

January 4, 2021

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

**Re: 2020 Annual Inspection of Scrubber Solids Pond No. 3**

The Scrubber Solids Pond No. 3 (Pond 3) inspection was conducted on November 19<sup>th</sup>, 2020 by Daniel J. Riggs, a professional engineer licensed in the State of Minnesota. This was the sixth 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 998.8 feet above mean sea level (MSL) during the 2019 CCR inspection and fell to 998.3 feet MSL during the 2020 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 60.3 feet (at elevation 998.3 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)
- 1.6 Million Cubic Yards (from top of water, elevation 998.3 feet MSL)

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

There was approximately 2.0 Million Cubic Yards of impounded water and 5.0 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.

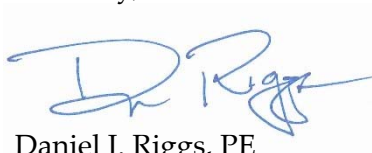
The water level in Pond 3 has remained static or marginally decreased throughout the past year. Decreases can be attributed to a late summer and fall with little to no precipitation.

*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", is positioned above the printed name.

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

12/30/2020

P:\Projects\XCEL\3404-01\_Sherco Ash Management\CCR Assistance\Annual Inspections\Nov 2020 Inspection\figures\Figure 1 - Pond 3 Inspection.dgn



FIGURE 1  
POND 3  
2020 ANNUAL INSPECTION  
POND LAYOUT

P:\Projects\XCEL\3404-01\_Sherco Ash Management\CCR Assistance\Annual Inspections\Nov 2020 Inspection\figures\Figure 2 - Pond 3 photos - north.dgn 12/30/2020



NOTE: AERIAL PHOTO FROM SHERBURNE COUNTY  
SPRING, 2020

FIGURE 2  
POND 3 ANNUAL  
2020 INSPECTION  
PHOTO LOCATIONS - NORTH HALF

12/30/2020  
P:\Projects\XCEL\3404-01\_Sherco Ash Management\CCR Assistance\Annual Inspections\Nov 2020 Inspection\figures\Figure 2 - Pond 3 photos - south.dgn



FIGURE 3  
POND 3 ANNUAL  
2020 INSPECTION  
PHOTO LOCATIONS - SOUTH HALF

## Pond 3 Annual Inspection - 2020



Photo 1	Outer slope of south embankment, looking east
11/19/2020	



Photo 2	Outer slope of south embankment, looking west
11/19/2020	

## Pond 3 Annual Inspection - 2020



Photo 3	Outer slope of south embankment and southeast corner of pond, looking west
11/19/2020	



Photo 4	South end of east embankment, looking northwest.
11/19/2020	

## Pond 3 Annual Inspection - 2020



Photo 5	Mid-slope east embankment, looking north
11/19/2020	



Photo 6	East embankment, looking south
11/19/2020	

## Pond 3 Annual Inspection - 2020



Photo 7	East embankment, looking north.
11/19/2020	



Photo 8	Middle of east embankment, looking south.
11/19/2020	

## Pond 3 Annual Inspection - 2020



Photo 9	East embankment, looking south.
11/19/2020	



Photo 10	East embankment, looking north.
11/19/2020	

## Pond 3 Annual Inspection - 2020



Photo 11	Top of northern access ramp on east embankment, looking south.
11/19/2020	



Photo 12	Northern end of east embankment, looking north.
11/19/2020	

## Pond 3 Annual Inspection - 2020



Photo 13	North embankment, looking west.
11/19/2020	



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

## Pond 3 Annual Inspection - 2020



Photo 15	Pond 3 discharge pipe vault and pipeline corridor, looking southeast.
11/19/2020	



Photo 16	Pond 3 discharge pipe corridor, looking northwest.
11/19/2020	

## Pond 3 Annual Inspection - 2020



Photo 17	Pond 3 staff gauge, reading an elevation of 998.25 feet (mean sea level).
11/19/2020	



Photo 18	Interior of west embankment, looking south.
11/19/2020	

## Pond 3 Annual Inspection - 2020



Photo 19	Interior of north embankment, looking east.
11/19/2020	



Photo 20	Top of outer slope of north embankment, looking west.
11/19/2020	

## Pond 3 Annual Inspection - 2020



Photo 21	Interior of east embankment, looking south.
11/19/2020	



Photo 22	Top of east embankment, looking north.
11/19/2020	

## Pond 3 Annual Inspection - 2020



Photo 23	Interior of east embankment, looking south.
11/19/2020	



Photo 24	Interior of east embankment, looking north.
11/19/2020	

## Pond 3 Annual Inspection - 2020



Photo 25	Interior of east embankment, looking north.
11/19/2020	



Photo 26	Interior of south embankment, looking west.
11/19/2020	

## Pond 3 Annual Inspection - 2020



Photo 27	Interior of west embankment, looking north.
11/19/2020	



Photo 28	Interior pond dike, looking west.
11/19/2020	