Los Alamos
NATIONAL LABORATORY

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Los Alamos, New Mexico 87545

Date: June 13, 2000
In Reply Refer To: ESH-18/WQ&H:00-0194
Mail Stop: K497
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Mr. Samual Coleman, P. E., Director
Compliance Assurance and Enforcement Division (6-EN)
U. S. Environmental Protection Agency
1445 Ross Avenue
Dallas, Texas 75202-2733

SUBJECT: NOTICE OF PLANNED CHANGE AT NPDES OUTFALL 051, NPDES PERMIT NO. NM0028355

Dear Mr. Coleman:

On April 3, 2000, the Los Alamos National Laboratory notified (Letter ESH-18/WQ&H:00-0126) the U. S. Environmental Protection Agency (EPA) regarding a change in the waste streams contributing to the effluent discharged from NPDES Outfall 051 at the Technical Area 50, Radioactive Liquid Wastewater Treatment Facility (RLWTF).

In order to meet the Department of Energy's (DOE) Derived Concentration Guidelines (DCGs) concerning radioactive constituents established by DOE Order 5400.5 and to meet ground water discharge requirements for nitrate and other parameters established by the New Mexico Water Quality Control Commission (NMWQCC) Regulations, the RLWTF upgraded its treatment processes in a two-phased project. Phase I, installation of the Tubular Ultrafiltration and Reverse Osmosis treatment units, was completed in November, 1999. Phase II, installation of the Electrodialysis Reversal (EDR) treatment unit and the interim mechanical evaporator, was completed in January, 2000. The upgrades have significantly improved effluent quality at the RLWTF.

During the start-up of the interim mechanical evaporator, the Laboratory collected approximately 640 gallons of evaporator cleaning solutions, rinsewater, and solids from the cleaning of the mechanical evaporator's heat exchanger. The wastewater contained residual waste from the treatment units prior user, the Barnwell Nuclear Fuel Plant, in Barnwell, South Carolina. The wastewater and solids were collected during three cleaning events, which were stored separately in three 300-gallon tuff tanks (Tanks 1, 2, and 3). Tank 1 was filled with approximately 175 gallons of acid wash and rinsewater from the first cleaning event. The wastewater in the tank originated from the evaporator's heat exchanger before radioactive wastewater from the RLWTF was fed into the evaporator. Analysis of the wastewater documented elevated levels of gross alpha, beta, and gamma radioactivity. Tank 2 was filled with approximately 165 gallons of cleaning solutions and rinsewater from the second cleaning event. Elevated gross alpha and gross beta concentrations were also detected in Tank 2. Approximately 300 gallons of wastewater was stored in Tank 3 from the third cleaning event. Wastewater in Tank 3 had concentrations of cadmium and chromium above RCRA regulatory limits before neutralization with sodium hydroxide. After neutralization, the

chromium concentration dropped below the RCRA level, but cadmium remained at a concentration (5.8 mg/L) above the RCRA hazardous waste concentration. Additionally, radioactivity concentrations in the cleaning solution decreased. Analytical data for the wastewater for all tanks were enclosed with the April 3, 2000 letter. The Laboratory indicted in that letter that all three tanks would be decanted and discharged to the RLWTF head-works.

On March 31, 2000, the liquids in Tank 1 and Tank 2 were decanted to a tuff tank (Tank 5). Also, on that day, the liquid in Tank 3 was decanted to another tuff tank (Tank 6). The sludges remaining in the bottoms of Tanks 1, 2, and 3 were drummed and sent to Nuclear Sources and Services, Inc. (NSSI), near Houston, TX on April 25, 2000. The liquid in Tank 6 was sent to NSSI on April 27, 2000. At NSSI, additional sampling and solidification will take place on these sludges and liquids. Final disposition of the waste will be burial at Envirocare of Utah, Inc. The liquids in Tank 5 have not yet been discharged to the RLWTF headworks.

Please contact Mike Saladen of the Laboratory's Water Quality and Hydrology Group at (505) 665-6085 if additional information would be helpful.

Sincerely,

Steven Rae
Group Leader
Water Quality and Hydrology Group

MS/rm

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