FINAL, REVISION 1

Closure Plan
Coal Combustion Residual Surface Impoundments Ponds M5 and M7
Reid Gardner Generating Station

Prepared for

NV Energy

August 20, 2019

2485 Village View Drive
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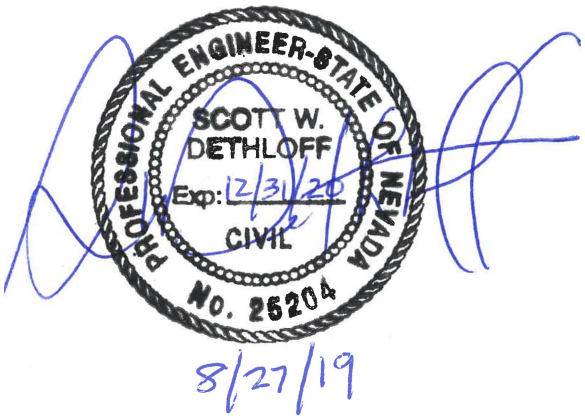
Certification

This section contains the written certification by a qualified professional engineer required by §257.102(b)(4) of the U.S. Environmental Protection Agency's Coal Combustion Residual Rule.



This initial written closure plan for Ponds M5 and M7, existing coal combustion residual surface impoundments at Reid Gardner Generating Station, meet the requirements of §257.102 of the Coal Combustion Residual Rule.

Revision Date	Certified By	Revision	Description of Changes
October, 2016	Nathan Betts, PE /Jacobs	0	Final Plan
August 20, 2019	Scott Dethloff, PE /Jacobs	1	Revised Final Plan -Updated Station status

Contents

SECTION 1

Introduction

This August 2019 revision to the initial written closure plan presents the activities that will be performed to close Pond M5 and Pond M7, existing coal combustion residuals (CCR) surface impoundments at the Reid Gardner Generating Station, in accordance with §257.102 of the U.S. Environmental Protection Agency's CCR Rule.

1.1 Site Description

The Reid Gardner Generating Station (Station) is a retired coal-fired electric power generation facility that produced approximately 600 megawatts (MW) of power from four generating units. The Station is located approximately 50 miles northeast of Las Vegas, within the Moapa Valley. The Station has been decommissioned and is undergoing demolition; thus, no longer generating electricity or producing new CCR.

Ponds M5 and M7 are existing CCR surface impoundments at NV Energy's Reid Gardner Generating Station. The ponds are formed by earthen embankments, lined with two layers of geomembrane, have interstitial leak detection and collection systems, and are located on a mesa approximately 3,600 feet south of the power generating units. Ponds M5 and M7 were designed, permitted, and constructed in conformance with applicable State regulations and prior to the publication of the CCR Rule. The applicable regulations included water pollution control regulations (Nevada Administrative Code [NAC] 445A), dam safety regulations (NAC 535), and the Nevada Division of Environmental Protection (NDEP), Bureau of Water Pollution Control's (BWPC) Water Technical Sheet 37 (WTS-37). The ponds are classified as existing unlined CCR surface impoundments under the CCR Rule (§257.71(a)(3)(i)).

1.2 Regulatory Overview

The CCR Rule was published in the Federal Register on April 17, 2015 and became effective on October 19, 2015. The Rule regulates the disposal of CCR as solid waste in landfills, surface impoundments, and lateral expansions under Subtitle D of the Resource Conservation and Recovery Act. The Rule sets forth minimum requirements for written closure plans and the closure of CCR surface impoundments in §257.102.

Ponds M5 and M7 are subject to the closure requirements in the CCR Rule because the ponds are considered existing unlined CCR surface impoundments. A CCR surface impoundment is a "man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit, treats, stores, and disposes of CCR" (§257.53). Furthermore, they are classified as existing CCR surface impoundments under the Rule because they received CCR both before and after October 19, 2015. As a result, both ponds must comply with the CCR Rule and more specifically the closure requirements as required by §257.102(a).

The initial written closure plan was placed in the Station's operating record on October 10, 2016 in compliance with §257.102(b)(2)(i) and §257.105(i)(4). Within 30 days of placement, the State Director was notified as required by §257.106(i)(4) and §257.106(d). Also, within 30 days of placement, the plan was placed on a publicly accessible Internet site per §257.107(i)(4) and §257.107(d). The initial plan was certified by a qualified professional engineer (§257.102(b)(4)).

The closure plan may be amended at any time, but it must be amended when "there is a change in the operation of the CCR unit that would substantially affect the written closure plan" or when "unanticipated events necessitate a revision" (§257.102(b)(3)). The plan must be amended at least 60 days before a planned change in operations, and no later than 60 days after an unanticipated event

triggers a revision. After closure has commenced the plan must be amended not more than 30 days after the triggering event. Amended plans have the same requirements for certification, record keeping, public posting, and notification as required for the initial plan. This amendment was not triggered by a specific event or change but serves to bring the description of the station and conceptual closure schedule up to date.

Ponds M5 and M7 are also regulated under the State and Federal permits summarized in Table 1. The activities and requirements associated with closure under these non-CCR Rule permits are not described in this closure plan.

Table 1. Non-CCR Rule Permits
Closure Plan, Coal Combustion Residual Surface Impoundments Ponds M5 and M7, Reid Gardner Generating Station

Regulatory Agency	Permit Name	Permit Number
Nevada Division of Water Resources	Dam Permit	J-652
Nevada Department of Wildlife	Industrial Artificial Pond Permit	S-32922
Nevada Division of Environmental Protection	Authorization to Discharge	NEV91022
United States Bureau of Land Management	Right-of-Way Grant	N-82003

SECTION 2

Impoundment Closure Activities

This section describes the "steps necessary to close the CCR unit at any point during the active life of the CCR unit" and is written to meet the requirements of §257.102(b). The steps listed in this section are "consistent with recognized and generally accepted good engineering practices." This section assumes that the CCR unit will be closed by removal of CCR as allowed by §257.102(c).

2.1 Narrative Description

This section contains the narrative description required by §257.102(b)(1)(i) and §257.102(b)(1)(ii) of the CCR Rule.

2.1.1 Initiation of Closure Activities

The closure of Ponds M5 and M7 will commence no later than 30 days after the ponds receive the known final receipt of waste, either CCR or non-CCR waste, or no later than 30 days after removal of the known final volume of CCR for beneficial use (§257.102(e)(1)). Alternatively, closure must commence two years after the surface impoundments receive the last receipt of waste, either CCR or non-CCR waste, or two years after the last CCR is removed for beneficial use (§257.102(e)(2)). Time extensions for commencing closure activities are possible under the CCR Rule as described in §257.102(e)(2)(ii) and §257.102(e)(2)(iii). For the purposes of the CCR rule, closure has commenced when the Owner or Operator ceases placing waste in the ponds and completes any of the activities summarized below (§257.102(e)(3)).

- "Taken any steps necessary to implement this closure plan"
- "Submitted a completed application for any required state or agency permit or permit modification or"
- "Taken any steps necessary to comply with state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating of completing closure of a CCR unit."

A notification of intent to close must be placed in the Station's operating record no later than the date on which closure is initiated (§257.102(g) and §257.105(i)(7)). Within 30 days of placement the State Director must be notified as required by §257.106(i)(7) and §257.106(d). Also within 30 days of placement, the notification of intent to close must be posted on a publicly accessible Internet site per §257.107(i)(7) and §257.107(d).

The ponds must also close within 6 months if it is determined that they do not comply with the location and safety factor requirements as required by §257.101(b)(1) and §257.101(b)(2), respectively. And because the ponds are classified as existing unlined CCR surface impoundments, they must close within 6 months if it is determined that they do not comply with groundwater requirements as required by §257.101(a).

2.1.2 Closure Implementation

Implementation of closure activities will begin after allowing the ponds to dry, preparing engineering design, procuring construction services, and performing regulatory coordination. The ponds will be allowed to dry so that the CCR waste is stable enough for removal and disposal. Site preparation activities may include delivering equipment and supplies, installing temporary erosion/stormwater control measures, and demolishing/decommissioning structures that might interfere with CCR removal. The CCR will be excavated from the ponds and loaded directly into haul vehicles, containers, or similar

devices for disposal in the existing on-site CCR landfill as allowed by the existing landfill permit. The existing exterior and/or interior pond embankments may be removed or left in place. The removal process will continue until the CCR has been removed from the ponds and any areas affected by releases have been decontaminated. CCR and other wastes removed as part of the project, such as construction and demolition debris, will be disposed of in the existing landfill or at permitted disposal facilities in accordance with applicable laws, regulations, and permits. After removing the CCR, a soil cover may be placed in the former pond area and seeded.

2.1.3 Completion of Closure Activities

As part of completing closure, groundwater monitoring data will be reviewed to verify that groundwater concentrations do not exceed the groundwater protection standard established pursuant to §257.95(h) for constituents listed in appendix IV of the CCR Rule (§257.102(c)).

For existing CCR surface impoundments, closure must be completed within five years of commencing closure activities (§257.102(f)(1)(ii)). However, time extensions are possible under the CCR Rule (§257.102(f)(2)). Upon completion, a qualified professional engineer must certify that the closure was completed in accordance with this closure plan and other closure requirements in the CCR Rule (§257.102(f)(3)). Within 30 days of completing closure, a notification of closure must be placed in the facility's operating record and must include the professional engineer's certification (§257.102(h) and §257.105(i)(8)). Within 30 days of placement, the State Director must be notified as required by §257.106(i)(8)) and §257.106(d). Also within 30 days of placement, the notification must be posted on a publicly accessible Internet site per §257.107(i)(8) and §257.107(d). No deed notations are required because the ponds will be closed by removal of CCR (§257.102(i)(4)).

2.2 Estimated Maximum CCR Inventory

As required by §257.102(b)(iv), the maximum estimated inventory of solid and liquid CCR expected to be on-site during the active life of Ponds M5 and M7 is the permitted volumetric capacity of the ponds. This is 202.99 acre-feet (or 327,490 cubic yards) for Pond M5 and 206.42 acre-feet (or 333,020 cubic yards) for Pond M7. Based on current plant operations, it is expected that the actual amount of pond solids remaining will be less than 50 percent of the permitted volumetric capacity of the ponds.

2.3 Conceptual Closure Schedule

The closure schedule required by §257.102(b)(vi) of the CCR Rule is shown in Figure 1. It is assumed that Ponds M5 and M7 will be closed as part of a single construction event. The ponds are expected to remain active during plant demolition activities, receiving primarily non-CCR water during this time (to include water generated by remediation activities). Pond closure activities are estimated to be completed by 2023. The sequencing and timing shown in the schedule could change based on actual last receipt of CCR waste and non-CCR waste, the rate of pond drying, and other factors. Although the schedule includes some of the "major milestones" identified in the CCR rule as part of closure activities, it does not include all of the activities necessary to close the ponds in accordance with "other permits" and applicable state regulations.

Figure 1 Conceptual Closure Schedule

Closure Plan, Coal Combustion Residual Surface Impoundments Ponds M5 and M7, Reid Gardner Generating Station

Step or Phase of CCR Unit Closure	Estimated Completion Timeframe [a] (quarters)																			
	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Last Receipt of CCR and non-CCR Waste																				
Issue Notifications of Intent to Close, for both CCR-Rule [b] and other permits																				
Pond Dewatering by Evaporation																				
Design Pond Closure Project																				
Bid, Select, and Award Closure Contract																				
Closure Construction Activities [c]																				
Issue Notification of Closure Completion for both CCR Rule [d] and other permits																				

[a] Timeframes provided are approximate, conceptual, and in calendar days. Actual dates and durations for construction will depend on weather, contractor availability, and other variables.

[b] Closure must commence within 30 days of last known receipt of waste. Within 30 days of placement the notification of intent must be posted on the publicly accessible Internet site and notice sent to the State Director. Closure will have commenced when the Owner or Operator ceases placing waste in the impoundment and completes any of the actions or activities summarized in §257.102(e)(3).

[c] Closure must be completed within five years of commencing closure activities per §257.102(f)(1)(ii)).

[d] The notification must be placed within 30 days of the completion of closure. Within 30 days of placement the notification of closure must be posted on the publicly accessible Internet site and notice sent to the State Director. The notification must be certified by a professional engineer.