarnecki, USGS/Denver
YMP-USGS Local Records Center 1.1.01

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