



**Stantec Consulting Services Inc.**  
11687 Lebanon Road, Cincinnati, OH 45241

October 11, 2016  
File: 175543017  
Revision 0

Indiana-Kentucky Electric Corporation  
3932 U.S. Route 23  
P.O. Box 468  
Piketon, Ohio 45661

**RE: Liner Design Demonstration  
Landfill Runoff Collection Pond  
EPA Final Coal Combustion Residuals (CCR) Rule  
Clifty Creek Station  
Madison, Jefferson County, Indiana**

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## **1.0 PURPOSE**

This letter documents Stantec's certification of the existing liner assessment for the Indiana-Kentucky Electric Corporation (IKEC) Clifty Creek Station's Landfill Runoff Collection Pond. Based on the assessment, the Landfill Runoff Collection Pond is considered an unlined CCR surface impoundment as described in the EPA Final CCR Rule at 40 CFR 257.71(a)(3).

## **2.0 EXISTING LINER ASSESSMENT**

An existing surface impoundment must be evaluated as to whether or not it was constructed with a liner as described in 40 CFR 257.71(a)(1)(i)-(iii).

## **3.0 SUMMARY OF FINDINGS**

The attached report presents the analysis for the existing liner assessment. The report concludes that the Landfill Runoff Collection Pond at the Clifty Creek Plant was not constructed with a liner that complies with the requirements of §257.71 of the EPA Final CCR Rule. Therefore, this unit is considered an unlined surface impoundment that is allowed to remain in operation in compliance with the requirements of §257.101(a).

## **4.0 QUALIFIED PROFESSIONAL ENGINEER CERTIFICATION**

I, Stan A. Harris, being a Professional Engineer in good standing in the State of Indiana, do hereby certify, to the best of my knowledge, information, and belief:

1. that the information contained in this certification is prepared in accordance with the accepted practice of engineering;
2. that the information contained herein is accurate as of the date of my signature below;  
and

Design with community in mind



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3. that the IKEC Clifty Creek Station's Landfill Runoff Collection Pond is considered an unlined CCR surface impoundment as described in 40 CFR 257.71(a)(3).

SIGNATURE  DATE 10/11/16

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TELEPHONE: (513) 842-8200

ATTACHMENTS: Clifty Creek Landfill Runoff Collection Pond Liner Design Demonstration



# Liner Design

**CFR 257.71**

## Landfill Run-off Collection Pond

Clifty Creek Station

Madison, Indiana

October 2016

Prepared by: Indiana-Kentucky Electric Corporation

3932 U.S. Route 23

Piketon, OH 45661



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## **1.0 OBJECTIVE**

This report has been prepared to fulfill the requirements of 40 CFR 257.71(a) of the Coal Combustion Residuals (CCR) Rule, documenting if the Clifty Creek Station's Landfill Run-off Collection Pond (LRCP) was constructed with a liner as defined in 40 CFR 257.71(a)(1)(i)-(iii).

## **2.0 DESCRIPTION OF THE CCR UNIT**

The Clifty Creek Station is located on the shore of the Ohio River near Madison, Indiana. It consists of six coal-fired electric generating units; each nominally rated at 217 megawatts. The station began producing electricity in 1955 to support the Department of Energy's (DOE's) Portsmouth Gaseous Diffusion Plant located near Piketon, Ohio. The LRCP is located approximately one mile west of the Station.

By definition of the EPA Final CCR Rule, the LRCP is considered to be an inactive surface impoundment. It contains CCR material and still serves as a pond receiving leachate from the CCR landfill and non-contact storm water. The LRCP was originally constructed to store fly ash, but ceased receiving sluiced fly ash in 1990 when the Station converted to dry fly ash handling. The LRCP is consists of approximately 40 acres.

## **3.0 DETERMINATION OF LINER DESIGN 257.71(a)(3)(i)**

***[An existing CCR surface impoundment is considered to be an existing unlined surface impoundment if... (i) The owner or operator of the CCR unit determines that the CCR unit is not constructed with a liner that meets the requirements of paragraphs (a)(1)(i), (ii), or (iii)...]***

Definitive information is not available to demonstrate that the Clifty Creek Station LRCP was constructed with a liner system that meets the definitions found in 40 CFR 257.71(a)(1)(i), (ii), or (iii). A complete set of design plans and associated construction documents are not available for review, resulting in the inability to confirm the presence of two feet of compacted soil in the base of the impoundment or the hydraulic conductivity thereof.

However, based on the design and construction information and plans available, the LRCP was constructed in a controlled manner, which included an executed soil boring plan, excavation to controlled elevations, placement and compaction of soil-type materials across the impoundment base and embankments. This work was performed by Green Construction Company of Oaktown, Indiana, with design and construction oversight from Leo and Arthur Casagrande of Cambridge, Massachusetts.