FINAL TECHNICAL MEMORANDUM

Wetlands Location Restriction Demonstration for the CCR Impoundments M5 and M7, Reid Gardner Station, Moapa, Nevada

PREPARED FOR:	Michael Rojo /NV Energy
COPY TO:	Tony Garcia, CEM/NV Energy Mathew Johns, PE/NV Energy
PREPARED BY:	Ilka D. Dinkelman, CEM/Jacobs
DATE:	October 10, 2018
REVIEWED BY:	Scott Dethloff, PE/Jacobs; Robert Ward, PE/Jacobs; John Barker, PE/Jacobs; George Tangalos, PG/Jacobs; Brian Boyd, PE/Jacobs; Jay Piper, PE, CEM/Jacobs
JACOBS PROJECT NO:	690301

This technical memorandum (TM) presents the wetlands location restriction demonstration for the Coal Combustion Residual (CCR) Impoundments M5 and M7 at the Reid Gardner Generating Station (Station), as required by 40 CFR §257.61 of the U.S. Environmental Protection Agency's Coal Combustion Residuals (CCR) Rule. This demonstration must be placed in the Station's operating record as it becomes available, but not later than October 17, 2018 per 40 CFR §257.61(c)(1) and §257.105(e). Within 30 days of placement, the State Director must be notified as required by 40 CFR §257.106(d) and §257.106(e). Also, within 30 days of placement the demonstration posted to a publicly accessible Internet site as required by §257.107(d) and §257.107(e)).

1.0 Background

The M5 and M7 impoundments are existing CCR surface impoundments at NV Energy's Reid Gardner Generating Station near Moapa, Nevada. The Station was formerly a coal-fired electric power generating station with four units capable of providing a generating capacity of nearly 600 megawatt (MW) located approximately 45 miles northeast of Las Vegas in Moapa Valley, Nevada. Units 1 through 3 were retired in 2014 and Unit 4 ceased operations in March 2017. The station is currently in the reclamation process whereby the plant is being dismantled. Although the Station no longer generates power or produces CCR, the impoundments contain legacy CCR waste and still accept other flows from the Station.

The M5 and M7 impoundments are located on a mesa south of and at a higher elevation than the plant area. The impoundments were formed by excavating into the existing ground along the southern and western side of the impoundments and building earthen embankments along the northern and eastern sides. The M5 and M7 impoundments were constructed with a multi-layer geosynthetic liner system (80-mil geomembrane primary liner, interstitial leak detection system, 80-mil geomembrane secondary liner) installed over a prepared subgrade. The perimeter dikes were constructed using native soils with maximum embankment slopes of 3 to 1 (horizontal to vertical). The M5 and M7 impoundments are rectangular evaporation ponds covering a combined area of approximately 28 acres. The M5 and M7 impoundments measure 23-feet deep, as measured from the bottom of the pond to the top of the lowest berm surrounding the impoundments.

The impoundments 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). Although the M5 and M7 impoundments have multi-layer geosynthetic liner systems, they are classified as existing unlined CCR surface impoundments under the CCR Rule (§257.71(a)(3)(i)). For a more detailed description of the surface impoundments refer to the Construction History for Ponds M5 and M7 (CH2M, 2016).

As required by 40 CFR §257.61(a), existing and new surface CCR impoundments, and all lateral expansions of CCR units, must not be in wetlands, as defined by 40 CFR §232.2. Wetlands are defined as "… areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support… a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

2.0 Wetlands

There are no springs or surface water locations on the mesa. The most proximal surface water feature to the M5 and M7 impoundments is the Muddy River. The Muddy River is located approximately 150 feet below the mesa, approximately 0.6 miles north of the M5 and M7 impoundments. The Muddy River flows south and east from a series of thermal springs in the Moapa Valley and terminates at Lake Mead where it drains into the northern arm of the lake at Overton, Nevada. A review of the National Wetlands Inventory for surface waters and wetlands indicates no delineated wetlands located at the Station and the M5 and M7 impoundment area (USFWS, 2018). The nearest delineated wetlands to the M5 and M7 impoundment area are located where the Muddy River originates, approximately 8 miles to the northwest, and at Bowman Reservoir in Logandale, Nevada, approximately 10 miles to the southeast.

Groundwater does not daylight on the mesa surface in the impoundment area. NV Energy currently monitors groundwater at the M5 and M7 impoundments using 7 monitoring wells, and the depth to groundwater in the impoundment area is approximately 150 feet below ground surface (CH2M, 2018).

3.0 Conclusions

The CCR impoundments M5 and M7 are not located within or proximate to any wetlands as defined by 40 CFR §232.2.

4.0 Certification

This section of the assessment contains the certification by a qualified professional engineer as required by Section 257.61(b) of the CCR Rule.

This demonstration meets the requirements of 257.61(a) of the CCR Rule.

5.0 References

CH2M HILL Engineers, Inc. (CH2M). 2018. *Coal Combustion Residual 2017 Annual Groundwater Monitoring and Corrective Action Report, Reid Gardner Generating Station, Mesa Surface Impoundments M5 and M7*. January 29.

CH2M. 2016. *Construction History, Ponds M5 and M7, Reid Gardner Generating Station*. August 26.

United States Fish and Wildlife Service (USFWS). 2018. National Wetlands Inventory. https://www.fws.gov/wetlands/