ANNUAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM REPORT JANUARY 1, 2011 THROUGH DECEMBER 31, 2011 URENCO USA FACILITY OPERATING LICENSE SNM-2010 LEA COUNTY, NEW MEXICO

by

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for

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EXECUTIVE SUMMARY

This report summarizes the results of the URENCO USA Radiological Environmental Monitoring Program (REMP) conducted in the vicinity of URENCO USA for the period from January 1, 2011 through December 31, 2011. This document has been prepared pursuant to 10 CFR 20 and 10 CFR 50 and in accordance with the requirements of the URENCO USA Environmental Report, Section 6.1.2. Initiated in September 2006, the REMP includes the collection, analysis, and evaluation of radiological data to assess the potential impact of URENCO USA operations on the environment and general public.

Sampling and Analysis

During 2011, the URENCO USA REMP sampling was performed for the following environmental media: ambient radiation thermoluminescent dosimeters (TLDs); airborne particulate filters; co-located on-site and off-site soil and vegetation; water from a lined stormwater retention basin (Pond 2); groundwater; domestic wastewater at Lift Station 1; and HVAC condensate samples (condensate generated from normal operations of the heating, ventilating and air conditioning systems).

Radiological Impact to the Environment and General Public

A comparison of 2011 airborne particulate filter samples, co-located on-site and off-site soil and vegetation samples, and groundwater samples to pre-operational baseline samples indicates that no detectable radioactivity in environmental samples was attributable to URENCO USA operations during 2011.

During 2011, annualized ambient radiation (corrected for control) ranged from 7 to 16 millirems per year; and annualized neutron exposure rates were all less than the minimum detectable activity. The corrected-for-control values are below the dose limit of 100 millirem/year (which is exclusive of dose from background radiation) per 10 CFR 20.1301 *Dose Limits for Individual Members of the Public.*

The 2011 REMP results for air particulates, soil, vegetation, surface water and groundwater were less than pre-operational results, or the difference was within the same order of magnitude and consistent with the pre-operational results. Differences between pre-operational results and 2011 results are attributable to normal variability in the analytical method, the sample method, and ambient background radiation.

For a few groundwater samples, results were more than one order of magnitude higher than pre-operational results. These higher groundwater activities were correlated with higher concentrations of total dissolved solids, chloride and sulfate in groundwater and with lower pH values. Differences between pre-operational results and 2011 results are attributable to background groundwater conditions.

In addition, gaseous and liquid effluent data collected during 2011 indicate there were no releases to the public during 2011 that exceeded the requirements set forth in 10 CFR 20.1301, 10 CFR 20.1302, and 10 CFR 20.1101(d), as described in NRC Regulatory Guide 4.20 "*Constraint on Releases of Airborne Radioactive Materials to the Environment for Licensees Other Than Power Reactors*" dated December 1996. The effluent results are provided in *Semi-annual Radioactive Effluent Release Reports* (Haley & Aldrich, 2011a, 2011b). The effluent monitoring data and the REMP data indicate that no detectable radioactivity was attributable to URENCO USA operations during 2011.

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