Consumers Energy

A CMS Energy Company

Environmental Services

September 23, 2011

Mr. Stephen Hoffman
U.S. Environmental Protection Agency
Two Potomac Yard
2733 South Crystal Drive
5th Floor, N-5838
Arlington, Virginia 22202-2733

FINAL REPORT, ROUND 7 DAM ASSESSMENT, CONSUMERS ENERGY COMPANY – D.E. KARN PLANT 1&2 SOLID WASTE DISPOSAL AREA, ESSEXVILLE, MICHIGAN ; CONSUMERS ENERGY RESPONSE TO RECOMMENDATIONS

Dear Mr. Hoffman:

Consumers Energy received and has reviewed the final report for the DE Karn coal ash disposal facility that resulted from the site assessment of the coal ash disposal facilities conducted by US EPA and its engineering contractor GZA GeoEnvironmental, Inc. on September 27 and 28, 2010. Consumers Energy supports the EPA's objective to ensure safe disposal of coal combustion residuals. We have a comprehensive monitoring, maintenance, and inspection program in place for all of our coal ash disposal facilities and remain committed to operating and maintaining these facilities safely.

The DE Karn land disposal facility is currently permitted as a surface impoundment to be closed as a landfill under the regulatory authority of the Michigan Department of Environmental Quality, Resource Management Division (MDEQ). The Department is regularly engaged in the ash management activities at the land disposal facility and makes compliance inspection visits at least once per quarter.

EPA's engineering contractor, GZA GeoEnvironmental, Inc. provided a hazard classification for the DE Karn land disposal facility of low and stated that the facility was in satisfactory condition in accordance with EPA's criteria. Consumers Energy remains committed to meeting all state and federal requirements and to managing its coal combustion byproducts disposal facilities in a very safe and responsible manner.

We are confident, based on our ongoing monitoring, maintenance and inspections, that the disposal facility has the structural integrity necessary to protect the public and the environment. EPA's report supports this conclusion and found that acceptable performance is expected in accordance with the applicable safety regulatory criteria. EPA's contractor did, however, make several recommendations to address studies, operations and maintenance, and repairs that would provide further assurance of continued structural integrity. Consumers Energy responds to each of these recommendations as follows:

3.2 Studies and Analyses

GZA recommends the following studies and analyses:

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1. Develop an operation and maintenance checklist that includes dike structural items at the Karn Disposal Area for CEC field personnel to observe and record on a daily basis.

Consumers Energy formalized a Surveillance Monitoring Program (SMP) dated December 2010 that included a checklist for CEC field personnel to record observations with emphasis on structural items denoted in the Potential Failure Modes Analysis (PFMA) report dated October 30, 2009. This formalized plan was submitted to the MDEQ (formerly Michigan Department of Natural Resources and Environment) on December 28, 2010 with response comments from the MDEQ on March 28, 2011. Consumers Energy is finalizing responses to those comments to be submitted by December 30, 2011.

The SMP was implemented January 3, 2011. The SMP provides that inspections are to be conducted and documented with the checklist once per week by our results technicians. Technicians perform environmental inspections/rounds daily but do not record those field observations as part of the SMP. Inspection reports are reviewed weekly by the on-site solid waste lead to determine if any further actions are required based on observations from the weekly reports. During the course of environmental inspections/rounds technicians believe observations would require immediate attention, the solid waste lead is contacted immediately to investigate further.

2. Although not required by MDEQ Part 115 regulations, it is our opinion that CEC develop a formal EAP for the Karn Disposal Area and communicate that plan to Site personnel and the local emergency response agencies. This EAP could become a part of existing safety plans for the Site specifically addressing conditions of the Karn Disposal Area.

Consumers Energy formalized a Surveillance Monitoring Program (SMP) in December 2010 that included a section on emergency actions and reporting requirements in the event of a release. This formalized plan was submitted to the MDEQ on December 28, 2010 with response comments from the MDEQ on March 28, 2011. The response from the MDEQ did not include any comments pertaining to the emergency actions section of the plan. Consumers Energy is finalizing responses to the agency comments to be submitted by December 30, 2011.

3.3 Recurrent Operation & Maintenance Recommendations

GZA recommends the following operation and maintenance level activities:

1. Clear vegetation, including small brush and grass, from the heavily vegetated areas to increase visibility of the slopes for monitoring purposes;

Consumers Energy began implementing a program of targeted vegetation removal in 3rd Quarter 2010 starting as provided in Consumer's letter to the MDEQ dated August 2, 2010. The program was expanded to include woody growth and small brush and grass on the perimeter dike embankment slopes in 2011 as documented in an annual progress report that will be submitted to the MDEQ by February 3, 2012.

2. Develop a maintenance plan for monitoring of the large trees along the downstream slope. Trees that are damaged or uprooted by storm events should be removed and the dike area repaired;

Consumers Energy formalized a Surveillance Monitoring Program (SMP) in December 2010 that included a maintenance plan for removing large trees on the downstream slope or trees that are damaged or uprooted. This formalized plan was submitted to the MDEQ on December 28, 2010 with response comments from the MDEQ on March 28, 2011. Consumers Energy will be providing responses to agency comments by December 30, 2011.

3. Install riprap or other stabilizing material on the outer slope near the Intake Channel to reduce surface erosion. Similarly, CEC should consider flattening of the dike slope along the Discharge Canal as recommended by AECOM;

Consumers Energy commissioned NTH Consultants, Ltd to review the work completed by AECOM and to conduct further analysis as recommended by AECOM. NTH provided a revised slope stability analysis documented in the September 29, 2010 report that included recommendations for the perimeter dike embankments along the DE Karn Intake and Discharge channels.

Based on recommendations for improvements to the intake channel embankment, Consumers Energy submitted the DE Karn Slope Intake Channel Improvement workplan and construction sheets to the MDEQ on March 29, 2011. The MDEQ approved the workplan on May 22, 2011. The work was initiated on July 11, 2011 and Consumers Energy expects to submit a Construction Certification Report to MDEQ certifying that the construction was performed in accordance with the approved plan by February 3, 2012.

Based on revised analysis and recommendations for improvements to the discharge channel embankment, Consumers Energy has commissioned NTH to also complete a long term monitoring plan that would include instrumenting and detailing the frequency of monitoring of the perimeter embankments along the intake and discharge channels based on long term planned usage of the facility. Consumers Energy expects to submit the long term monitoring plan to MDEQ by November 30, 2011.

4. Complete and/or analyze other embankment stability improvements recommended by AECOM.

Consumers Energy commissioned NTH Consultants, Ltd to review the work completed by AECOM and to conduct further analysis as recommended by AECOM. NTH provided a revised slope stability analysis documented in the September 29, 2010 report. Also, the work to stabilize the intake channel slope has been initiated (see Recommendation No. 3) and a long term monitoring plan that includes instrumentation of the embankment will be completed as part of the comprehensive improvements to the embankment stability. The Long Term Monitoring Planning Report and the Construction Certification Report are expected to be submitted to MDEQ by November 30, 2011 and February 3, 2012, respectively.

3.4 Repair Recommendations

GZA recommends the following repairs which may improve the overall condition of the Karn Disposal Area, but do not alter the current design of the dike. The recommendations may require design by a professional engineer and construction contractor experienced in dike construction.

1. Remove the former NPDES discharge structure, including excavating and removing the former pipes, and replace with compacted fill.

Consumers Energy has completed work to evaluate the condition of the former NPDES discharge structure by excavating soil and fly ash from around the structure. Upon removal of the external gate-weir structure, Consumers found a more complex structure underlying the concrete headwall consisting of embedded sheet pile. The recommendation based on all observations was to abandon the structure in-place with a competent seal of concrete for the pipe penetrations as a practical, cost-effective, structurally sound solution. This work has been completed and documented and will be submitted to MDEQ by December 30, 2011.

Please feel free to contact me with any questions regarding the above responses.

Sincerely,

Harold D. Register Jr.

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