

March 31, 2005

MEMORANDUM TO: Farouk Eltawila, Director
Division of Systems Analysis
and Regulatory Effectiveness
Office of Nuclear Regulatory Research

FROM: Larry Camper, Director **/RA/**
Division of Waste Management
and Environmental Protection
Office of Nuclear Material Safety
and Safeguards

SUBJECT: REVIEW OF THE DRAFT RESEARCH REPORT, "DOCUMENTATION
AND APPLICATIONS OF THE REACTIVE GEOCHEMICAL
TRANSPORT MODEL RATEQ"

By memorandum dated December 22, 2004, you requested our comments regarding the subject draft research report. The Division of Waste Management and Environmental Protection (DWMEP) has reviewed the report, and we believe that the RATEQ code may be a useful tool to predict radionuclide transport at complex sites. Because RATEQ can couple calculations describing radionuclide transport with calculations describing geochemical reactions affecting radionuclide sorption, it enables reviewers to evaluate the effects of phenomena that are not modeled with constant linear sorption models. Because the RATEQ code, in its current version, is not supported with a graphical user interface and requires multiple input files of varying formats, a level of user expertise is required to realize the full potential of the code. Thus the clarity and thoroughness of the user's manual are critical to the successful use of code within DWMEP. The attached comments provide suggestions to enhance the utility of the subject report and facilitate use of the RATEQ code.

Attachments:

1. Review of the March 1, 2005 draft research report entitled "Documentation and Applications of the Reactive Geochemical Transport Model RATEQ"
2. Review of the December 1, 2004 draft research report entitled "Documentation and Applications of the Reactive Geochemical Transport Model RATEQ"

CONTACT: A. Christianne Ridge, NMSS/DWMEP
(301) 415-5673

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