



**ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING**

CLOSURE PLAN

**IPL PETERSBURG GENERATING STATION
ASH PONDS A, A' AND C**

**INDIANAPOLIS POWER & LIGHT COMPANY
PETERSBURG GENERATING STATION
6925 NORTH STATE ROAD 57
PETERSBURG, INDIANA 47567**

OCTOBER 11, 2016

PREPARED FOR:

INDIANAPOLIS POWER & LIGHT COMPANY

ATTENTION: MR. JEFF HARTER, ENVIRONMENTAL LEADER



October 11, 2016

Mr. Jeff Harter
Environmental Leader
Indianapolis Power & Light Company
Petersburg Generating Station
6925 North State Route 57
Petersburg, IN 47567

ATC Group Services LLC

7988 Centerpoint Dr.
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Indianapolis, IN 46256

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Re: CCR Closure Plan
IPL Petersburg Generating Station
Ash Ponds A, A' and C
Petersburg, Indiana

Dear Mr. Harter:

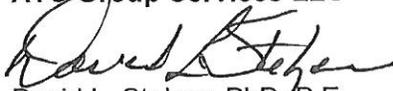
ATC is pleased to present the following CCR Closure Plan for Ash Ponds A, A' and C at the IPL Petersburg Generating Station. Contained herein is a copy of the report which summarizes the compliance of the closure plan with requirements of 40 C.F.R. Part 257, Subpart D.

A summary of the final cover systems, engineering design measures, narrative of closure activities, an approximate timeline for closure, and engineering certification are included with this report.

We appreciate the opportunity to assist you with this project. If you have any questions concerning information contained in this report, please do not hesitate to call either of the undersigned at 317.849.4990.

Sincerely,

ATC Group Services LLC


David L. Stelzer, PhD, P.E.
Senior Project Engineer


Donald Bryenton, P.E.
Principal Engineer

CCR CLOSURE PLAN

Final



INDIANAPOLIS POWER & LIGHT COMPANY
PETERSBURG GENERATING STATION
ASH PONDS A, A' AND C

PREPARED FOR:
INDIANAPOLIS POWER & LIGHT COMPANY

PREPARED BY:
ATC GROUP SERVICES LLC

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1 INTRODUCTION

Under 40 C.F.R. § 257.102(b), the owner or operator of a CCR unit must prepare a written closure plan that describes the steps necessary to close the CCR unit consistent with recognized and generally accepted good engineering practices at any point during the active life of the CCR unit. The Closure Plan outlined below is provided to meet this requirement.

1.1 PURPOSE

The Closure Plan for IPL's Petersburg Station Ash Ponds A, A' and C is intended to satisfy requirements set forth by the CCR Rule. In accordance with 40 C.F.R. § 257.102(d)(1), the ash ponds will be closed in a manner that will:

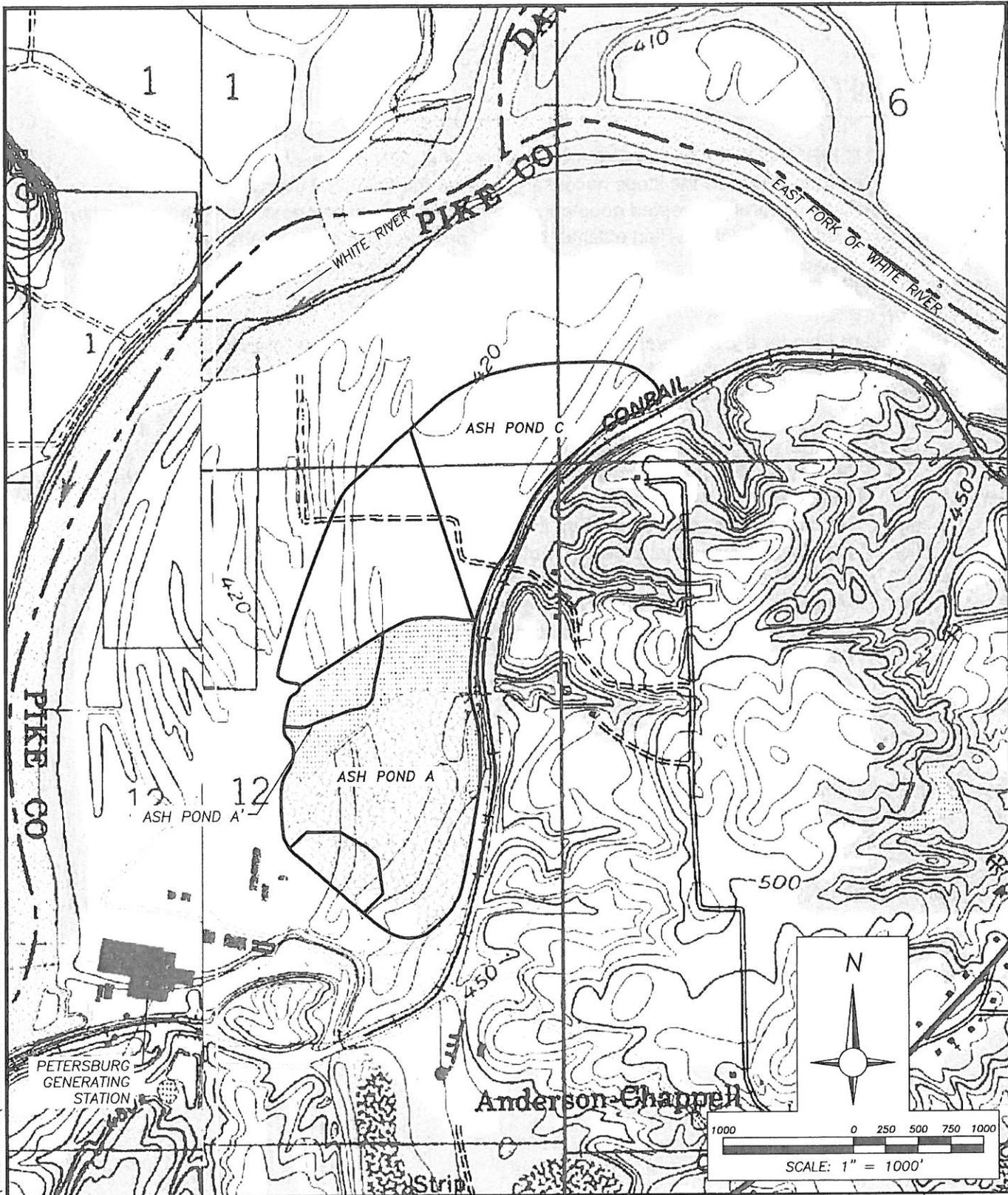
- (i) Control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquid into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere;
- (ii) Preclude the probability of future impoundment of water, sediment, or slurry;
- (iii) Include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period;
- (iv) Minimize the need for further maintenance of the CCR unit; and
- (v) Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.

1.2 FACILITY & SITE DESCRIPTIONS

The IPL Petersburg Generating Station Ash Pond System is located approximately four (4) miles north of the City of Petersburg in Pike County, Indiana (Figure 1). The information contained in this Closure Plan will be used to assist IPL in the closure of the Ash Ponds A, A' and C, which occupy an area of approximately 109 acres, on property owned by IPL.

1.3 CCR UNIT NAMES

The CCR unit names are Ash Ponds A, A' and C, which are all located within the ash pond system at IPL's Petersburg Generating Station in Pike County, Indiana. The approximate location of each of the ponds is noted on Figure 1.



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VICINITY MAP

IPL PETERSBURG GENERATING STATION
 ASH POND CLOSURE AREA
 PETERSBURG, INDIANA

Project Number: 170LF00104		Drn. By: WS
Drawing File: SEE LOWER LEFT		Ckd. By: CD
Date: 9/16	Scale: AS SHOWN	App'd By:
ATC		Figure: 1

2 PLANNED CLOSURE ACTIVITIES

Ash Ponds A, A' and C will be closed in accordance with 40 C.F.R. § 257.102(d) by leaving the CCR in place. Proposed closure activities are summarized below:

- Removal and treatment of free liquids
- CCR dewatering and treatment (as needed)
- Stabilization of remaining CCR to provide support of the final cover system (as needed)
- Grading to promote drainage and prevent movement of the final cover system
- Installation of the final cover system
- Installation of surface water control system
- Certification of Closure

3 DESCRIPTION OF FINAL COVER SYSTEM

Closure of the CCR Unit will be accomplished by leaving the CCR materials in place. The final cover system will meet the following requirements specified in 40 C.F.R. § 257.102(d)(3)(i):

- (A) The permeability of the final cover system must be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less.
- (B) The infiltration of liquids through the closed CCR unit must be minimized by the use of an infiltration layer that contains a minimum of 18 inches of earthen material.
- (C) The erosion of the final cover system must be minimized by the use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth.
- (D) The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence.

The final cover system will consist of an established vegetated soil layer or a vegetated composite cover. The final cover system will include run-on and run-off controls to minimize both the potential for erosion of the vegetative layer and the ponding of water on the final cover. Storm water control measures (i.e., diversion berms, channels, downslope pipes, and/or downchutes) will convey surface run-off from the cover.

4 ESTIMATED MAXIMUM INVENTORY OF CCR

The volumes of CCR present in Ash Ponds A, A' and C, which are listed below, were estimated based on information provided by the Petersburg Generating Station.

<u>Ash Pond</u>	<u>Estimated Volume of CCR Materials, cubic yards</u>
A	1,560,000
A'	150,000
C	2,040,000

5 ESTIMATED SURFACE AREA OF FINAL COVER

The estimated largest total area ever requiring final cover at any time during the CCR unit's active lives is estimated to be approximately 109 acres.

6 SCHEDULE FOR CLOSURE ACTIVITIES

Currently it is anticipated that closure of Ash Ponds A, A', and C will be initiated in general accordance with 40 C.F.R. § 257.102(e) no later than January 1, 2018 and completed within five years of the commencement of closure in general accordance with 40 C.F.R. § 257.102(f)(1)(ii) and 40 C.F.R. § 257.102(f)(2)(ii). A detailed demonstration regarding the need for any extensions to the closure timeframe in accordance with 40 C.F.R. § 257.102(f)(2)(iii) will be provided as needed.

It will be necessary to obtain all required local, state, and federal permits prior to the start of closure activities, in addition to the preparation of final closure construction design documents. A preliminary estimate of the timeframe of anticipated closure activities includes the following:

<u>Activity</u>	<u>Duration, years</u>
Dewatering and Stabilization	1
CCR Excavation and Grading	2
Installation of Final Cover	2

Based on this schedule, closure activities will be completed by January 1, 2023.

7 AMENDMENTS TO CLOSURE PLAN

In accordance with 40 C.F.R. § 257.102(b)(3), the owner or operator may amend the initial or any subsequent written closure plan developed pursuant to 40 C.F.R. § 257.102(b)(1) at any time.

The owner or operator will amend the written closure plan whenever:

- (A) There is a change in the operation of the CCR unit that would substantially affect the written closure plan in effect; or
- (B) Before or after closure activities have commenced, unanticipated events necessitate a revision of the written closure plan.

8 CERTIFICATIONS

I, Donald L. Bryenton, being a registered Professional Engineer in the State of Indiana, do hereby certify to the best of my knowledge, information and belief, that the information contained in this written Closure Plan was developed in general accordance with the requirements of 40 C.F.R. § 257.102(b) and has been prepared in accordance with recognized and generally accepted good engineering practices.

AUTHORIZED REPRESENTATIVE:

Donald L. Bryenton

DATE:

10/11/16

ADDRESS:

ATC Group Services LLC
7988 Centerpoint Drive, Suite 100
Indianapolis, Indiana 46256



Final



**ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING**

POST-CLOSURE PLAN

**IPL PETERSBURG GENERATING STATION
ASH PONDS A, A', AND C**

INDIANAPOLIS POWER & LIGHT COMPANY
PETERSBURG GENERATING STATION
6925 NORTH STATE ROAD 57
PETERSBURG, INDIANA 47567

OCTOBER 11, 2016

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ATTENTION: MR. JEFF HARTER, ENVIRONMENTAL LEADER



October 11, 2016

Mr. Jeff Harter,
Environmental Leader
Indianapolis Power & Light Company
Petersburg Generating Station
6925 North State Route 57
Petersburg, IN 47567

ATC Group Services LLC

7988 Centerpoint Dr.
Suite 100
Indianapolis, IN 46256

Re: CCR Post-Closure Plan
IPL Petersburg Generating Station
Ash Ponds A, A' and C
Petersburg, Indiana
ATC Project No. 170LF00274

Phone +1 317 849 4990
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www.atcgroupservices.com

Dear Mr. Harter:

ATC is pleased to present the following CCR Post-Closure Plan for Ash Ponds A, A' and C at IPL's Petersburg Generating Station. Contained herein is a copy of the report which summarizes the compliance of the post-closure plan with requirements of 40 C.F.R. Part 257, Subpart D.

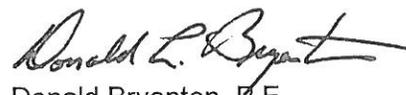
A summary of the maintenance activities for the final cover system, groundwater monitoring, narrative of post-closure activities, and engineering certification are included with this report.

We appreciate the opportunity to assist you with this project. If you have any questions concerning information contained in this report, please do not hesitate to call either of the undersigned at 317.849.4990.

Sincerely,

ATC Group Services LLC


David Stelzer, Ph.D., P.E.
Senior Project Engineer


Donald Bryenton, P.E.
Principal Engineer

CCR POST-CLOSURE PLAN



INDIANAPOLIS POWER & LIGHT COMPANY
PETERSBURG GENERATING STATION
ASH PONDS A, A' AND C

PREPARED FOR:
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1 INTRODUCTION

Under 40 C.F.R. § 257.104(d), the owner or operator of a CCR unit must prepare a written post-closure plan that describes the steps necessary to care for, inspect, monitor and maintain the CCR unit during the post-closure time period consistent with recognized and generally accepted good engineering practices. The Post-Closure Plan outlined below is provided to meet this requirement.

1.1 PURPOSE

The Post-Closure Plan for IPL's Petersburg Station Ash Ponds A, A' and C is intended to satisfy requirements set forth by the CCR Rule. In accordance with 40 C.F.R. § 257.104, the ash ponds will be cared for, inspected, monitored, and maintained during the 30-year post-closure care period. The Post-Closure Plan includes protection measures to preserve the integrity of the final cover, sampling of monitoring wells and reporting, inspections, and as-needed repairs of drainage infrastructure, roads, and other features.

1.2 FACILITY & SITE DESCRIPTIONS

The IPL Petersburg Generating Station Ash Pond System is located about four (4) miles north of the City of Petersburg in Pike County, Indiana west of State Road 57 (Figure 1). The information contained in this Post-Closure Plan will be used to assist IPL in the post-closure activities associated with Ash Ponds A, A' and C, which occupy an area of approximately 109 acres, on property owned by IPL.

1.3 CCR UNIT NAME

The CCR unit names are Ash Ponds A, A' and C, which are all located within the ash pond system at IPL's Petersburg Generating Station in Pike County, Indiana. The approximate location of each of the ponds is noted on Figure 1.

2 MONITORING AND MAINTENANCE ACTIVITIES

In accordance with 40 C.F.R. § 257.104(b), the following post-closure activities will be performed at Ash Ponds A, A' and C:

- (1) Maintaining the integrity and effectiveness of the final cover system, including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;



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VICINITY MAP

IPL PETERSBURG GENERATING STATION
 ASH POND CLOSURE AREA
 PETERSBURG, INDIANA

Project Number: 170LF00104		Dwn. By: WS
Drawing File: SEE LOWER LEFT		Ckd. By: CD
Date: 9/16	Scale: AS SHOWN	App'd By:
ATC		Figure: 1

- (2) If the CCR unit is subject to the design criteria under §257.70, maintaining the integrity and effectiveness of the leachate collection and removal system and operating the leachate collection and removal system in accordance with the requirements of §257.70; and
- (3) Maintaining the groundwater monitoring system and monitoring the groundwater in accordance with the requirements of §257.90 through §257.98.

Activity	Minimum Frequency per Year
Monitoring Well Sampling	Twice
Mowing of Final Cover Vegetation	Once
Final Cover Inspection	Twice
Erosion Control Repairs	As Needed
Drainage Repairs	As Needed
Access Road Repairs	As Needed

Groundwater Monitoring will be conducted bi-annually in accordance with 40 C.F.R. § 257.90 through § 257.98. The groundwater monitoring wells and associated equipment will be repaired as needed.

No leachate collection system exists for Ash Ponds A, A' or C, therefore leachate maintenance activities are not applicable.

3 CONTACT INFORMATION FOR POST-CLOSURE CARE

The below information is the contact information available for the post-closure care period:

Facility Name IPL Petersburg Generating Station – Ash Ponds A, A' and C

Contact: Mr. Jeff Harter, Environmental Leader

Address: Indianapolis Power and Light Company
6925 North State Road 57
Petersburg, Indiana 47567

Telephone: 812-601.7224

E-mail Address: jeff.harther@aes.com

4 PROPERTY USE DURING POST-CLOSURE CARE

Use of IPL's the closure areas associated with Ash Ponds A, A' and C during the post-closure care period will be restricted to monitoring and maintenance activities. Access to the ash ponds will be

restricted to key IPL personnel and contractors on an as-needed basis for completion of inspections, monitoring, and maintenance procedures. Post-Closure activities will not disturb the integrity of the final cover, liner, or any other components of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements of 40 C.F.R. Part 257.

Ash Ponds A, A' and C are not individually fenced, however those areas are contained on IPL property which will be adequately fenced and secured to prevent outsider access.

5 COMPLETION OF POST-CLOSURE CARE

No later than 60 days following the completion of the post-closure care period, IPL will prepare a notification verifying that post-closure care has been completed. The notification will include certification by a qualified professional engineer verifying that post-closure care has been completed in accordance with the post-closure plan and the requirements of 40 C.F.R. § 257.104

6 AMENDMENTS TO POST-CLOSURE PLAN

In accordance with 40 C.F.R. § 257.104(d)(3), IPL may amend the Post-Closure Plan at any time as needed depending on changes in regulations, plant operations, labor, materials, expenses, or other unforeseen factors. IPL will amend the written closure plan whenever the following conditions exist:

- (A) There is a change in the operation of the CCR unit that would substantially affect the written post-closure plan in effect; or
- (B) After post-closure activities have commenced, unanticipated events necessitate a revision of the written post-closure plan.

7 CERTIFICATION

I, Donald L. Bryenton, being a registered Professional Engineer in the State of Indiana, do hereby certify to the best of my knowledge, information and belief, that the information contained in this written Post-Closure Plan was developed in general accordance with the requirements of 40 C.F.R. § 257.104(d) and has been prepared in accordance with recognized and generally accepted good engineering practices.

AUTHORIZED REPRESENTATIVE:

Donald L. Bryenton
ADDRESS:

ATC Group Services LLC
7988 Centerpoint Drive, Suite 100
Indianapolis, Indiana 46256

DATE:

10/11/16

