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# Center for Nuclear Waste Regulatory Analyses

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April 19, 1995  
Contract No. NRC-02-93-005  
Account No. 20-5702-723

U.S. Nuclear Regulatory Commission  
Attn: Mr. T.J. McCartin  
MS 7F-06  
Washington, DC 20555

Subject: Paper on Effects of Faults on Buoyancy-Driven Flow: Intermediate Milestone 5702-723-550

Dear Mr. McCartin:

The subject paper is specified as a deliverable in the Performance Assessment portion of the CNWRA Operations Plans for the Division of Waste Management for FY95. This paper, which is authored by Dr. Owen Phillips, is entitled "Effects of faults on vapor transport in convection surrounding a heated repository in an unsaturated formation." The paper summarizes the results from an auxiliary analysis conducted to quantify the effects of faults on buoyancy-driven flow surrounding a heated repository in the unsaturated zone. One concern about faults, such as the Ghost Dance fault, is that they may act as preferential pathways for fluid flow. This work will provide a basis for determining when and how to include the effects of faults in the Total-System Performance Assessment code. This deliverable, which is due on May 15, 1995, was completed ahead of schedule.

The subject paper fulfills IM 5702-723-550 and is submitted for your review and acceptance. Following your acceptance of the paper, it will be will be submitted to *Water Resources Research* for publication. If you have any questions on this deliverable, please call Randy Manteufel on (210) 522-5250 or me at 522-3805.

Very truly yours,



Robert G. Baca, Manager  
Performance Assessment

RGB/mag

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