



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BLVD
ARLINGTON, TEXAS 76011-4511

September 6, 2012

MEMORANDUM TO: DOCKET FILE WM-00048

THROUGH: D. Blair Spitzberg, PhD, Chief **/RA/**
Repository and Spent Fuel Safety Branch

FROM: Linda M. Gersey, Health Physicist
Repository and Spent Fuel Safety Branch

SUBJECT: DURANGO DISPOSAL SITE
OBSERVATIONAL SITE VISIT

On May 30, 2012, an NRC Region IV inspector conducted an observational site visit at the U.S. Department of Energy's (DOE) Durango Title I disposal site located in Durango, Colorado. This site visit was conducted using guidance approved April 17, 2012 (ML120930240). The purpose of the site visit was to observe DOE's routine, annual visit to the facility. Attached is the NRC's observational trip report for this site visit.

In summary, the DOE representatives conducted the annual inspection in accordance with the Long-Term Surveillance Plan for the Durango, Colorado (UMTRCA Title I) Disposal Site dated January 2011. No regulatory issues or safety concerns were identified during the site visit.

Docket: WM-00048

Attachment:
NRC Trip Report

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	<input checked="" type="checkbox"/> Publicly Available	<input checked="" type="checkbox"/> Non-Sensitive	
	<input type="checkbox"/> Non-publicly Available	<input type="checkbox"/> Sensitive	
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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket: WM-00048

Report: WM-00048/12-001

Licensee: U.S. Department of Energy

Facility: Durango Disposal Site

Location: La Plata County, Colorado

Date: May 30, 2012

Inspector: Linda M. Gersey, Health Physicist
Repository and Spent Fuel Safety Branch

Approved by: D. Blair Spitzberg, PhD, Chief
Repository and Spent Fuel Safety Branch

NRC Trip Report

1. Background

The Department of Energy (DOE) has custody and long-term care responsibilities for the Durango, Colorado, uranium mill tailings disposal site. The Durango site was licensed on June 18, 1996, and the NRC concurred with the Long-Term Surveillance Plan (LTSP) in September 1996. The revised LTSP, dated January 2011, incorporates the potential for beneficial reuse of some of the Durango Disposal Site property.

The Durango disposal site comprises 48.8 hectares in La Plata County, Colorado, approximately 5.6 km southwest of Durango. In March 1987, DOE initiated remedial action to relocate the approximately 1.9 million cubic meters of residual radioactive material in the form of tailings piles and contaminated soils from the processing site to the Durango disposal site. Placement of the contaminated material from the mill site into the engineered onsite disposal cell was completed in the fall of 1990. A total of 1400 curies of radium -226 are in the cell.

The last annual DOE inspection was conducted by a contractor on May 31, 2011. During that inspection, no significant changes were noted from the previous year's inspection. Further, no problems were identified that required immediate action.

2. Site Status

The disposal cell is constructed partially below existing grade and covers 24 hectares. The top slope was completed with a biointrusion layer, frost-protection layer of compacted soil, radon barrier, and a rock/soil matrix. The matrix has a 1.5 to 2.0 percent grade away from a drainage divide at the center of the cell. The cell top slope is covered with native grasses. The side slope was completed with a bedding layer, frost-protection layer, radon barrier, and a riprap layer. The riprap is keyed into the surrounding surface at the toe of the slope to prevent headcutting erosion at the cell boundary.

There is no perimeter fence surrounding the disposal cell. The DOE uses institutional controls to prevent intrusions. There is a locked gate at the entrance to the site. Five boundary monuments define the corners of the unfenced perimeter of the disposal site. Eighty one warning signs are placed around the perimeter of the site. There are also four survey monuments, two granite site markers, a site entrance sign, and fourteen settlement plates.

Regulation 10 CFR 40.27(c) states that the DOE shall implement the LTSP, and care for the disposal site in accordance with the provisions of the LTSP. The most recent LTSP for the Durango site was submitted to the NRC by DOE in January 2011. The DOE used this version of the LTSP during its annual inspection. The LTSP does require an annual sampling of groundwater to assess cell performance. The sampling was not scheduled during this site visit and the inspector did not review groundwater activities. The NRC inspector may observe the implementation of the groundwater monitoring during a future site visit.

The LTSP was updated to include a Beneficial Reuse Project, which was approved by NRC. The DOE would consider two models for beneficial reuse: 1) DOE would make land available for lease to private industry or electric utilities, such as placement of solar photovoltaic panels on top of the disposal cell cover, or 2) DOE would not lease access to the site but would coordinate with other government agencies in management of site activities, such as planning hiking trails that could use some of the Durango disposal site perimeter land. At the time of this site visit there were no beneficial uses in place.

3. Site Observations and Findings

To conduct the annual inspection, the DOE contractors created an inspection checklist. The checklist included requirements to inspect the boundary monuments, site markers, perimeter signs, and entrance gate. Also, the DOE contract inspectors were required to check the condition of the disposal cell top, side slopes, the area between the cell and the site boundary, and the outlying areas. Further, the DOE contract inspectors were required to observe the status of vegetation.

During the inspection, DOE contractors observed that the survey and boundary markers, settlement plates, signage, and monuments were in place, and the entrance gate was intact. The disposal cell appeared to be in excellent condition, with the top cover growing native grasses. The erosion barrier was in place, and no settlement was observed. The DOE representatives did not identify any significant problems during the annual inspection that required immediate actions.

The NRC inspector measured the ambient gamma exposure rates using a hand-held survey meter (Ludlum Model 19 survey meter, NRC No. 015525 calibration due date of 05/14/13). With a background of about 10-12 microRoentgens per hour ($\mu\text{R/hr}$), measurements ranged from background to about 15 $\mu\text{R/hr}$. Overall, the survey results indicate that the site property was at background levels.

4. Conclusions

The NRC inspector concluded that the DOE contract inspectors conducted the site inspection in accordance with LTSP and 10 CFR 40.27 requirements. The condition of the site was nearly identical to the condition that was reported during the previous year's DOE inspection, as documented in the 2011 annual report.

5. Meeting Summary

The NRC inspector participated in a pre-planning meeting with the DOE Site Manager and DOE representatives prior to the site inspection. During this meeting, the NRC and DOE contractor discussed topics such as site status, inspection plan, and potential hazards.

6. Persons Contacted

J. Dayvault, Site Manager, DOE Office of Legacy Management
L. Sheader, Site Lead/Geologist, S.M. Stoller Corporation
M. Kastens, Site Lead/Geologist, S.M. Stoller Corporation

Figure 1: Granite Site Monument



Figure 2: Riprap on Side Slope with Warning Sign



Figure 3: Vegetated Top of Cell



Figure 4: Rip Rap on Side Slope

