

Run-on and Run-off Control System Plan

Slag Temporary Storage Area

Otter Tail Power Company - Big Stone Plant

Introduction

This document presents the Run-on and Run-off Control System Plan for the Slag Temporary Storage Area (TSA) at the Big Stone Plant located near Big Stone City, South Dakota. The TSA is considered an existing coal combustion residual (CCR) landfill. This document addresses the requirements of 40 CFR §257.81.

Run-on and Run-off Control System Plan § 257.81(c)

The TSA is located in a region that has a type II rainfall distribution. According to the National Oceanic and Atmospheric Administration, a 24-hour, 25-year storm event yields 4.5 inches of rainfall for the geographic location of the TSA.

Run-on

The TSA is constructed with a perimeter berm along the west side. Run-on is prevented from entering the north and east side of the TSA by a raised railroad track and road, respectively. All run-on prevention features prevent flow onto the TSA during the peak discharge from a 24-hour, 25-year storm event. The southeast side of the TSA is bordered by the adjacent CCR incised pond known as the Slag Pond. The TSA is graded to drain to the Slag Pond and therefore doesn't contribute run-on to the TSA.

Run-off

The active portion of the TSA is approximately 5.7 acres. All stormwater from the TSA flows to the Slag Pond. A 24-hour, 25-year storm event of 4.5 inches would result in 2.13 acre-feet of water over the footprint of the TSA as detailed in the calculation below:

$$(4.5 \text{ inches}) / (12 \text{ inches per foot}) * (5.7 \text{ acres}) = 2.13 \text{ acre-feet.}$$

The Slag Pond is 2.1 acres in area and maintains a freeboard of 9 feet, for a total storage of 18.9 Acre feet. This volume can adequately collect and control the 2.13 acre-feet of run-off from the TSA during a 24-hour, 25-year storm event.

Amendment of Run-off and Run-off Control Plan § 257.81(c)(2) and (4)

If any event or change affects the plan, a modified Run-on Run-off Control Plan will be prepared and included in the facility's operating record and posted on the CCR website. At a minimum, the Run-on Run-off Control Plan will be reviewed and updated every five years beginning with this version of the Run-on Run-off Control Plan.

Certification § 257.81(c)(5)

I hereby certify under penalty of law that this report was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



John McCain, PE
License No. 8991

Date: October 17th, 2016

