8.0 PLANNED DECOMMISSIONING ACTIVITIES

Considering that the no action alternative has been selected and proposed, there are few decommissioning activities to identify and describe. Essentially all of the activities necessary to secure the radiological safety for the site have previously been completed. The actions planned and yet to be completed are directed toward the objectives of: 1) removing "attractive nuisances" that may invite vandalism; 2) restoring the landscape to be consistent with the unspoiled and undeveloped nature of the surrounding lands; 3) removing and properly disposing of investigation-derived wastes that have been generated during the decommissioning process; and 4) quantitatively demonstrating that the concentration of residual radioactivity associated with the surface-soil source term is below the $DCGL_W$.

One small, shed-like building (the LCTS building), constructed after the slurry walls and clay cover were installed, is present at the site (Figure 8-1). The building was designed to house equipment and controls associated with the LCTS that was installed within the slurry walls. The building is currently used to provide shelter for the storage of a single container of sample-derived waste from prior sampling events. The LCTS itself, designed by the MDEQ to address non-radiological contaminants, was never on-line or operational. It has since been rendered non-functional due to the removal of a number of primary components, yet the unused piping system remains in place. A small concrete pad, poured on top of the clay cover near the LCTS building also remains in place. The pad was used as a decontamination pad during the prior subsurface characterization survey.

The planned activities associated with objectives 1 and 2 include the removal of above-grade components of the LCTS system. MDNR plans to cut, cap, and seal the LCTS piping just below grade level, effectively abandoning the LCTS piping in such a way that it neither mars the landscape nor creates an attractive nuisance that might invite vandalism. Removal of the LCTS building and the concrete decontamination pad is also planned in support of these objectives.

The single container of sample-derived waste, presently stored in the LCTS building, will be processed for shipment and disposal at an appropriately licensed offsite disposal facility.

While all indications (including the result of the scoping level scanning survey of the surface soil surrounding select former coreholes locations) support the conclusion that measurable concentrations of residual radioactivity were not brought to the surface during characterization sampling of the subsurface samples yielding quantitative results for comparison with the DCGL is needed. A final status radiological survey of the surface soils is also planned to demonstrate compliance with the decommissioning standard annual dose limit for unrestricted use.

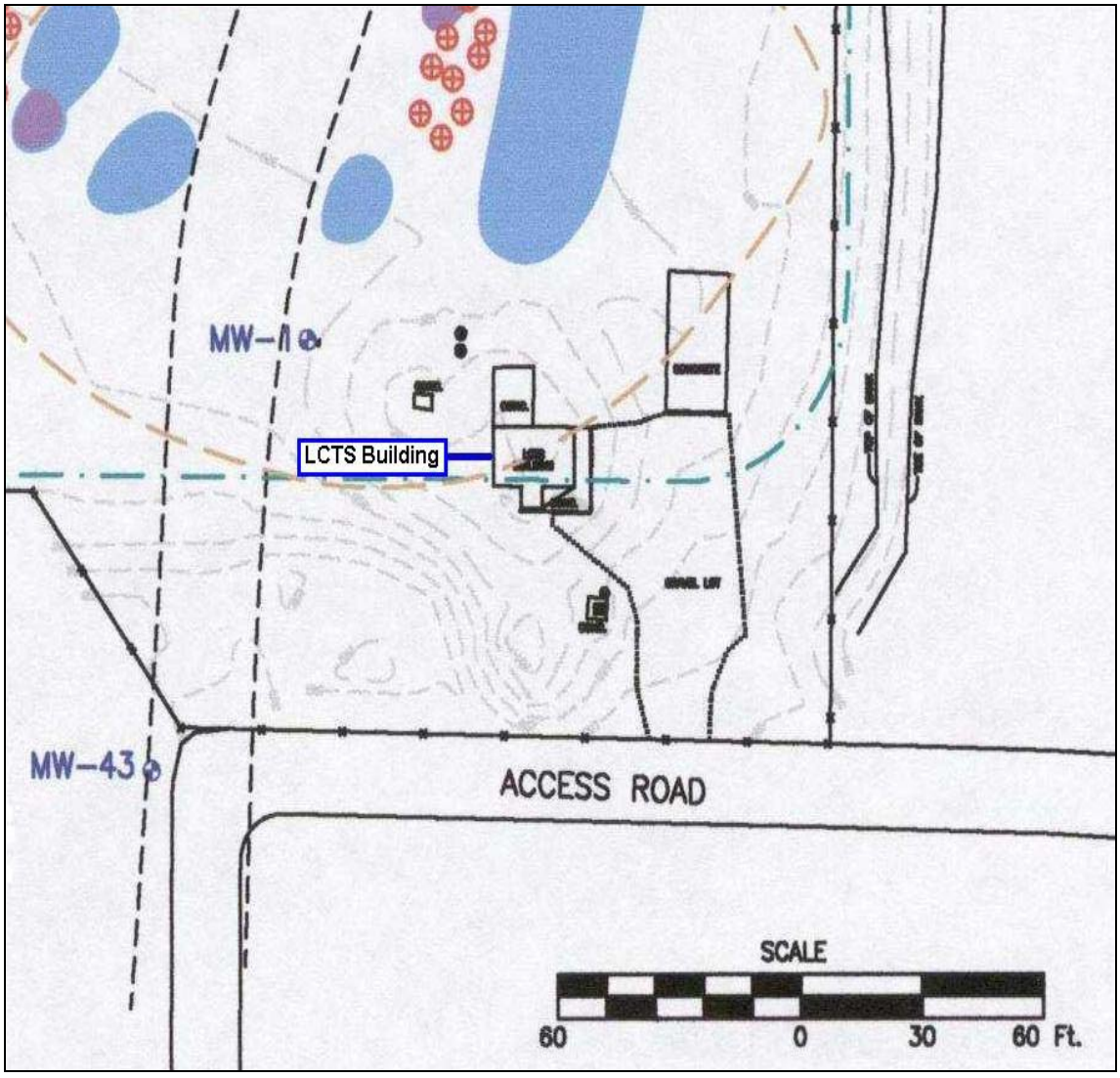


Figure 8-1 LCTS Building Location

8.1 CONTAMINATED STRUCTURES

There are no contaminated structures located on site, and building/structure remediation activities are not planned. However, the LCTS building was used as a staging area and shelter during the performance of previous site characterization surveys and is currently used to temporarily store containerized, potentially contaminated personal protective equipment (PPE) and sample-derived waste. The location of the building is identified on the site map. Routine radiological surveys performed on site, including surveys of the

building and its contents, have provided evidence that the building and its contents have not been radiologically contaminated by virtue of these uses.

Removal of the container of sample-derived waste and its associated radioactive materials are planned, followed by a radiological survey of the building's surfaces prior to the proposed MDNR dismantling and removal of the LCTS building. The building removal is scheduled to be completed in advance of the request for license termination. Accordingly, the radiological surveys associated with these activities will not be designed as "final status surveys" intended to satisfy the decommissioning dose criterion. Rather, radiological surveys for equipment and materials release will be conducted in accordance with the terms and conditions of MDNR's radioactive materials license (NRC 1999a). License conditions specify that material and equipment release surveys such as these will be performed using the decontamination limits in NRC Policy and Guidance Directive 83-23 (NRC 1987). MDNR plans to perform a radiological material and equipment release survey of the building to determine whether the LCTS building materials meet the approved decontamination limits and can be released from radiological control.

It is not anticipated that radiological remediation tasks will be employed within the building because prior radiological surveys have shown the building to be radiologically clean, and routine radiological surveys of the container stored in the building continue to show that residual radioactivity associated with the sample-derived waste is contained. As a result, no special radiation protection methods and control procedures are planned for this work.

The concrete pad is also to be removed. Like the LCTS building, it is not known or expected to be contaminated. Also like the LCTS building, MDNR proposes to perform a radiological survey for equipment and materials release in accordance with the terms and conditions of MDNR's radioactive materials license as the concrete pad is slated for removal prior to achieving the final condition for the site. The top side of the concrete will be radiologically surveyed prior to demolition. The underside of the concrete pad will be surveyed after it has been broken into manageable pieces and inverted.

It is anticipated that the LCTS building and concrete pad will be razed using relatively small, wheeled equipment and hand equipment. Equipment that might pose a threat to the integrity of the engineered clay cover will not be permitted. All of the activities described in this section will be performed by a contractor. The MDNR's radiation safety officer will retain responsibility for the oversight of radiological operations performed, and all licensed activities will be performed under the authority of the MDNR's radioactive materials license.

The proposed activity (removal of the LCTS building and the concrete pad) is not already explicitly authorized under MDNR's radioactive materials license (NRC 1999a). Therefore, MDNR requests approval to perform this activity with the approval of the decommissioning plan. MDNR commits to conducting decommissioning activities in accordance with written and approved procedures. There are no unique safety or

remediation issues associated with the demolition and removal of the LCTS building or concrete pad.

8.2 CONTAMINATED SYSTEMS AND EQUIPMENT

There are no contaminated systems or equipment on site, and remediation activities are not planned. However, in the interest of restoring the landscape and removing an attractive nuisance feature, MDNR proposes to cut, cap, and remove above-grade piping and components associated with the LCTS.

While the LCTS system has never operated and licensed radioactivity has never been introduced to the system, MDNR plans to perform radiological surveys to verify that the system piping and components accessed or removed meet the decontamination limit criteria for equipment and materials release (NRC 1987). Again, the radiological surveys associated with this activity are not "final status surveys" intended to satisfy the decommissioning dose criterion. Rather, the planned radiological survey is invoked as best management practice in that it provides a documentable verification that the LCTS equipment and materials are released in accordance with the terms and conditions of the MDNR's radioactive materials license (NRC 1999a).

It is not anticipated that radiological remediation tasks will be employed with this task, because the system has never been operated and licensed radioactivity has never been introduced to the system. As a result, no special contamination control procedures are planned for this work. There is a small concern that the gamma-radiation exposure rate will temporarily increase as the clay cover soil surrounding the LCTS piping penetration is removed to cut and cap the LCTS piping. The likelihood that a perceptible or measurable change in the gamma radiation exposure rate would occur is quite small given that the engineered clay cover is nominally 5 feet thick. To counter and control this possibility, MDNR proposes to establish a special administrative radiation protection method and control procedure for this work. The control measures will take two parts: 1) excavation will be limited to a depth of 1 foot (30 centimeters); and 2) technicians will monitor the gamma radiation exposure rate during excavation to detect the presence of increasing gamma radiation levels and to stop excavation before general area radiation levels exceed those that would require posting or personnel exposure monitoring.

It is anticipated that below grade access to the LCTS piping system and operations to sever and cap the piping will be accomplished using small hand equipment. Most of the piping system is comprised of plastic piping materials. Equipment that might pose a threat to the integrity of the engineered clay cover will not be permitted. All of the activities described in this section will be performed by a contractor. The MDNR's radiation safety officer will retain responsibility for the oversight of radiological operations performed, and all licensed activities will be performed under the authority of the MDNR's radioactive materials license.

The proposed activity (removal of the above-grade LCTS piping system and components) is not already explicitly authorized under MDNR's radioactive materials license (NRC

1999a). Therefore, MDNR requests approval to perform this activity with the approval of the decommissioning plan. MDNR commits to conducting decommissioning activities in accordance with written and approved procedures. There are no unique safety or remediation issues associated with the removal of above-grade piping and components associated with the LCTS.

8.3 SOIL

8.3.1 Subsurface Soils

Prospective dose modeling of the subsurface-soil source term (Section 5.0) provides solid evidence that residual radioactivity associated with deposits of thoriated slag does not pose a significant threat to public health or the environment. In fact, residual radioactivity in concentration at the specific activity limit for Th-232 is shown to result in annual TEDEs well below the 25 mrem/y NRC's decommissioning dose standard for unrestricted site release.

No further subsurface soil sampling or remedial activities are planned for subsurface deposits of thoriated slag.

8.3.2 Surface Soils

As previously discussed (Sections 4.0 and 5.0), the surface soils at the site are not known or expected to be impacted by residual radioactivity. However, it has been hypothesized that the soils on the immediate surface of the clay cover and in proximity to the former corehole penetrations (used to characterize the subsurface soil source term) might have been impacted. Although radiological controls were emplaced during the characterization survey and sampling process to preclude this, MDNR acknowledges that the possibility cannot be reasonably ruled out with existing radiological characterization surface soils data.

MDNR recently performed a scoping survey of the surface soils in proximity to a number of former corehole sites on the cover of the cell. The survey consisted of a beta/gamma scan of the surface soils using a "pancake" GM detector. The samplers were looking for evidence of a measurable increase in the detector response, which could indicate the presence of residual radioactivity. The selection of coreholes surveyed was conservatively biased toward those in which substantial amounts of radioactivity were identified during the subsurface soil characterization work. The scan survey produced no indication of a measurable increase in the detector's response, all but eliminating the possibility that the surface soils might be impacted. Considering that the magnitude of the concentration (357 pCi/g Th-232) and distribution of radioactivity in surface soil required to produce a dose in excess of 25 mrem/y, MDNR is confident that there are no exceedances of the proposed surface soil DCGL.

To disprove the hypothesis that surface soils might have become impacted during characterization sampling, MDNR has planned a surface soil sample program designed to

demonstrate compliance with the aforementioned surface soil DCGL. Unlike the equipment and materials surveys described in Sections 8.1 and 8.2, the surface soil survey plan is designed as a final status survey intended to satisfy the decommissioning dose criterion. The final status survey plan is presented in greater detail in Section 14.0 of the DP.

No soil removal/remediation tasks are planned for surface soils, and no special radiation protection methods and control procedures are planned for the implementation of the final status survey of the surface soils.

The survey plan calls for the collection of surface veneer soil samples using simple hand tools. Quantitative analysis will be performed by an offsite, contracted laboratory appropriately licensed to possess the samples and perform the analytical procedures specified. All of the activities described in this section will be performed by a contractor. The MDNR's radiation safety officer will retain responsibility for the oversight of radiological operations performed, and all licensed activities will be performed under the authority of the MDNR's radioactive materials license.

The proposed final status radiological survey of the surface soils is not already explicitly authorized under MDNR's radioactive materials license (NRC 1999a). Therefore, MDNR requests approval to perform this activity with the approval of the decommissioning plan. MDNR commits to conducting decommissioning activities in accordance with written and approved procedures. There are no unique safety or remediation issues associated with the performance of the final status survey of the surface soils.

8.4 SURFACE AND GROUNDWATER

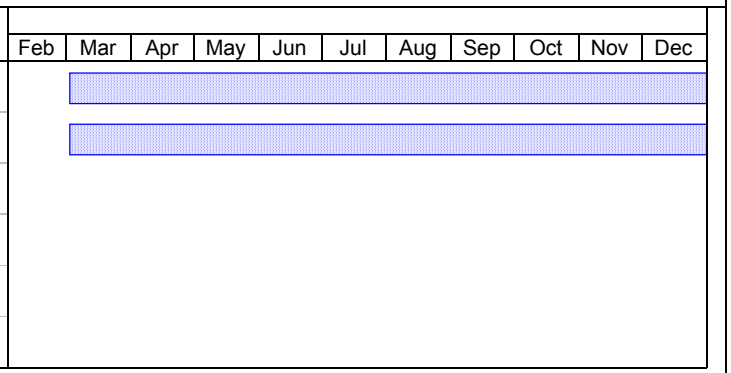
There is no surface water or groundwater that contains residual radioactivity in excess of site background levels, and remediation activities are not planned.

8.5 SCHEDULES

A Gantt chart detailing the schedule for performance of the proposed tasks leading to license termination is provided in Figure 8-2. MDNR acknowledges that the dates in the schedule presented are contingent upon NRC approval of the decommissioning plan. MDNR further acknowledges that circumstances may change over time and as the decommissioning process unfolds. In the event that the decommissioning cannot be completed as outlined in the schedule, MDNR will provide the NRC with an updated schedule. If it becomes evident that the decommissioning will not be completed within the timeframes outlined in the NRC regulations governing the timeliness of decommissioning activities, MDNR will request an alternative schedule for completing the decommissioning.

Figure 8-2

ID	Task Name	Duration	Start	Finish
1	Routine Site Surveillance	861 days	Mon 3/3/03	Mon 6/19/06
2	DP Approval Process	501 days	Mon 3/3/03	Mon 1/31/05
3	Terminate Underground Appurtenances (LCTS Piping)	120 days	Tue 2/1/05	Mon 7/18/05
4	Remove Sample-Derived Waste Left Onsite	30 days	Tue 7/19/05	Mon 8/29/05
5	Final Status Survey of LCTS Building and Surface Soil	90 days	Tue 8/30/05	Mon 1/2/06
6	Final Status Report and License Termination Request	120 days	Tue 1/3/06	Mon 6/19/06



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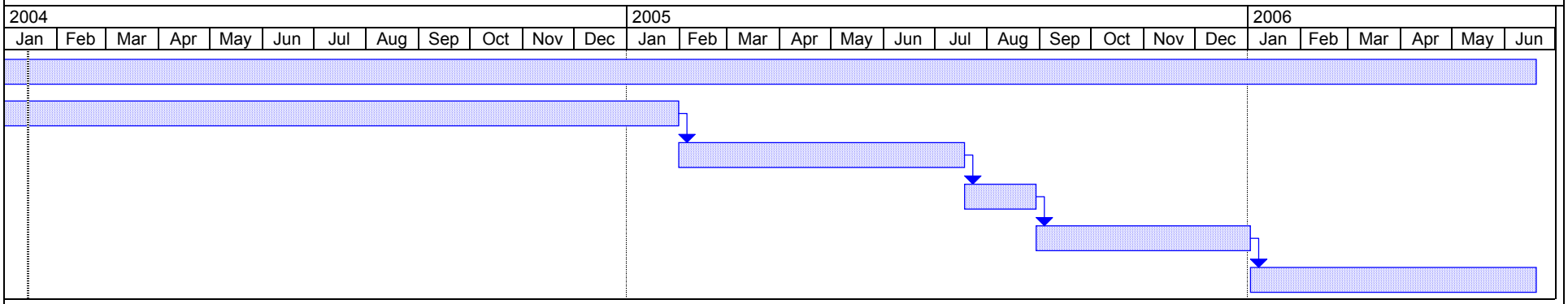
Date: Thu 1/15/04

Task

Figure 8-2



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