

November 14, 2003

Ms. Kelli Sobel  
Administrative Services Deputy  
Michigan Department of Natural Resources  
Office of Legal Services  
P.O. Box 30028  
Lansing, MI 48909

SUBJECT: STATUS OF COMMENTS ON THE DECOMMISSIONING PLAN FOR THE  
MICHIGAN DEPARTMENT OF NATURAL RESOURCES' BAY COUNTY  
TOBICO MARSH STATE GAME AREA SITE

Dear Ms. Sobel:

On August 8, 2003, the U.S. Nuclear Regulatory Commission (NRC) informed you that the September 20, 2002, decommissioning plan (DP) for the Michigan Department of Natural Resources (MDNR) Bay County Tobico Marsh State Game Area site, was found to be insufficient for a detailed staff review. Our letter included a list of acceptance review comments, which outlined the deficiencies in the DP. Our letter also requested that you update the DP and resubmit it, so that we could reduce the number of requests for additional information.

Following your review of our August 8, 2003, letter, a teleconference was held on August 27, 2003, to discuss our acceptance review comments. During the teleconference, MDNR questioned and requested clarification on several of NRC's comments. Through subsequent conversations between NRC and MDNR staff, a common understanding of the acceptance review comments was reached. In addition, NRC re-examined a few areas of the DP and considered additional information provided by MDNR, which allowed closure of two comments. The current status of the acceptance review comments is attached. Please consider the attached comments as you prepare your revised DP. Also, please note that addressing the attached comments should result in a DP that is acceptable for a detailed technical review, but it does not preclude future questions that may be identified during the detailed technical review.

The attachment also includes an additional issue for MDNR consideration, which was discussed during our October 1, 2003 and November 6, 2003, teleconferences. It is recognized that possible future activities at your site, related to compliance with other regulatory requirements (for which Waste Management, Inc. is responsible), will require future communication and coordination between all involved parties. This communication should ensure a common understanding of future activities at your site and allow all parties to make sound management and regulatory decisions. We look forward to these communications as the decommissioning of your site progresses.

As previously discussed, MDNR originally planned to submit the revised DP by October 31, 2003. However, because of the recent communications between NRC and MDNR staff on issues important to the revised DP, this submittal date is, of course, no longer feasible. Therefore, please submit the revised DP by January 30, 2004.

Ms. Sobel

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If you have any questions regarding this letter, please contact Kristina Banovac at 301-415-5114 or [klb@nrc.gov](mailto:klb@nrc.gov), who will be assisting on this project while Sam Nalluswami is on another assignment.

Sincerely,

Daniel M. Gillen, Chief  
Decommissioning Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Attachment: Acceptance Review Comments and Current Status

cc: MDNR Distribution List

Docket No.: 40-9015

License No.: SUC-1581

Ms. Sobel

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/RA/

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ACCEPTANCE REVIEW COMMENTS AND CURRENT STATUS  
(AS OF NOVEMBER 6, 2003)

**NOTE: If status is not listed, this comment is still applicable and should be addressed in the revised DP, as discussed in the August 27, 2003, teleconference.**

1. Although well written and packaged, the DP does not address the elements identified in the site-specific checklist (App. A to NUREG-1727, NUREG-1727 itself, and NUREG-1575 - MARSSIM) jointly agreed to during the meeting of Feb. 13, 2001, and documented in NRC correspondence of March 26, 2001, to the MDNR.

**Status: MDNR agreed to provide a cross-walk from the checklist to the DP, noting where certain topics of the checklist are addressed in the DP.**

2. Section 2.1: A scale drawing or map of the building or site and environs showing current location of radionuclides used at the site is required.
3. Section 2.3: Please describe the activities that caused the areas to become contaminated.
4. Section 2.5: Please describe the types, forms, activities and concentrations of waste and radionuclides in the burial.
5. Sections 3 and 4: A review of Sect. 3 and 4 indicates that the information presented in those portions of the DP is incomplete or unresponsive to the checklist and associated sections of NUREG-1727 and NUREG-1575. For example:

- a. The current characterization does not capture the possible range of Th-232/Th-230 contamination levels, given that the slag present at the site was generated by a licensee that was authorized to process Mg-Th alloys with Th as high as 4% by weight.

- b. A review of the data presented in Table 4-1 of the Draft Characterization Report (Aug. 2001) indicates much higher (1,910 pCi/g) Th-232 concentrations than noted in the DP (800 pCi/g). Provide an explanation as to why such results were ignored in the DP. Provide written confirmation that the draft characterization report is final or re-issue it as a final document.

- c. Confirm that the data presented in Appendices F-1 and F-2 of the Draft Characterization Report (August 2001) are complete in light of the historical site assessment.

**Status: MDNR has confirmed that the data presented in Appendices F-1 and F-2 of the Draft Characterization Report are complete. No additional information is needed on this topic in the revised DP. NRC staff considers this comment closed.**

- d. The description of the current radiological status of the site does not acknowledge that there is a potential that contamination was brought up to the surface following recent characterization work. The work involved drilling/punching nearly 400 boreholes into the cell cap and wastes.

**Status: MDNR will perform a final status survey of the surface soils (landfill cap). MDNR and NRC have discussed MDNR's current plan for a survey design for the surface areas of the landfill, which should specifically address the potential that contaminated material may have been brought to the surface during characterization work. NRC staff understands that MDNR's approach will be to design a survey to determine whether there is residual radioactivity around the former boring locations that is distinguishable from the other cap material. Separately, MDNR plans to demonstrate, through historical information, that the cap material was "clean" material. This approach appears reasonable conceptually; however, MDNR should submit the details in the revised DP.**

**At its own discretion, MDNR may also choose to develop a derived concentration guideline level (DCGL) for the surface soils and include this in the revised DP. Depending on the results of the final status survey, the DCGL could provide additional information to MDNR in deriving conclusions from the survey [e.g., to determine whether any distinguishable concentration of the surface soils (if this occurs) is less than a DCGL] and to NRC for assessing the validity of those conclusions.**

e. The description of the current status of the site does not discuss the integrity of the cell cap given that nearly 400 boreholes were drilled/punched into the cap and waste in support of recent characterization efforts. The discussion should address the types of repairs that were done to seal the holes and how such repairs have returned the cap to its original integrity.

f. A description of property surrounding the site, including a map that shows the detailed topography of the site using a contour interval is required (Section 3.1).

g. A description of potable, agricultural or industrial ground or surface waters is required (Section 3.8).

**Status: NRC re-examined sections 3.6, 3.7, and 3.8, and has determined that the DP contains adequate information on this topic to complete a detailed technical review. No additional information is needed on this topic in the revised DP. NRC staff considers this comment closed.**

h. There is a need to compare the recent characterization results with those of ORISE conducted in 1984 and 1985. Add a table to Sect. 4 presenting the ORISE results before and after the installation of the cap and address any differences.

i. Regarding characterization results relying on borehole gamma logging, clarify whether the results presenting the relationship between detector count-rates and Th-232 concentrations need be or need not be corrected for the attenuation of the steel casing of the GeoProbe.

j. The Th-230-to-Th-232 ratio needs to be based on the upper 95% confidence interval as opposed to using a simple arithmetic average.

**Status: MDNR provided data supporting the Th-230:Th-232 ratio based upon the upper 95% confidence interval. The approach of using a volume-weighted Th-230:Th-232 ratio appears reasonable to NRC staff. MDNR should include a summary of this data in the revised DP. MDNR has also indicated that using a worst-case ratio will not have a significant impact on dose. MDNR may also choose to include this discussion in the revised DP.**

6. Sections 6 and 7: Regarding the Alternative Analysis and ALARA Analysis (Sect. 6 and 7), the discussions need to consider the alternative of upgrading the design of the cell cap and assess the current and future integrity of the cell cap and slurry walls as a containment system (see comment 5.e above addressing the integrity of the cap after extensive intrusive sampling).
7. Sections 8 to 14: The information presented in those portions of the DP is not responsive to the checklist and associated sections of NUREG-1727 and NUREG-1575 in implementing MARSSIM. For example:
  - a. For Sect. 8, the discussion needs to address the process and methods that will be used to confirm that the Leachate Collection and Treatment System (LCTS) is not contaminated, and, if so, how the material will be handled and disposed of. For soils, the discussion needs to address the process and methods that will be used to confirm that past intrusive drilling and sampling activities of the slag/waste have not brought radioactive contaminants to the surface, and, if so, how such materials will be handled and disposed of.

MDNR recommends removal of the LCTS building in the letter of April 15, 2003. The leachate collection system is used for collecting leachate generated by both radiological and non-radiological wastes in a landfill. Non-radiological wastes may include hazardous and non-hazardous chemicals including solid and liquid wastes. Please provide justification for this recommendation.

For Sect. 8.6, the following needs to be included: a statement acknowledging that the dates in the schedule are contingent on NRC approval of the DP; a statement acknowledging that circumstances can change during decommissioning, and, if the licensee determines that the decommissioning cannot be completed as outlined in the schedule, the licensee or responsible party will provide an updated schedule to NRC; if the decommissioning is not expected to be completed within the time frames outlined in NRC regulations, a request for alternative schedule for completing the decommissioning.

- b. For Sect. 9, the discussion of project management presents inconsistent descriptions of position titles and functions, does not address the oversight and management role of MDNR, and appears to be based on boilerplate material that is not project specific.

For Sect. 9.1, please provide a description of the responsibilities of each of the decommissioning project units is required. Also, a description of the responsibility and authority of each unit to ensure that decommissioning activities are conducted in a safe manner and in accordance with approved written procedures is required.

For Sect. 9.4, Training, please provide information as agreed in site specific checklist.

Please provide information on 'Contractor Support' indicated in the checklist.

c. For Sect. 10, the discussion fails to address several elements in NUREG-1727. For example, it does not identify investigational limits, does not provide a list of instrumentation and detection sensitivity, does not address the requirements of 10 CFR Part 20 in implementing a radiation safety program and limits of App. B to Part 20 for Th-232 and Th-230, does not address how Th-232 and Th-230 results will be considered and evaluated against App. B limits using methods presented in regulatory guides or by applying alternative methods.

**Status: NRC staff re-examined Section 10 of the DP. This section should include a description of the instruments that will be used for contamination monitoring, personnel frisking, and any other activities. A detailed write-up is not needed, but section 10.1.7 of the DP indicates that it will provide a description of the types of radiation protection instrumentation that will be used. In addition, this Section or Section 14 should include a discussion of instrumentation that will be used for the final status survey of surface soil on the landfill. NRC staff concluded that other areas of Section 10 appear sufficient to perform staff's detailed technical review.**

d. For Sect. 11, the information is incomplete and unresponsive to that noted in the checklist and NUREG-1727 itself.

e. For Sect. 12, the discussion does not present estimates of waste volumes, waste classification according to 10 CFR Part 61, and where and how such wastes will be disposed of.

**Status: MDNR has indicated that this discussion is included in the DP, only in a different section. The DP cross-walk will include the location of this discussion.**

f. For Sect. 13, the discussions introduce functions that are not described in Sect. 9 (Project Management), identifies non-descriptive titles (such as Cognizant Managers), does not consider the interface with MDNR, does not present an organizational chart of the QA Program, and is unresponsive to NUREG-1727 and NUREG-1575 (MARSSIM) in describing the elements of the QA Program. Most of this section appears to be based on boilerplate material that is not project specific.

g. For Sect. 14, the information is incomplete and unresponsive to that noted in the checklist, NUREG-1727 itself, and NUREG-1575 (MARSSIM). Moreover, a review of the information presented in the MDNR letter of April 15, 2003 is not a substitute for the type of information indicated in NUREG-1727 and NUREG-1575. As with the DP, the letter presents methods and a conceptual approach that are contrary to NRC guidance.

**Status: NRC staff re-examined Section 14 of the DP. Based on the additional discussions regarding comment 5.d., above, MDNR plans to add a**

**discussion of the proposed surface soils final status survey to Section 14 of the DP. With the addition of that information, NRC staff concluded that Section 14 of the DP will be sufficient to perform staff's detailed technical review.**

8. We need electronic versions of the MDNR's RESRAD dose assessment computer runs so that an independent analysis can be performed.

**Status: MDNR will provide the electronic files of the input data (.RAD files) used in the RESRAD runs, with the submittal of the revised DP.**

9. We also need the following references from the DP to complete the detailed review:

a. ABB Environmental Services of Michigan, Inc., 1997. Evaluation of Analytical Results, Groundwater/Leachate Samples from the Tobico Marsh State Game Area Site, August 19, 1997.

b. ABB Environmental Services of Michigan, Inc., 1998. Preliminary Background Assessment Report, April 1998.

c. Harding Lawson Associates, 1998. *Historical Site Assessment, Tobico Marsh State Game Area*, July 1998.

d. MACTEC, Inc. 2002. *Groundwater and Leachate Sampling of the MDNR's Tobico Marsh SGA Site*, December 2002.

e. R. DeHaan, Michigan Department of Public Health, 1983. *Radioactivity Survey of DNR Land Near Bay City, Michigan*, Memorandum from R.DeHaan (Environmental Monitoring Unit) to J. Hennigan (Nuclear Facilities and Environmental Monitoring Section), Michigan Department of Public Health, dated May 2, 1983.

**Status: MDNR will provide these requested references with the submittal of the revised DP.**

#### **ADDITIONAL COMMENT**

**(Discussed in the October 1, 2003, teleconference between NRC and MDNR staff)**

**It is recognized that Waste Management, Inc. (WMI) has responsibility for meeting Michigan's Department of Environmental Quality (MDEQ) requirements for chemical constituents and/or leachate control at the MDNR site. In meeting such requirements, WMI may have to perform certain activities on the MDNR site. These could include use of current monitoring wells or leachate collection systems on the MDNR site. The exact nature of these future activities are currently not known to NRC staff. It is important to note that future communications and coordination between involved parties (MDEQ, MDNR, NRC, and WMI) will be needed to understand the future activities at the site and to make sound management and regulatory decisions. We look forward to these communications as the decommissioning of this site progresses to license termination.**