

SUPPORT FOR CONTRACTOR REQUEST

CONTRACTOR:

Mrinal Sen

RATE:

detail attached)

PERIOD OF PERFORMANCE:

March 1, 1999 through March 1, 2000

STATEMENT OF WORK:

The CNWRA requires a computer code (written in ANSI C) for the inversion of geophysical potential field data (magnetic, aeromagnetic, and gravity) sets in 2 and 3 dimensions. In addition, the inversion should be able to handle potential field data collected over buried volcanic features that potentially influence hydrologic flow. Drs. C. Connor and D. Farrell will be responsible for preparation of the required software requirements description and related Quality Assurance documentation.

Successful completion of this project will include (i) delivery of the computer code, documentation and user manual, (ii) documentation, in the form of a brief report, of the successful inversion of geophysical data calculated from forward models to test the inversion; and (iii) successful inversion of several geophysical data sets collected in the Yucca Mountain region by the CNWRA and USGS. It is anticipated that successful completion of this project will require a significant amount of interaction with CNWRA staff. Therefore, several trips (at least 4) to San Antonio will be included in the project. All work related to this tasking must be completed by August 31, 1999.

Mrinal Sen will retain rights to the generic inversion library he developed independent of this contract. SwRI will retain all rights to code developed by SwRI that may be used in this project. SwRI will have all rights to new code developed under this contract.

ESTIMATED UTILIZATION:

200 hours

PRIOR CONTRACTOR WORK EXPERIENCE WITH SWRI: None

PROGRAMMATIC NEED FOR CONTRACTOR WORK:

This work is needed for more complete interpretation of geophysical data being collected along the anticipated transport paths for radionuclides leaving a Yucca Mountain repository. The interpretations enabled by this work will be used to model the depth to basement (tuff and Paleozoic metasedimentary rocks) in the Yucca Mountain region, with particular emphasis on the region around Forty - Mile wash, where depth to basement will constrain potential flow paths and flow rates of radionuclides.

LIST OF ELIGIBLE CONSULTANTS CONSIDERED: