SCS ENGINEERS

Annual CCR Landfill Inspection
PCS Bottom Ash Pile
PCS Beneficial Use Storage Area

Prairie Creek Generating Station

Prepared for:

Interstate Power and Light Company

Prairie Creek Generating Station
3300 C Street SW
Cedar Rapids, Iowa 52404

Prepared by:

SCS ENGINEERS
2830 Dairy Drive
Madison, Wisconsin 53718-6751
(608) 224-2830

December 2017
File No. 25216074.17

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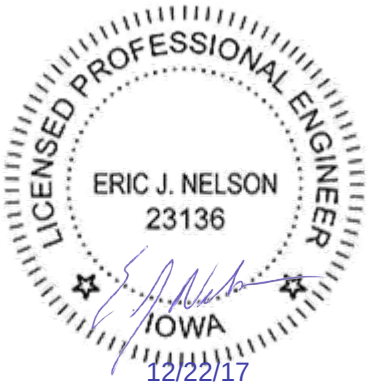
PE CERTIFICATION



I, Eric J. Nelson, hereby certify that this Annual CCR Landfill Inspection Report meets the requirements of 40 CFR 257.84(b)(2), was prepared by me or under my direct supervision, and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

12/22/2017

(signature) (date)

Eric J. Nelson

(printed or typed name)

License number 23136

My license renewal date is December 31, 2018.

Pages or sheets covered by this seal:

All - IPL Prairie Creek Annual CCR Landfill Inspection, December 2017

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1.0 INTRODUCTION

1.1 PURPOSE

SCS Engineers (SCS) completed an annual inspection of two existing coal combustion residual (CCR) piles at the Interstate Power and Light Company (IPL) Prairie Creek Generating Station (PCS) in Cedar Rapids, Iowa. These piles are considered to be landfills according to the definitions in 40 CFR 257.53. The annual inspection was completed in accordance with the U.S. Environmental Protection Agency (USEPA) CCR Rule, 40 CFR 257 Subpart D, in particular 257.84(b)(1). According to 40 CFR 257.84(b)(1), an annual inspection by a qualified professional engineer is required for all existing and new CCR landfills and any lateral expansion of a CCR landfill. The purpose of the annual inspection is to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:

- A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspections by a qualified person, and results of previous annual inspections); and

- A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

This report has been prepared in accordance with 40 CFR 257.84(b)(2) to document the annual inspection.

1.2 BACKGROUND

The PCS facility includes two CCR piles that are used to store bottom ash. These piles are considered to be landfills by the CCR Rule. The CCR landfills at PCS include the following CCR units:

- PCS Bottom Ash Pile
- PCS Beneficial Use Storage Area

The inspection requirements in 40 CFR 257.84(b)(1) apply to the two existing CCR units listed above, which were both actively being used at the time of the inspection. A description of each of the CCR units is provided in the sections below. The descriptions were obtained from the January 2016 Annual Inspection Report prepared by Hard Hat Services (HHS) of Naperville, Illinois.

1.2.1 PCS Bottom Ash Pile

The PCS Bottom Ash Pile is located immediately east of the where the sluiced CCR enters PCS Pond 1. Typically a front end loader is used to remove CCR from the pond bottom and pile it east of the limits of Pond 1. All water that drains from the Bottom Ash Pile sheet-flows back

into Pond 1. Although the PCS Bottom Ash Pile is not within the limits of Pond 1, it is located within close proximity (HHS, 2016).

1.2.2 PCS Beneficial Use Storage Area

After the CCR is dewatered at the PCS Bottom Ash Pile, the CCR is either hauled directly off site or transported to the on-site PCS Beneficial Use Storage Area. The PCS Beneficial Use Storage Area is located approximately 1,300 feet west-southwest of the PCS Bottom Ash Pile and is in between two sets of railroad tracks that run along the north and south sides of the PCS Beneficial Use Storage Area. Because the area is flat, surface water runoff often pools in the area and either evaporates or infiltrates into the ground (HHS, 2016).

2.0 SUMMARY OF RESULTS AND RECOMMENDATIONS

SCS identified no deficiencies or releases during the annual inspection of the CCR units at PCS. Deficiencies and releases must be remedied by the owner or operator as soon as feasible and the remedy documented.

In addition, SCS did not identify any conditions during the annual inspection that, in our opinion, have the potential to become a deficiency if left unaddressed.

3.0 ANNUAL INSPECTION

Mr. Eric Nelson of SCS completed an annual inspection of active CCR landfill areas at PCS, including the PCS Bottom Ash Pile and PCS Beneficial Use Storage Area, on October 6, 2017. Mr. Nelson is a licensed professional engineer in Iowa and holds a Bachelor of Science degree in Geological Engineering. He has over 19 years of experience in the design, construction, and operation of solid waste disposal facilities.

This was the third annual inspection of the PCS Bottom Ash Pile and PCS Beneficial Use Storage Area. The initial annual inspection was completed by HHS on December 7, 2015. The initial annual inspection was documented in the January 2016 Annual Inspection Report prepared by HHS. The scope of the annual inspection is described in **Sections 3.1** and **3.2**. The results of the annual inspection are discussed in **Section 4.0**.

3.1 OPERATING RECORD REVIEW

SCS reviewed the available information in the operating record for the existing landfills at PCS prior to the visual inspection discussed in **Section 3.2**. Information reviewed by SCS included operating record materials provided by IPL and the information posted on Alliant Energy's CCR Rule Compliance Data and Information website for the existing landfills at the PCS facility.

3.2 VISUAL INSPECTION

SCS completed a visual inspection of the PCS Bottom Ash Pile and PCS Beneficial Use Storage Area to identify signs of distress or malfunction of the CCR unit.

The visual inspection included observations of the following:

- CCR placement areas
- Non-contact storm water run-on and CCR run-off control features

4.0 INSPECTION RESULTS

The results of the annual inspection, along with a description of any deficiencies or releases identified during the visual inspection, are summarized in the following sections.

4.1 CHANGES IN GEOMETRY

This is the third annual inspection of the PCS Bottom Ash Pile and PCS Beneficial Use Storage Area at the PCS facility completed under 40 CFR 257.84(b)(1). Based on conversations with plant staff during the inspection and review of information in the operating record, the CCR in the two piles is moved in and out of inventory on a regular basis throughout the year. Changes in the geometry of the piles occur regularly as a result of the operation of these CCR units. No apparent changes in geometry were noted that would indicate distress or malfunction of the CCR units at the facility.

At the time of the visual inspection, active CCR placement and storage was ongoing at the PCS Bottom Ash Pile and the PCS Beneficial Use Storage Area as evidenced by CCR disturbance and equipment tracks in the pile areas. CCR was removed from the PCS Beneficial Use Storage Area shortly before the visual inspection. Equipment for loading CCR onto outgoing trucks at the unit location departed as SCS arrived to conduct the inspection.

4.2 CCR VOLUMES

The approximate volume of CCR contained in each of the CCR units at the time of the inspection is summarized below. A description of how the estimate was developed and the sources used are also summarized below.

CCR Unit	Estimated Volume of CCR in Place	Basis for Estimate and Source
PCS Bottom Ash Pile	210 cubic yards	Approximate CCR pile dimensions (average 46 feet in diameter by 10 feet high) at the time of the visual inspections based on SCS observations and field measurements. Volume is approximated by a cone with a diameter of 46 feet and height of 10 feet.
PCS Beneficial Use Storage Area	950 cubic yards	Approximate CCR pile dimensions (average 90 feet in diameter by 12 feet high) at the time of the visual inspections based on SCS observations and field measurements. Volume is approximated by a cone with a diameter of 90 feet and height of 12 feet.

4.3 APPEARANCE OF STRUCTURAL WEAKNESS

The inspection included a review of the appearance of an actual or potential structural weakness of the CCR unit. The visual inspection included a review of CCR pile areas for the presence of the following conditions:

- Signs of surface movement or instability
- Inappropriate vegetation growth
- Animal burrows
- Erosion damage
- Unusual surface damage caused by vehicle traffic

4.3.1 Signs of Surface Movement or Instability

No signs of surface movement or instability were noted during the inspection of the PCS Bottom Ash Pile or the PCS Beneficial Use Storage Area.

4.3.2 Inappropriate Vegetation Growth

No inappropriate vegetation growth was noted during the inspection of the PCS Bottom Ash Pile or the PCS Beneficial Use Storage Area.

4.3.3 Animal Burrows

No animal burrows were noted during the inspection of the PCS Bottom Ash Pile or the PCS Beneficial Use Storage Area.

4.3.4 Erosion Damage

No erosion damage was noted during the inspection of the PCS Bottom Ash Pile or the PCS Beneficial Use Storage Area.

4.3.5 Unusual Surface Damage Caused by Vehicle Traffic

No unusual surface damage caused by vehicle traffic was noted during the inspection of the PCS Bottom Ash Pile or the PCS Beneficial Use Storage Area.

4.4 DISRUPTIVE CONDITIONS

4.4.1 Existing Disruptive Conditions

4.4.1.1 Current Inspection

No existing conditions that were disrupting the operation and safety of the CCR units were noted during the annual inspection.

4.4.1.2 Previous Inspection

No existing conditions that were disrupting the operation and safety of the CCR units were noted during the previous inspection.

4.4.2 Potentially Disruptive Conditions

4.4.2.1 Current Inspection

No potentially disruptive conditions were noted during the annual inspection.

4.4.2.2 Previous Inspection

No potentially disruptive conditions were noted during the previous inspection.

4.5 OTHER CHANGES SINCE PREVIOUS ANNUAL INSPECTION

No other changes to site conditions that appear to have the potential to affect the stability or operation of the facility were noted during the inspection of the PCS Bottom Ash Pile or the PCS Beneficial Use Storage Area.

5.0 FUTURE INSPECTIONS

As stated in 40 CFR 257.84(b)(4), the owner or operator of the CCR unit must conduct the inspection required by paragraphs (b)(1) and (2) of this section on an annual basis. The date of completing the inspection report is the basis for establishing the deadline to complete the next subsequent inspection. Any required inspection may be conducted prior to the required deadline provided the owner or operator places the completed inspection report into the facility's

operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. The owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record.

The next annual inspection of the PCS Bottom Ash Pile or the PCS Beneficial Use Storage Area must be completed within 1 year of the placement of this inspection report in the operating record for the PCS facility.

6.0 REFERENCES

Hard Hat Services (HHS), 2016, Alliant Energy Interstate Power and Light Prairie Creek Generating Station, CCR Pile (Landfill) – Annual Inspection Report, Naperville, IL, January 2016.