



2017 Annual Landfill Inspection

Hoot Lake Plant - Coal Ash Landfill

Fergus Falls, Minnesota

Prepared for
Otter Tail Power Company

December 2017

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Contents

1.0	Introduction	1
2.0	Review of Existing Information.....	2
2.1	Results of Weekly Inspections	2
2.2	Results of Previous Annual Inspections	2
3.0	Structural Integrity and Operational Review.....	3
3.1	Visual Inspection of Landfill.....	3
3.2	Other Changes.....	4
4.0	Volume of CCR Contained	5


List of Tables

Table 3-1	Summary of Visual Inspection	3
Table 4-1	Volume of CCR Contained in Landfill.....	5

Certification

I hereby certify that I, or someone under my direct supervision, have examined the Hoot Lake Plant Coal Ash Landfill, and, being familiar with the provisions of 40 CFR 257 Subp. D and standard practices of the industry, I have determined that the Coal Ash Landfill design, construction, operation, and maintenance are consistent with generally accepted good engineering standards.

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.

Signature	
Printed Name	<u>Paul T. Swenson</u>
Date	<u>12/8/2017</u> License Number <u>20533</u>

1.0 Introduction

Otter Tail Power Company (OTP) operates the Hoot Lake Plant (Hoot Lake) in Fergus Falls, Minnesota. Hoot Lake is a coal-fired electrical generating plant. Coal combustion residuals (CCR) from the plant are disposed of in an on-site landfill, which is subject to Federal Standards for Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments under 40 CFR 257 Subpart D (CCR Rule).

The landfill is required to meet the CCR Rule requirements for landfills, and is therefore subject to annual inspections by a qualified professional engineer (QPE). This report documents the 2017 annual inspection, as required by the CCR Rule.

2.0 Review of Existing Information

Existing information was reviewed to confirm that the design, construction, operation and maintenance of the landfill is consistent with recognized and generally accepted good engineering standards. No deficiencies were found and the existing information reviewed is described in following subsections.

2.1 Results of Weekly Inspections

Weekly landfill inspections were conducted by a qualified person during December 2016 and January through November 2017. Inspection reports from December 2, 2016, through November 27, 2017, were reviewed as part of the QPE annual inspection.

2.2 Results of Previous Annual Inspections

The 2016 annual inspection report was reviewed in preparing this 2017 report. The 2016 report did not identify any significant deficiencies at the facility when compared with industry practices and state permit and rule requirements.

3.0 Structural Integrity and Operational Review

An on-site inspection was performed on September 26, 2017, to visually identify signs of distress or malfunction of the CCR Unit. The results of the inspection are included in the following subsections.

3.1 Visual Inspection of Landfill

Inspection consisted of on-foot inspection of the landfill perimeter slopes, the active landfill face, and final covered areas. Visual inspection items and results are summarized in the following table:

Table 3-1 Summary of Visual Inspection

Item	Visual Inspection Description	Consistent With Good Engineering Standards (Yes/No)	Notes
1	Proper placement of waste	Yes	No waste placement issues observed at time of inspection.
2	Adequate slope stability and erosion control	Yes	No significant erosion identified at time of inspection.
3	Run-on and Run-off controls properly functioning	Yes	Surface water controls appeared adequate at time of inspection.
4	Surface water percolation minimized	Yes	No surface water ponding or excessive leachate generation observed at time of inspection.
5	Liner systems properly operated and maintained	Yes	No liner systems issues observed at time of inspection.
6	Leachate collection systems properly operated and maintained	Yes	No leachate collection issues observed at time of inspection.
7	Water quality monitoring systems maintained and operating	Yes	Existing monitoring wells were accessible and appeared to be in good condition at time of inspection.
8	Dust adequately controlled	Yes	No dust issues present at time of inspection
9	Geometry of landfill is unchanged from previous inspection.	Yes	The geometry of the landfill is unchanged from 2016. New cover was constructed over areas that had reached final grade in 2017.
10	Animal burrows absent or of no significance	Yes	Minor rodent burrows noted at time of inspection. Not considered significant. OTP has plans to eradicate rodents and fill small burrows.
11	Adequate vegetation density and vegetation maintenance	Yes	Vegetation appeared well established and well maintained at time of inspection.
12	Debris controlled or absent	Yes	No debris present at time of inspection.

3.2 Other Changes

No other changes to the CCR Unit design, maintenance, or operations that could affect the stability or operation of the CCR Unit were observed as part of the annual inspection.

4.0 Volume of CCR Contained

A topographic survey of the landfill was performed on November 11, 2017, to calculate volumes of CCR contained in the CCR unit. Phase I was closed with final cover prior to the effective date of the rule, and is therefore excluded from the CCR volume reported below. The following table summarizes the volume of CCR contained in the landfill.

Table 4-1 Volume of CCR Contained in Landfill

Phase/Cell	Current Volume of CCR Contained in Landfill (cubic yards)	Status of Phase/Cell
Phase II Cells 1 & 1A	278,796	Closed
Phase II Cell 2	275,979	Open
Total in CCR Unit	554,775	

The approximate volume of CCR contained in the landfill at the time of the inspection was 550,000 cubic yards.