

December 30, 2002

Mr. Melvin N. Leach, Branch Chief  
Fuel Cycle Licensing Branch, FCSS  
c/o Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

40-8907

Mr. Marc Purcell  
U.S. Environmental Protection Agency  
Superfund Division (6SF-LP)  
1445 Ross Avenue  
Dallas, TX 75202-2733

Telephone

Subject: **License No. SUA-1475, 2002 Groundwater Corrective Action  
Annual Review Report, United Nuclear Corporation's Church Rock  
Site, Gallup, New Mexico**

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717.795.8280

Dear Messrs. Leach and Purcell:

On behalf of United Nuclear Corporation (United Nuclear), Earth Tech, Inc. (Earth Tech) is providing this annual performance review of the ground water corrective action at United Nuclear's Church Rock Mill and Tailings site near Gallup, New Mexico, pursuant to License Condition 30C. This report is for the 2002 operating year and represents the period from October 2001 through October 2002.

Like the 2001 report, this performance monitoring evaluation focuses on the performance of the natural systems without active remediation. As indicated in the U.S. Environmental Protection Agency's *Five-Year Review Report* (September 1998) and by the approvals to decommission or temporarily shut off the three corrective action systems, the agencies recognized that the corrective actions have reached the limit of effectiveness in Zone 1 and the Southwest Alluvium and may have reached their limit of effectiveness in Zone 3. Also, the presentations and reports prepared to document the geochemical processes in each formation (Earth Tech, 2000d and 2002c [Southwest Alluvium]; General Electric Company [General Electric], 2000 [Zone 3]; and Earth Tech, 2000c [Zone 1] (references cited herein refer to the reference list in the *2002 Annual Review Report*) show that the natural geochemical mechanisms are at least as effective as the active remediation systems in controlling the migration of contaminants. The *2002 Annual Review* focuses on how these natural processes are performing.



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Please note that the Natural Attenuation Test in the Southwest Alluvium has been completed and a final report was submitted at the beginning of November 2002 (Earth Tech, 2002c). Because a detailed review of the performance of the Southwest Alluvium natural system has already been reported, the section on the Southwest Alluvium in this report is limited to a presentation of the monitoring data.

## RECOMMENDATIONS

Based on the results of the annual performance evaluation, the following recommendations are made for Zone 1 and Zone 3:

### Zone 1

Proceed to closure of the Zone 1 remedial action system using a combination of:

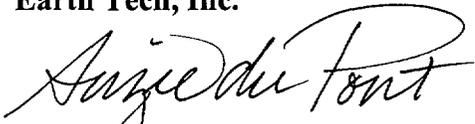
- Monitored Natural Attenuation (MNA) – for metals and radionuclides
- Technical Impracticability (TI) Waiver – for sulfate, total dissolved solids (TDS), and manganese
- Institutional Controls – for support of MNA and TI

### Zone 3

Continue monitoring plume migration and the effectiveness of the natural system to stabilize the seepage impacts and to attenuate constituent concentrations within the property boundary. Four new monitoring wells were installed in 2002 specifically to delineate the downgradient extent of the plume and to track the rate of seepage migration in the downgradient area. The data from these wells as well as the performance monitoring wells are providing detailed information on the rate of plume migration and the performance of the natural system in attenuating constituents. In addition, United Nuclear is performing exploratory studies to evaluate remedies to prevent seepage from migrating off-site.

Please contact Roy Blickwedel (General Electric Corporation) at (610) 992-7935 if you have any questions or need additional information.

Very truly yours,  
**Earth Tech, Inc.**



Suzie du Pont  
Project Manager

Enclosure



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cc: Roy Blickwedel, General Electric Corporation  
Robin Brown, New Mexico Environment Department  
Larry Bush, United Nuclear  
Bob Lawrence, Davis, Graham & Stubbs (w/o enclosure)  
Diana Malone, Navajo Superfund  
George Padilla, Navajo Superfund  
Bill von Till, Nuclear Regulatory Commission

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