

**Coal Combustion Residual
Surface Impoundment
Annual Inspection
2020**

**Basin Electric Power Cooperative
Leland Olds Station**

January 2021

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Background and Purpose

In accordance with 40 CFR § 257.83(b), the purpose of this document is to fulfill the requirements for an Annual Inspection Report prepared by a Qualified Professional Engineer (**QPE**) to ensure the design, construction, operation, and maintenance of the Basin Electric Power Cooperative (**Basin Electric**) Leland Olds Station (**LOS**) surface impoundments (Ash Pond 2 and Pond 3) are consistent with recognized and generally accepted good engineering standards.

Pond 2 was partially closed in 2017. Approximately 23 acres in the south and southwest areas of the pond were closed in accordance with the design standards specified in 40 CFR § 257.102 and North Dakota Department of Environmental Quality (**NDDEQ**) permit requirements. The remaining areas of Ash Pond 2 and Pond 3 were dewatered and graded to approximate final contours in 2019. Accordingly, the Ponds did not impound water or CCRs during 2020.

Final closure activities for Ash Pond 2 and Pond 3 occurred during the second half of the 2019 and the 2020 construction seasons. A closure notification, dated October 26, 2020, was completed in accordance with the CCR Rule that included certification by a qualified professional engineer that the closure was completed in accordance with the written closure plan and the requirements of 40 CFR § 257.102. Accordingly, this document will serve as the final QPE annual inspection report for Ash Pond 2 and Pond 3, as the facility will transition into post-closure care.

Records Review

Existing information regarding the status and condition of the LOS surface impoundments was reviewed as part of the QPE annual inspection effort. The evaluation included reviews of the facility CCR Rule operating record, files associated with the NDDEQ-issued solid waste management permit, and past periodic inspection reports.

LOS plant site CCR facilities were constructed in the 1960s and 1970s and first came under regulation by the North Dakota Department of Health (now known as the NDDEQ) solid waste management rules in 1982. Ash Pond 2 (approximately 42 acres) was used for bottom ash disposal at LOS until it was placed in inactive status in 2015. Pond 3 (approximately 4.1 acres)

did not directly receive sluiced ash from the plant, but instead served as a secondary settling basin to remove suspended solids. Pond 3 was also placed into inactive status in 2015.

No indications of structural instability have been observed to date for any of the CCR units at LOS. The results from structural stability and factors of safety assessments for each of the CCR surface impoundments at LOS are presented in documents prepared by Basin Electric's third-party engineer (AECOM) and are included in the operating record. The documents demonstrate the LOS surface impoundments, when previously operational, met the requirements set forth in 40 CFR § 257.73(d).

Periodic Inspections

During 2020, qualified individuals (generally the LOS Environmental Coordinator) conducted weekly inspections for any appearance of actual or potential structural weakness and other conditions which were disrupting or had the potential to disrupt the operation or safety of the surface impoundments. The weekly inspection checklists are filed in the operating record. Appearances of structural weakness may include, but are not limited to: (1) signs of piping and other internal erosion; (2) transverse, longitudinal, and desiccation cracking; (3) slides, bulges, boils, sloughs, scarps, sinkholes, or depressions; (4) animal burrows; (5) excessive or lacking vegetative cover; and (6) slope erosion. A review of the periodic inspection reports for the LOS CCR surface impoundments indicated no signs of actual or potential structural weakness or other adverse conditions as described above. Weekly inspections were discontinued after final closure was completed.

Annual Inspection Criteria

The closure progress of Ash Pond 2 and Pond 3 was visually inspected multiple times during 2020 by Kevin L. Solie, North Dakota Professional Engineer PE-9488. The most recent inspection occurred on September 21, 2020.

Based on the visual inspection of Ash Pond 2 and Pond 3 on September 21, 2020, the following annual inspection criteria are addressed:

- i. Changes in the geometry of the Ash Pond 2 and Pond 3 dikes since the previous annual inspection: Dikes have been removed to allow for the closure activities described earlier in this report. Final cover was completed on Ash Pond 2 and Pond 3.

- ii. Instrumentation for Pond 3 had been previously removed in conjunction with the demolition of the pump house.
- iii. The maximum recorded reading of impounded water and CCR in Ash Pond 2 since the previous annual inspection is approximately 0' at an elevation of 1675.0 msl.
- iv. The maximum recorded reading in Pond 3 is 0' or 1678.1 msl.
- v. The approximate minimum depth of impounded water and CCR in Ash Pond 2 since the previous annual inspection is 0' or 1675.0 msl.
- vi. The approximate minimum depth in Pond 3 is 0' or 1678.1 msl.
- vii. The present depth and elevation of the impounded water and CCR in Ash Pond 2 is approximately 0' at an elevation of 1675 msl.
- viii. The present depth and elevation of the impounded water and CCR in Pond 3 is approximately 0' at an elevation of 1678 msl.
- ix. The storage capacity of Ash Pond 2 at the time of inspection is 0 ac-ft.
- x. The storage capacity of Pond 3 at the time of inspection is 0 ac-ft.
- xi. The approximate volume of impounded water and CCR in Ash Pond 2 at the time of inspection is 0 ac-ft.
- xii. The approximate volume of impounded water and CCR in Pond 3 at the time of inspection is 0 ac-ft.
- xiii. There are no appearances of actual or potential structural weakness of the impoundment, nor are there any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the ponds and appurtenant structures.
- xiv. There are no other changes that may affect the stability or operation of the impounding structures since the previous annual inspection.

Certification Statement

I certify this document has been prepared in accordance with 40 CFR § 257.83(b) which requires a written Annual Inspection Report by a Qualified Professional Engineer as set forth in the *Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments*.



Kevin L. Solie, North Dakota PE-9488
January 13, 2021

