



January 4, 2020

Xcel Energy, Inc.
Sherburne County Generating Station
13999 Industrial Blvd.
Becker, MN, 55308

Re: 2019 Annual Inspection of Scrubber Solids Pond No. 3

The Scrubber Solids Pond No. 3 (Pond 3) inspection was conducted on October 24th, 2019 by Daniel J. Riggs, a professional engineer licensed in the State of Minnesota. This was the fifth inspection done in accordance with the EPA's published Coal Combustion Residual (CCR) Rules under section 257.83. Prior inspections were conducted in 2008, 2009, 2013 by the Minnesota Department of Natural Resources (DNR); in August 2009 by the EPA; annually from 2010 to 2014 by Qualified Professional Engineers in accordance with the DNR and Minnesota Pollution Control Agency (MPCA) inspection requirements; and annually since 2015 by a Qualified Professional Engineer in accordance with EPA CCR Rules.

The following items were evaluated as a part of the Section 257.83 Inspection:

i) Any changes in geometry of the impounding structure since the previous inspection

Annual topographic surveys have been conducted on the Pond since initial construction in 2004. During that time, no changes in pond geometry or embankment alignment have been observed.

ii) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection

The only instrumentation on Pond 3 is a staff gauge used to determine water surface elevation, located on the west side of the discharge structure. The Pond water level was 996.4 feet above mean sea level (MSL) during the 2018 CCR inspection and rose to 998.8 feet MSL during the 2019 inspection. The top of clay liner elevation is 1010 feet MSL. No instrumentation is needed for dike stability.

iii) The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection

The lowest elevation of the Pond 3 Liner is 938 feet MSL; therefore, the minimum depth of impounded water was 58.4 feet (at elevation 996.4 feet MSL) and present/maximum depth of water impounded since the previous annual inspection was 60.8 feet (at elevation of 998.8 feet MSL).

Two forms of CCR are deposited or placed in Pond 3. Solid bottom ash is excavated and hauled from the Bottom Ash Pond (see figure 1) and used above the water level in Pond 3 and compacted as a structural fill, or deposited in the pond, and not compacted. The highest elevation of bottom ash diked

inside of the clay liner is elevation 1010 feet MSL. This equates to a depth of 72 feet. The scrubber solids are sluiced to the Pond and create a delta with a maximum elevation of 1008 feet MSL. This equates to a maximum depth of scrubber solids of 70 feet. The lowest elevation of deposited CCR recorded in Pond 3 from a bathymetric survey conducted in June 2017 is 949 feet MSL. This equates to a depth of 11 feet.

iv) The storage capacity of the impounding structure at the time of the inspection

The remaining capacity of Pond 3 to elevation 1010 feet MSL (top of currently-constructed clay liner) is:

- 3.5 Million Cubic Yards (from the surface of CCR)
- 1.5 Million Cubic Yards (from top of water, elevation 998.75 feet MSL)

v) The approximate volume of the impounded water and CCR at the time of the inspection

There was approximately 2.2 Million Cubic Yards of impounded water and 4.7 Million Cubic Yards of CCR in the Pond at the time of inspection.

vi) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures

The exterior of the Pond was inspected for structural weakness in the form of seepage by walking a traverse at the base, mid-slope, and top of the embankment. Signs of seepage would include saturated areas, patches of grass more lush than the surrounding area or flowing “springs”. There were no signs that seepage had previously or is presently occurring on Pond 3.

The discharge pipe corridor was inspected for signs of a leakage, such as saturated areas or sinkholes. No signs of leakage were observed along the pipe corridor or in the vault located north of Pond 3.

The water level in Pond 3 has remained static or increased throughout the past year. Increases can be attributed to scrubber solid deposition and water accumulation from storm events.

vii) Any other changes(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection

There have not been any changes that have affected the stability of the pond.

I have reviewed the CCR Unit Design and Construction information and have observed no deviations from those documents.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. Riggs", with a stylized flourish extending from the end.

Daniel J. Riggs, PE
License No. 49559
Senior Engineer
Carlson McCain, Inc.



FIGURE 1
POND 3
2019 ANNUAL INSPECTION
POND LAYOUT



FIGURE 2
POND 3 ANNUAL
2019 INSPECTION
PHOTO LOCATIONS - NORTH HALF



FIGURE 3
POND 3 ANNUAL
2019 INSPECTION
PHOTO LOCATIONS - SOUTH HALF

Pond 3 Annual Inspection - October 2019



Photo 1	Outer slope of south embankment, looking east
10/24/2019	



Photo 2	Outer slope of south embankment, looking west
10/24/2019	

Pond 3 Annual Inspection - October 2019



Photo 3	South end of east embankment, looking southwest.
10/24/2019	



Photo 4	South end of east embankment, looking north.
10/24/2019	

Pond 3 Annual Inspection - October 2019



Photo 5	East embankment, looking north
10/24/2019	



Photo 6	East embankment, looking south
10/24/2019	

Pond 3 Annual Inspection - October 2019



Photo 7	East embankment, looking southwest.
10/24/2019	



Photo 8	North end of east embankment, looking northwest.
10/24/2019	

Pond 3 Annual Inspection - October 2019



Photo 9	North embankment, looking west.
10/24/2019	



Photo 10	North embankment, looking east
10/24/2019	

Pond 3 Annual Inspection - October 2019



Photo 11	Pond 3 discharge pipe vault and pipeline corridor, looking southeast.
10/24/2019	



Photo 12	Pond 3 staff gauge, reading an elevation of 998.75 feet (mean sea level).
10/24/2019	

Pond 3 Annual Inspection - October 2019



Photo 13	Interior of west embankment, looking south.
10/24/2019	



Photo 14	Top of north embankment, looking east.
10/24/2019	

Pond 3 Annual Inspection - October 2019



Photo 15	Top of north embankment, looking west.
10/24/2019	



Photo 16	Interior of east embankment, looking south.
10/24/2019	

Pond 3 Annual Inspection - October 2019



Photo 17	Pond 3 Unit Marker installed in accordance with 257.73(A)(1).
10/24/2019	



Photo 18	Top of east embankment, looking north.
10/24/2019	

Pond 3 Annual Inspection - October 2019



Photo 19	Interior of east embankment, looking south.
10/24/2019	



Photo 20	Interior of south embankment, looking west.
10/24/2019	

Pond 3 Annual Inspection - October 2019



Photo 21	Interior of west embankment, looking north.
10/24/2019	



Photo 22	Scrubber solids discharge pipe, looking east.
10/24/2019	