2.0 Edgemont, South Dakota, Disposal Site

2.1 Compliance Summary

The Edgemont, South Dakota, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title II Disposal Site (site) was inspected on July 25, 2018. No changes were observed on the disposal cell or in associated drainage features. The grazing licensee will remove the unmaintained interior fence. Inspectors identified no other maintenance needs or cause for a follow-up inspection. Groundwater monitoring is not required at the site.

2.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the site are specified in the site-specific U.S. Department of Energy (DOE) Office of Legacy Management (LM) Long-Term Surveillance Plan (LTSP) (DOE 1996) and in procedures LM established to comply with the requirements of Title 10 Code of Federal Regulations Section 40.28 (10 CFR 40.28). Table 2-1 lists these requirements.

Table 2-1. License Requirements for the Edgemont, South Dakota, Disposal Site

<table>
<thead>
<tr>
<th>Requirement</th>
<th>LTSP</th>
<th>This Report</th>
<th>10 CFR 40.28</th>
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<tr>
<td>Annual Inspection and Report</td>
<td>Sections 3.3 and 3.4</td>
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<td>Routine Maintenance and Emergency Measures</td>
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<td>Environmental Monitoring</td>
<td>Section 3.7</td>
<td>Section 2.7</td>
<td>(b)(3)</td>
</tr>
</tbody>
</table>

2.3 Institutional Controls

The 360-acre site, identified by the property boundary shown in Figure 2-1, is owned by the United States and was accepted under the U.S. Nuclear Regulatory Commission general license (10 CFR 40.28) in 1996. DOE is the licensee and, in accordance with the requirements for UMTRCA Title II sites, is responsible for the custody and long-term care of the site. Institutional controls (ICs) at the site include federal ownership of the property, administrative controls, and the following physical ICs that are inspected annually: disposal cell, entrance gate and sign, perimeter fence and signs, site marker, and boundary monuments.

2.4 Inspection Results

The site, approximately 2 miles south of Edgemont, South Dakota, was inspected on July 25, 2018. The inspection was conducted by C. Boger, D. Traub, and R. Johnson of the Legacy Management Support (LMS) contractor. T. Jasso (LM site manager) attended the inspection. The purposes of the inspection were to confirm the integrity of visible features at the site, identify changes in conditions that might affect conformance with the LTSP, and determine the need, if any, for maintenance or additional inspection and monitoring.
A grazing license granted by LM allows a local rancher to graze his cattle on the site. The LM site manager and LMS site lead met with the grazing licensee before the inspection to discuss any issues or concerns the licensee might have. As discussed in Section 2.4.1.2, the grazing licensee will remove the unmaintained interior fence from the site. No other concerns were identified by the grazing licensee.

2.4.1 Site Surveillance Features

Figure 2-1 shows the locations of site features in black, including site surveillance features and inspection areas. Site features that are present but not required to be inspected are shown in italic font. Observations from previous inspections that are currently monitored are shown in blue text. There were no new observations in 2018. Inspection results and recommended maintenance activities associated with site surveillance features are included in the following subsections. Photographs to support specific observations are identified in the text and in Figure 2-1 by photograph location (PL) numbers. The photographs and photograph log are presented in Section 2.9.

2.4.1.1 Site Access and Entrance Gate

Access to the site is from Fall River County Road 6N. The entrance sign is mounted on a steel post set in concrete (PL-1). The tubular metal entrance gate was secured by a locked chain and was intact (PL-2). Three additional wire gates are along the perimeter fence: at the northwest corner of the property, approximately 700 feet north of the southeast corner, and at the southeast corner of the site. All gates were closed and intact. No maintenance needs were identified.

2.4.1.2 Perimeter Fence and Signs

A four-strand barbed-wire fence encloses the site, truncating at the southeast corner to allow livestock access to a preexisting stock pond. A broken fence strand identified during the 2017 annual inspection was subsequently repaired by the grazing licensee. The fence was intact (PL-3 and PL-4), and no maintenance needs were identified. Two perimeter signs are attached to the perimeter fence. Both perimeter signs were present and legible. The grazing licensee monitors site security and maintains the perimeter fence. During the 2017 annual inspection, the licensee proposed to remove the unmaintained interior fence (PL-5) that was installed to prevent grazing during vegetation establishment following closure of the disposal cell. The LM site manager concurred with this proposal, as this fence is no longer required.

2.4.1.3 Site Marker

The site has one granite site marker just inside the site entrance gate (PL-6). No maintenance needs were identified.

2.4.1.4 Boundary Monuments

There are four boundary monuments, each at a corner of the property (PL-7). All boundary monuments were inspected, and no maintenance needs were identified.
Figure 2-1. 2018 Annual Inspection Drawing for the Edgemont, South Dakota, Disposal Site
2.4.2 Inspection Areas

In accordance with the LTSP, the site is divided into three inspection areas (referred to as “transects” in the LTSP) to ensure a thorough and efficient inspection. The inspection areas are (1) the cover of the disposal cell; (2) the containment dam and diversion channels; and (3) the site perimeter, outlying areas, and balance of the site. Inspectors examined specific site surveillance features within each area and looked for evidence of erosion, settling, slumping, or other modifying processes that might affect the site’s conformance with LTSP requirements.

2.4.2.1 Cover of the Disposal Cell

The grass-covered disposal cell, completed in 1989, occupies 100 acres (PL-8–PL-10). It showed no signs of erosion, settling, or other modifying processes that might affect its integrity. No maintenance needs were identified.

2.4.2.2 Containment Dam and Diversion Channels

The face of the containment dam, the steepest man-made slope onsite, is covered with riprap and showed no evidence of erosion, settling, slumping, or other modifying processes (PL-11 and PL-12). Scattered plants, mostly grass and annual weeds, grow in the riprap. These plants do not threaten the stability or function of the containment dam.

The diversion and drainage channels are grass-covered on their upslope portions (these are gentle swales on each side of the disposal cell) and riprap-armored on their downslope portions and on steeper slopes (PL-13). Minor amounts of vegetation are present in the riprap. The vegetation helps to stabilize these areas and does not impair the function of the channels. Wetland vegetation is present at the base of the diversion channels. No maintenance needs were identified.

2.4.2.3 Site Perimeter, Outlying Areas, and Balance of the Site

The site is surrounded by private land used primarily for grazing and wildlife habitat. The area approximately 0.25 mile beyond the site boundary—including a surface drainage area just outside the northwest corner of the property that is riprap-armored to prevent headward erosion onto the site—was visually observed for erosion, changes in land use, or other phenomena that might affect the long-term integrity of the site. No such changes were identified.

The balance of the site consists of undisturbed areas covered with native shrubs, grasses, and forbs and formerly disturbed areas covered primarily with seeded grasses and annual weeds. Some minor erosional features are present on steep slopes in an area isolated from the disposal cell; these features were stable. No maintenance needs were identified.

2.5 Follow-Up Inspections

LM will conduct follow-up inspections if (1) a condition is identified during the annual inspection or other site visit that requires a return to the site to evaluate the condition or (2) LM is notified by a citizen or outside agency that conditions at the site are substantially changed. No need for a follow-up inspection was identified.
2.6 Routine Maintenance and Emergency Measures

The grazing licensee will remove the unmaintained interior fence. No other maintenance needs were identified.

Emergency measures are corrective actions that LM will take in response to unusual damage or disruption that threatens or compromises site health and safety, security, integrity, or compliance with 40 CFR 192. No emergency measures were identified.

2.7 Environmental Monitoring

In accordance with the LTSP, groundwater monitoring is not required at this site because a 300- to 700-foot-thick layer of competent shale bedrock lies between the encapsulated tailings and the uppermost confined aquifer. Additionally, clay liners were constructed to isolate the tailings from the shallower, unconfined, perched groundwater that is present as a result of local precipitation. There is no evidence of any direct hydraulic connection between the perched groundwater and the underlying confined bedrock aquifer.

An annual visual inspection of vegetation conditions at the site is required by the LTSP. No vegetation management is required. There were no cattle grazing on the site during the inspection.

2.8 References


### 2.9 Photographs

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<tr>
<th>Photograph Location Number</th>
<th>Azimuth</th>
<th>Photograph Description</th>
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<tbody>
<tr>
<td>PL-1</td>
<td>90</td>
<td>Entrance Sign</td>
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<td>PL-2</td>
<td>90</td>
<td>Locked Entrance Gate</td>
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<tr>
<td>PL-3</td>
<td>350</td>
<td>West Fence Line</td>
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<td>PL-4</td>
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<td>South Fence Line</td>
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<td>PL-5</td>
<td>140</td>
<td>Interior Site Fence</td>
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<tr>
<td>PL-6</td>
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<td>Site Marker</td>
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<td>Boundary Monument BM-2</td>
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<td>PL-9</td>
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<td>Southwest Portion of Disposal Cell</td>
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<td>West Portion of Containment Dam</td>
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<td>PL-12</td>
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<td>East Portion of Containment Dam</td>
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<td>PL-13</td>
<td>355</td>
<td>Containment Dam, Drainage Channel, and East Diversion Channel</td>
</tr>
</tbody>
</table>
PL-1. Entrance Sign

PL-2. Locked Entrance Gate
PL-3. West Fence Line

PL-4. South Fence Line
PL-5. Interior Site Fence

PL-6. Site Marker
PL-7. Boundary Monument BM-2

PL-8. West Portion of Disposal Cell
PL-9. Southwest Portion of Disposal Cell

PL-10. Southeast Portion of Disposal Cell
PL-11. West Portion of Containment Dam

PL-12. East Portion of Containment Dam
PL-13. Containment Dam, Drainage Channel, and East Diversion Channel