

August 17, 2005

Denise Gruben  
Manager Design and Construction Section  
and Project Manager - DNR Site Remediation  
Office of Land and Facilities  
P.O. Box 30033  
Lansing, MI 48909-7948

SUBJECT: RELEASE OF THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES  
(MDNR) BAY CITY, MICHIGAN, TOBICO MARSH STATE GAME AREA SITE,  
AND TERMINATION OF LICENSE (LICENSE NO. SUC-1581)

Dear Ms. Gruben:

This letter is to inform the Michigan Department of Natural Resources (MDNR) that the U.S. Nuclear Regulatory Commission (NRC) is terminating NRC License SUC-1581 and is authorizing the release of land at the Bay City, Michigan site for unrestricted use.

MDNR has completed final status surveys (FSSs) at the site in accordance with the approved Decommissioning Plan (DP). Based on the NRC's review of those surveys and the results of an NRC confirmatory survey, NRC concludes that the site is suitable for unrestricted use. A Safety Evaluation Report (SER) which supports this conclusion is attached.

NRC does not plan to take any further actions regarding the MDNR site, and will not require additional decommissioning in response to future NRC criteria or standards, unless additional contamination is found that is a significant threat to public health.

We have discussed this action with the staff of the Michigan Department of Environmental Quality, and they have no objections. However, release of the MDNR site for unrestricted use does not relieve MDNR from complying with other local, state, and federal requirements.

D. Gruben

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If you have any questions on this matter, please contact David Nelson, Project Manager for the site, at (301) 415-6626.

Sincerely,

**/RA/**

Daniel M. Gillen, Deputy Director  
Decommissioning Directorate  
Division of Waste Management  
and Environmental Protection  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 040-09015  
License No.: SUC-1581

cc: MDNR Distribution List

Enclosures:

1. Terminated License
2. Safety Evaluation Report

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DISTRIBUTION:

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**ML052010626**

\*See previous concurrence

OFC	DWMEP:PM*	DWMEP:SC*	DWMEP:LA*	OGC	DWMEP:DD
NAME	DNelson	KGruss	CBurkhalter	STreby	DGillen
DATE	7/21/05	7/24/05	7/26/05	08/12/05	08/17/05

**OFFICIAL RECORD COPY**

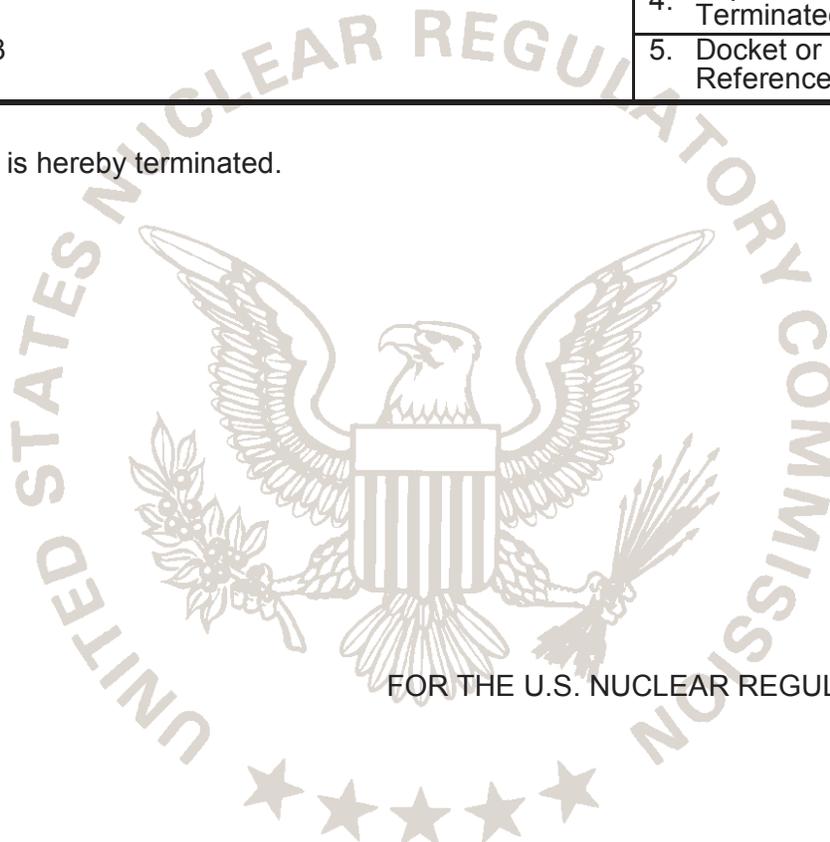
Enclosure 1  
Terminated License

**MATERIALS LICENSE**

Amendment No. 13

Licensee	
1 Michigan Department of Natural Resources .	3. License Number
2 530 W. Allegan Street . Lansing, MI 48933	4. Expiration Date Terminated
	5. Docket or Reference      Not Applicable

License SUC-1581 is hereby terminated.



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Dated: \_\_\_\_\_

\_\_\_\_\_  
 Daniel M. Gillen, Deputy Director  
 Decommissioning Directorate  
 Division of Waste Management  
 and Environmental Protection  
 Office of Nuclear Material Safety  
 and Safeguards

DOCKET NO: 040-09015

LICENSE NO: SUC-1581

FACILITY: MICHIGAN DEPARTMENT OF NATURAL RESOURCES (MDNR), BAY CITY, MI

SUBJECT: SAFETY EVALUATION REPORT FOR ISSUANCE OF AMENDMENT NO. 3 TO MATERIALS LICENSE NO. SUC-1581, MICHIGAN DEPARTMENT OF NATURAL RESOURCES (MDNR) (TAC #52657)

## **1.0 Executive Summary**

This Safety Evaluation Report has been prepared as part of the U.S. Nuclear Regulatory Commission (NRC) staff review of Michigan Department of Natural Resources (MDNR) request to terminate License No. SUC-1581 and release its Bay City, MI, Tobico Marsh State Game Area site for unrestricted use. Decommissioning activities at the site were limited to conducting Final Status Surveys (FSSs). NRC staff also conducted inspections and a confirmatory survey at the site.

Based on this safety evaluation and review of the FSSs, the NRC determined that the licensee has provided sufficient information to terminate License No. SUC-1581. The NRC concludes that the site meets the NRC's radiological criteria for unrestricted use (10 CFR 20.1402).

## **2.0 Introduction**

The MDNR site originated from mining (excavating) operations of a former beach-ridge sand deposit. The excavation resulted in surface depressions flooded with surface water. Industrial wastes, including drums, spent solvents, oils and other liquid and solid wastes, were disposed of in the excavations. In addition to these materials, magnesium-thorium slag bearing naturally occurring thorium (Th) was also disposed of in the excavations beginning in 1970. The vitreous slag, thought to have been generated by Wellman Dynamics located at a site in Bay City, MI, is derived from casting and foundry operations involving magnesium-thorium alloys. By 1973, disposal activities on site had ceased.

The primary source term within the waste cell is comprised of pockets of vitreous, thorium-bearing slag that lie in a lens that is approximately 5 to 6 feet below the ground surface (which is also the thickness of the clay cover near the center of the cell). The lens is approximately 4 feet thick. On August 26, 1999, the NRC issued Source Materials License No. SUC-1581 to MDNR authorizing possession of the thorium-bearing slag leading to decommissioning. Prior to 1999, the site had never been licensed.

In 1983, 1985, 1998, and 2001, characterization surveys were performed at the site. On April 2, 2003, MDNR submitted a Decommissioning Plan (DP) to decommission the site and on July 19, 2005, the DP was approved.

## **3.0 Facility Description**

The MDNR site covers approximately three acres of what was once an industrial waste disposal area. The site is located in a vast land preserve on the edge of Lake Huron's Saginaw Bay where marshy wetland conditions and ponded water predominate. The topography of the site and surrounding environs is very flat. Residual radioactivity at the site is the result of the deposition of slag wastes bearing naturally occurring thorium (Th). To contain the chemical wastes and preclude the potential migration of chemical contaminants beyond those areas

already impacted by the disposal, a bentonite slurry wall was placed around the disposal area, and the disposal area was covered with a clay cap.

A small building and a concrete pad were constructed on-site after an Leachate Collection and Treatment System (LCTS) had been installed. The small building was designed to house equipment and controls associated with the LCTS. The LCTS was never operated and the building was only used to store waste generated during characterization surveys. The concrete pad was used to process samples collected from the waste cell. The building and pad remain in place and intact. Four concrete warning markers are posted around the perimeter of the site and a chainlink fence surrounds the site.

#### **4.0 Radiological Status of the Facility**

MDNR intends to release the site for unrestricted use in compliance with requirements of 10 CFR 20.1402. Therefore, residual radioactivity levels that are distinguishable from background remaining at the site at the time of license termination cannot result in a total effective dose equivalent to an average member of the critical group that exceeds 25 mrem/y. Residual radioactivity must also be at levels that are as low as reasonably achievable.

In a letter dated July 15, 2005, MDNR submitted the Final Status Surveys Report (FSSR) for FSSs performed by MDNR in November 2004, on the waste cell cap, the building surfaces and the concrete pad surface. At the same time (November 2004), the NRC performed an on-site inspection, conducted surveys, and collected samples from the clay cap. Characterization surveys conducted in 1983, 1985, 1998, and 2001 indicated that residual radioactivity was confined within the waste cell. Review of the FSSR and the results of the NRC's September 2004 inspection confirmed that the clay cap, building and concrete pad were free from radiological contamination and residual radiological contamination was confined to the waste cell.

#### **5.0 Evaluations**

MDNR provided a dose assessment to confirm that the residual radioactivity remaining at the site poses very little risk to any future users of the land. A composite recreational scenario was used by MDNR in performing its dose assessment. This scenario was consistent with the NRC's realistic exposure scenario guidelines. MDNR eliminated shallow groundwater as a potable water source because of non-radiological contaminants, and determined that groundwater quality and yield are not appropriate for irrigating a garden or for livestock. The maximum dose calculated by the licensee for the recreational user from on-site residual radioactivity was less than 1 mrem/y. The NRC staff's independent calculation also resulted in a value of less than 1 mrem/y. The NRC staff's evaluation was essentially based on the same parameters used by MDNR. The NRC staff concluded that the actual dose, to any future user of the land would be much less than the 25 mrem/y release criteria for unrestricted use under 10 CFR 20.1402.

#### **6.0 Documents Required for License Termination**

NRC license termination regulations also have requirements for forwarding specific records to the NRC prior to license termination. The licensee has met these requirements prior to license termination to the extent applicable.

#### **7.0 Environmental Considerations**

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment (EA) and finding of no significant impact (FONSI) was published in the Federal Register on July 12, 2005 (70 FR 40065) for approval of the decommissioning plan. Accordingly, no EA or FONSI will be prepared for termination of License No. SUC-1581.

## 8.0 Summary and Conclusion of Safety Evaluations

NRC staff finds that the licensee has completed decommissioning in accordance with its approved DP. The site meets the dose limitation requirements of the License Termination Rule (10 CFR 20.1402). Therefore, the staff concludes that the site is acceptable for unrestricted use with no further action, and the license can be terminated.

## 9.0 Principle Contributors

David Nelson, Project Manager  
Jon Peckenpaugh, System Performance Analyst

## 10.0 References

- NRC, 1998. "Decision Methods for Dose Assessment to Comply With Radiological Criteria For License Termination." NUREG-1549, July 1998. Office of Nuclear Regulatory Research. Washington, DC.
- MACTEC, 2005. "Final Status Survey Report, Tobico Marsh State Game Area Site," June, 2005.
- MACTEC, 2005. "Submittal of Michigan Department of Natural Resource's (MDNR's) Tobico Marsh State Game Area Site Request for License Termination," July 15, 2005.
- MDNR, 2004. "License Amendment for Tobico Marsh State Game Area Site and Submission of a Revised Decommissioning Plan," January 30, 2004.
- MDNR, 2004. "Response to RAI - August 27, 2004, Tobico Marsh Game Area Site and Submission of Additional Information Relative to the Decommissioning Plan, Docket No. 40-9015, License SUC-1581," December 20, 2004.
- NRC, 2005. "Amendment No. 3 to Source Material License No. SUC-1581 Authorizing the Incorporation of the Decommissioning Plan (DP) for the Michigan Department of Natural Resources (MDNR) Bay City, MI, Taobico Marsh State Game Area Site into the License (TAC No. L60509)," July 19, 2005.
- NRC, 2005. "Environmental Assessment of the Revised Decommissioning Plan for the MDNR Site in Bay City, MI," March 2005 Cabrera Services, Inc., 2001. Characterization Report, Tobico Marsh SGA. Prepared for Michigan Department Natural Resources (MDNR).
- NRC, 2002. 10 CFR Part 20 Sub part E for unrestricted release.
- Cabrera Services, Inc., 2001. Characterization Report, Tobico Marsh SGA. Prepared for Michigan Department Natural Resources (MDNR).
- MDNR, 2004. Decommissioning Plan, Revision 1, January 2004. Prepared for MDNR by MACTEC Engineering and Consulting of Michigan, Inc.
- NRC, 1998. "Decision Methods for Dose Assessment to Comply With Radiological Criteria For License Termination". NUREG-1549, July 1998. Office of Nuclear Regulatory Research. Washington, DC.

