

# CLOSURE PLAN

**CCR 257.102(b)**

Gavin Residual Waste Landfill

Gavin Plant  
Cheshire, Ohio

October, 2016

Prepared for: AEP Generation Resources – Gavin Plant

Cheshire, Ohio

Prepared by: American Electric Power Service Corporation

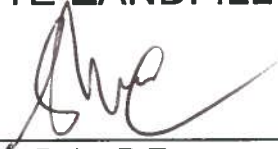
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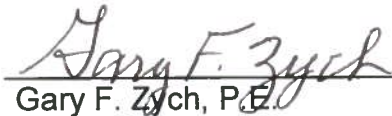


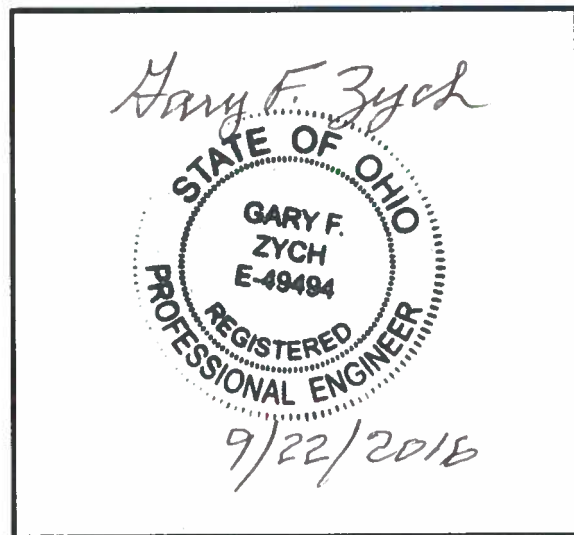
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CLOSURE PLAN  
CCR 257.102(b)  
GAVIN PLANT  
RESIDUAL WASTE LANDFILL

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Manager – AEP Geotechnical Engineering



I certify to the best of my knowledge, information, and belief that the information contained in this closure plan meets the requirements of 40 CFR § 257.102

I certify to the best of my knowledge, information and belief that design of the final cover system as described in this closure plan meets the requirements of 40 CFR § 257.102.

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## **1.0 OBJECTIVE**

This report was prepared by AEP- Geotechnical Engineering Services (GES) section to fulfill requirements of CCR 257.102(b) for Closure Plans of Existing CCR Units.

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

The AEP-Generation Resources (GENCO) owns and operates the Gavin Plant Residual Waste Landfill and associated facilities located 1.25 miles northwest of the Gavin Plant at 7397 North State Route 7 in Cheshire, Ohio. The Gavin Plant consists of two 1,300-megawatt (MW) coal combustion units that began operation in 1974 (Unit 1) and 1975 (Unit 2). Coal combustion byproduct waste (residual waste) generated at the plant is currently placed in a 255-acre landfill located northwest of the plant that is expected to reach its capacity in 2016. AEP is currently constructing a lateral and vertical expansion to the existing residual waste landfill under a new Permit-to-Install (PTI).

The Gavin plant is currently operated by AEP Generation Resources Inc. In September 2016, AEP announced the sale of the Gavin assets including the landfill. Pursuant to the sales agreement, the Gavin plant will be transferred to LightStone Generation (a joint venture between Blackstone and ArcLight Capital Partners, LLC) in 2017 after necessary regulatory approvals. During this interim period, AEP is doing project management and engineering support work and also providing transitioning support to LightStone Generation.

The new landfill footprint covers approximately 404 acres of the existing landfill, and unreclaimed strip mined areas in three predominant valleys separated by ridges and hilltops. The disposal area or "footprint" of waste within the proposed expansion facility will cover 149 acres beyond the existing landfill.

The landfill is permitted by the Ohio Environmental Protection Agency (Ohio EPA) as a residual solid waste landfill under the following permits.

<b>Landfill</b>	<b>OEPA PTI #</b>
Existing	06-3764
New	06-08447

## **3.0 DESCRIPTION OF CLOSURE PLAN 257.102(b)(1)(i)**

***[A narrative description of how the CCR unit will be closed in accordance with this section]***

The Gavin Residual landfill is and will be closed periodically during the life capacity of the facility. Closure of the landfill will consist of a cover system including a vegetative layer. The benches on the final cover will have minimum slope of 3% to minimize the potential for standing water and maximum slopes of 33% to promote drainage off the cover system. The closure activities are further discussed in the Ohio EPA-approved Closure Plan in Attachment A. This Plan in Attachment A contains all of the pertinent information and requirements of Section 257.102 (b).

#### **4.0 CLOSURE IN PLACE 257.102 (b)(1)(iii)**

*[If closure of the CCR unit will be accomplished by leaving the CCR in place, a description of the final cover system, designed in accordance with paragraph(d) of this section, and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in paragraph (d) of this section.]*

#### **4.1 CLOSURE PERFORMANCE STANDARDS 257.102 (d)(1)**

##### **4.1.1 SECTION 257.102(d)(1)(i)**

*[Control, minimize or eliminate, the maximum extent possible extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere.]*

The final cover system is designed to minimize infiltration into the landfill.

##### **4.1.2 SECTION 257.102(d)(1)(ii)**

*[Preclude the probability of future impoundment of water, sediment, or slurry.]*

The final surface areas will be graded to a minimum slope of 2% to prevent the ponding of surface water runoff. Drainage features will be designed to have positive drainage.

##### **4.1.3 SECTION 257.102(d)(1)(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.]*

The final cover system will be gently graded with a minimum of 2% slope. The final configuration of the facility will meet the stability requirements to prevent the sloughing or movement of the final cover system during the closure and post-closure care period.

##### **4.1.4 SECTION 257.102(d)(1)(iv)**

*[Minimize the need for further maintenance of the CCR unit.]*

The facility will be vegetated to prevent erosion. Maintenance of the final cover system will include mowing.

##### **4.1.5 SECTION 257.102(d)(1)(v)**

*[Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.]*

The CCR unit will be closed in a timeframe consistent with recognized and generally accepted good engineering practices. As the fill reaches the approved final grades, periodic closure activities may occur. Based on the design capacity and expected current disposal volume it is estimated that the new landfill will be closed after Year 2035.

## **4.2 DRAINING AND STABILIZING OF THE SURFACE IMPOUNDMENT**

### **257.102(d)(2)**

This section is not applicable to a landfill.

### **4.3 FINAL COVER SYSTEM 257.102 (d)(3)**

*[If a CCR unit is closed by leaving CCR in place, the owner or operator must install a final cover system that is designed to minimize infiltration and erosion , and at a minimum, meets the requirements of paragraph (d)(3)(i) of this section, or the requirements of the alternative final cover system specified in paragraph (d)(3)(ii) of this section.*

*The final cover system must be designed and constructed to meet the criteria in paragraphs (d)(3)(i)(A) through (D) of this section. The design of the final cover system must be included in the written closure plan.]*

The final cover system per the current approved permit and closure plan calls for the final cover system to consist of a re-compacted soil barrier layer and protective soil cover. AEP will be submitting an alternation to Ohio EPA to incorporate a flexible geomembrane liner into the final cover system in compliance with the CFR 257.102(d)(3)

### **5.0 ESTIMATE OF MAXIMUM CCR VOLUME 257.102 (b)(1)(iv)**

*[An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit.]*

The maximum CCR volume permitted for the existing landfill facility is approximately 52 million Cubic Yards and for the new landfill facility under construction is approximately 45.5 million Cubic Yards.

### **6.0 ESTIMATE OF LARGEST AREA OF CCR REQUIRING COVER 257.102 (b)(1)(v)**

*[An estimate of the largest area of CCR unit ever requiring a final cover*

The largest area of the CCR unit ever requiring a final cover at any time is 100 acres.

### **7.0 CLOSURE SCHEDULE 257.102(b)(1)(vi)**

*[A schedule for completing all activities necessary to satisfy the closure criteria in the section, including an estimate of the year in which all closure activities for the CCR unit will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR unit, including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of the CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of the CCR unit closure.*

At this time, the facility will close upon retirement of the power plant. Once the CCR unit requires closure a schedule to satisfy this section will be prepared and the Plan amended.



## **ATTACHMENT A**

**Closure Plan from Existing Landfill Permit**



**Final Closure/Post-Closure Plan**

OAC 3745-30-05 (C)(9)(d)/OAC 3745-30-09

**FINAL PERMIT-TO-INSTALL APPLICATION  
EXPANSION OF THE GENERAL JAMES M. GAVIN PLANT RESIDUAL WASTE  
LANDFILL FACILITY**

**VOLUME 5**

*Submitted to*

**Ohio Environmental Protection Agency**

*Submitted and Owned by*

**Ohio Power Company**

Cheshire, Ohio

*Prepared by*

**American Electric Power Service Corporation**

1 Riverside Plaza, Columbus Ohio 43215

*and*

**Geosyntec Consultants**

134 North LaSalle Street, Suite 300

Chicago, Illinois 60602

November 2, 2012



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### **LIST OF ACRONYMS**

EPA	Environmental Protection Agency
HDPE	High Density Polyethylene
PVC	Polyvinyl Chloride
OAC	Ohio Administrative Code
QA/QC	Quality Assurance/Quality Control
RSB	Recompacted Soil Barrier
RSL	Recompacted Soil Liner
RWL	Residual Waste Landfill

## **1. INTRODUCTION**

This residual waste facility Final Closure/Post-Closure Plan presents information for the closure and post-closure operations of the Ohio Power Company's Gavin Plant Residual Waste Landfill (RWL) Facility pursuant to Ohio Administrative Code (OAC) 3745-30-09 and OAC 3745-30-10. Drawings referenced herein are presented in the accompanying Permit-to-Install (PTI) drawing set.

## **2. FACILITY LOCATION**

The Gavin Plant Residual Waste Landfill (RWL) is located approximately 1.25 miles northwest of the Gavin Plant electrical generating facility located near the town of Cheshire in Cheshire Township, Gallia County, Ohio. More specifically, the RWL is located approximately 7,000 feet northwest of the intersection of State Highway 7 and State Highway 554.

### **3. VARIANCES /EXEMPTIONS**

At this time Ohio Power Company and AEP are not requesting any variances or exemptions to the requirements specified in OAC 3745-30-09 or OAC 3745-30-10, for residual waste landfills.

#### **4. FACILITY CONTACTS**

Any questions regarding the Gavin Plant RWL during the final closure and post-closure care period should be directed to:

American Electric Power/Ohio Power Company  
Land, Environment and Remediation Services Manager  
1 Riverside Plaza  
Columbus, Ohio 43215  
Ph. (614) 716-1266

or

American Electric Power/Ohio Power Company  
Gavin Plant  
Landfill Operations Manager  
7397 North State Route 7  
Cheshire, Ohio 45620-0271  
Ph. 740-925-3000 ext. 3135

## **5. PLANS AND DETAIL DRAWINGS**

The plans showing the horizontal limits and top and bottom elevations of the waste and the final cover system are shown on Drawings 4F, 4G, and 4H, respectively. Drawings 4I and 4J, the stormwater management plans, show the permanent stormwater run-on and run-off controls including ditches and sedimentation ponds. Detail drawings of the RWL stormwater controls are included on Drawings 7E, 7F and 7G. Detail drawings of the cover system are included on Drawing 7M.



## **6. STATIC AND SEISMIC STABILITY ANALYSIS**

The static and seismic stability analyses for the proposed completed landfill are provided in the *Settlement and Stability Analysis Report* (PTI Application Volume 3).

All factor of safety values calculated exceed the required minimum values of 1.50 for static conditions and 1.00 for seismic conditions, which are provided in OAC 3745-30-07(C)(11)(c) and OAC 3745-30-07(C)(11)(d) respectively, indicating that the proposed RWL is stable with respect to static and seismic conditions.

## **7. GROUNDWATER MONITORING PLAN**

The *Groundwater Monitoring Plan* is included in Volume 5.

## **8. FINANCIAL ASSURANCE**

Ohio Power Company will annually review, adjust and submit final closure and post-closure care cost estimates for the Gavin Plant RWL in accordance with OAC 3745-30-14(E)(14). The corporate guarantee will be used annually to demonstrate financial assurance for final closure and post-closure care. A draft copy of the financial assurance instrument is included in Appendix A.

The placement of final cover soils constitutes the most significant portion of final closure costs. The primary RWL closure components include placement and testing of the recompacted soil barrier (RSB), placement of the vegetative layer and establishing a vegetative cover, installing stormwater controls, and implementing erosion control measures. The final cover system has already been installed over portions of the existing RWL. The remaining portions of the existing and the proposed expansion Gavin Plant RWL will continue to be closed progressively over time as areas are filled to final waste grades.

At any point in time, the majority of the surface of the waste will have received either permanent cover or a temporary cover of six inches of clay soil that would meet the material characteristics of RSB. Therefore, if the landfill were to have to close prematurely, the remaining work would include compaction of the temporary cover to meet RSB criteria, installation of the final 18 inches of RSB or the full 24 inches of RSB, placement of the 12-inch thick vegetative layer and establishing a vegetative cover, installing stormwater controls, and implementing erosion control measures. As such, under normal conditions, the closure plan would involve a minimal amount of final cover system construction to satisfy final closure.

However, as described in the regulations, the closure cost estimate is to be based on the point in the operation life when the extent and manner of the operation would make the closure costs the most expensive. For this worst-case scenario, the phase drawings 6A through 6I were reviewed to identify the anticipated largest closure area. From this, the largest closure area will coincide with Stage 7 of operation. At Stage 7, there will be up to an estimated area of 170 acres needing closure. As summarized in Table 1, the final closure costs for the Gavin Plant RWL are estimated to be \$13,720,000. Supporting cost estimate calculations are included in Appendix B.

Post-closure care activities will begin following closure certification and will continue for 15 years. Post-closure care components will consist primarily of monitoring (groundwater, surface water and leachate) and maintenance (cover system, leachate and surface water control systems, monitoring wells and access controls). As summarized in Table 2, the total post-closure care costs for the Gavin Plant RWL are estimated to be \$6,115,000. Supporting cost estimate calculations are included in Appendix B.

## **9. CLAY RESOURCES**

The primary source of clay for the Gavin Plant RWL closure will originate from on-site borrow areas, which may include re-using the material excavated for subgrade construction, and near-site borrow areas on property owned by AEP. If on-site clay resources do not yield sufficient materials, similar soil conditions exist on other nearby company-owned property. From these sources, it is anticipated that adequate resources will be available to satisfy the needs of the RWL through final closure and the post-closure care period.

The total combined surface area of the Gavin Plant RWL final cover grading plan is approximately 404 acres. Of this, approximately 78 acres of exterior slopes have already been closed (2011), leaving approximately 326 acres that, once filled to final waste grades, will be closed incrementally from now until Stage 7 is reached. This equates to an estimated 630,000 cubic yards of RSB material and 315,000 cubic yards of vegetative cover soil would be required to construct a final cover system of the residual waste landfill over Stage 7.<sup>1</sup>

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<sup>1</sup> The volume of RSB is calculated as 50% of 170 acres requiring 2 feet of cover plus 50% requiring 1.5 feet of cover because temporary cover equivalent to 0.5 feet of acceptable RSB will be in place for the other ½ of the area that has not received final cover.

## **10. QUALITY ASSURANCE/QUALITY CONTROL PLAN**

The *Quality Assurance and Quality Control Plan* is included in Volume 5. Section 5 of the *Quality Assurance/Quality Control Plan* addresses the material qualification, test pad construction, and material placement specifications to ensure that the cover system is constructed in a manner consistent with the performance standards established in OAC 3745-30.

## **11. EROSION CONTROL**

Erosion and sediment control procedures are detailed on Drawings 4I, Series 6 Drawings, and Drawings 7C, 7D and 7E. Soil erosion and sediment control practices will be implemented pursuant to an approved Stormwater Pollution Prevention Plan (SWP3) and erosion and sediment controls will be maintained until construction is completed and/or the area is stabilized (i.e. vegetation is established).

At the time of closure at Stage 7, all of the permanent conveyances and erosion controls (ditches, downchutes, culverts, ponds, etc.) will have been installed except for the 170 acre area of Stage 7. Supporting stormwater/surface water calculations are included in Volume 4.

## **12. MANDATORY CLOSURE CONDITIONS/NOTIFICATIONS**

Final Closure will be completed in a manner that minimizes the need for maintenance activities. Final Closure will be initiated when one of the following conditions have occurred:

1. Ohio Power Company declares that no more residual waste will be accepted at the facility;
2. The facility's solid waste license has expired and another license has not been applied for;
3. All approved limits of waste placement have been reached;
4. The facility's solid waste license has expired and another license has been applied for and denied as a final action;
5. The facility's solid waste license has been revoked as a final action; or
6. The facility's solid waste license has been suspended as a final action.

Ohio Power Company will provide written notice by certified mail to Ohio EPA, the Gallia County General Health District, and the Gallia-Jackson-Meigs-Vinton Joint Solid Waste District at least ninety (90) days in advance of commencing final closure if initiated by condition numbers 1, 2, or 3 above. Any changes to the information that identifies the facility's contact person will be provided to the Ohio EPA in writing by certified mail at least thirty (30) days prior to commencing final closure. Within seven (7) days of the date that the facility actually ceases to accept waste, written notice by certified mail will be provided to the Ohio EPA, the Gallia-Jackson-Meigs-Vinton Joint Solid Waste District, and the Gallia County General Health District, informing the agency of the actual date.

### **13. FINAL CLOSURE ACTIVITIES**

Final closure activities will begin within seven (7) days of the date that the facility has ceased to accept waste. Final closure activities include:

1. Constructing the final cover system;
2. Establishing vegetative cover;
3. Constructing and maintaining drainage and erosion/sediment controls on top of the cover;
4. Operating and maintaining treatment and monitoring systems;
5. Securing the facility; and
6. Closure certification and deed notation.

The primary closure activity is the placement of the cover system that will consist of a minimum two (2) foot thick low permeable RSB, and twelve (12) inches of soil to support a vegetative cover. The material used to construct the RSB will be qualified, placed and tested in accordance with the approved *Quality Assurance/Quality Control Plan* (Volume 5). The final grades of the completed cover system are shown on Drawing 4H. The benches the cover system will have minimum slopes of three (3) percent to minimize the potential for standing water and maximum slopes of thirty-three (33) percent to promote drainage off of the cover system.

The final cover system will be constructed in a progressive manner. As outer slopes reach final waste grades, the final cover system will be progressively constructed in stages and seeded. Final cover system construction will generally be planned for the summer/early fall months.

Slope drains and benches will be constructed on the cover system and maintained to efficiently collect and convey surface water run-off to storm water ponds. Temporary sediment and erosion control measures will be installed, as necessary, until a dense vegetative cover is established. Surface water control structures will be inspected routinely to monitor erosion or blockage of flow. All permanent benches, ditches and culverts outside of the cover system will have already been constructed.

The security of the RWL will be maintained during the closure period unless the facility is to be used for other purposes as deemed acceptable by the Ohio EPA. Access will be maintained to all active monitoring sites throughout the post-closure care period.

All final closure activities will be completed with one (1) year of the date that the facility ceased accepting waste unless an alternative schedule has been approved by the Ohio EPA. Within ninety (90) days of completing final closure activities, the final closure certification report will be submitted to the Ohio EPA and will include:



1. Documentation on the construction of the final cover system;
2. A topographic map of the closed facility showing the information specified in OAC 3745-30-09(H)(1);
3. Documentation on the groundwater monitoring system;
4. A copy of the plat and deed notation filed with the County Recorder; and
5. Documentation that the facility is protected from unauthorized access.

## **14. POST-CLOSURE CARE ACTIVITIES**

Post-closure care activities will begin upon submittal of the final closure certification and will continue for a period of fifteen (15) years unless shortened or extended in accordance with OAC 3745-30-10(B). Post-closure care activities will include:

1. Continued operation and maintenance of the leachate management system, the stormwater/surface water management system and the groundwater monitoring program;
2. Maintenance of the final cover system;
3. Monitoring for leachate outbreaks and implementing remedial actions as necessary;
4. Fulfilling all inspection, monitoring, and reporting requirements; and
5. Submitting a post-closure care certification.

Inspections of the closed RWL facility will be conducted quarterly throughout the post-closure care period. A written summary of the inspection will be submitted to the Ohio EPA within fifteen (15) days of conducting the inspection. The inspection report will document the nature and extent of any problem areas identified, as well as provide an estimated starting and completion date for required corrective measures to be taken.

The leachate and stormwater/surface water management systems, including piping, ditches, berms, and culverts, will be inspected for erosion, ponding, blockage of flow, sediment accumulation, and other evidence of improper performance. Discharge structures associated with sedimentation basins will also be inspected.

Groundwater monitoring well and pipe locks, casing protectors and surface seals will be visually inspected during each sampling event and any unusual operational problems will be described in the groundwater reports submitted to the Ohio EPA.

The final cover system will be inspected for evidence of ponding, settlement and erosion, as well as damage caused by burrowing animals. Any damaged areas will be repaired by replacing the materials and restoring the site to final grade. If a condition reoccurs or persists, an investigation will be conducted to determine if a more permanent solution is warranted. Any permanent corrective measures that involve revisions to the facility's authorizing documents will be submitted to the Ohio EPA for review.

The condition of the vegetative cover will be evaluated (i.e. thickness, bare spots, invasive woody species) during each inspection. Corrective actions such as reseeded, fertilizing and selective herbicide applications will be implemented as necessary. Maintenance mowing will be conducted as necessary to discourage woody plant growth and to maintain the appearance and health of the vegetation.

In addition to the quarterly inspection reports, the facility will continue to monitor and report stormwater/surface water discharges during the post-closure care period in accordance with the facility's NPDES permit. It is anticipated that groundwater monitoring and reporting will continue on a semiannual basis. An annual report will be submitted containing a summary of the quantity of leachate generated, characteristics of the leachate and treatment received. The annual report will also update post-closure cost estimates.

Upon completion of the post-closure care period, a written certification will be prepared and submitted to the Ohio EPA with supporting documentation that all post-closure care activities have been completed in accordance with OAC 3745-30-10(D). The certification will be signed and sealed by a professional engineer registered in Ohio.

**Table 1**  
**Closure Cost Summary**

Final Closure/Post-Closure Plan  
Permit-to-Install Application  
Gavin Plant Residual Waste Landfill Facility

<b>Closure Component</b>	<b>Cost</b>
Cap System Components	\$11,090,000
Permanent Surface Water Structures (Outside of Cap)	\$0
Site Access Control	\$0
Engineering	\$320,000
<b>Subtotal of Closure Cost</b>	<b>\$11,410,000</b>
Administration	10 % of subtotal: \$1,410,000
Certification of Closure	\$30,000
Contingency	10 % of subtotal: \$1,140,000
<b>TOTAL COST OF CLOSURE</b>	<b>\$13,720,000</b>

**Table 2**  
**Post-Closure Care Cost Summary**

Final Closure/Post-Closure Plan  
Permit-to-Install Application  
Gavin Plant Residual Waste Landfill Facility

<b>Post-Closure Component</b>	<b>Cost</b>
Ground Water Monitoring	\$35,000
Leachate Monitoring	\$2,000
Surface Water Monitoring	\$2,000
Operation and Maintenance of Leachate Collection/Treatment Systems	\$10,000
Operation, Maintenance and Abandonment of Ground Water Monitoring Wells	\$21,000
Utilities for Operation	\$7,000
Maintenance of Cover System	\$219,000
Operation and Maintenance of Surface Water Management System	\$14,000
Operation and Maintenance of Access Control Structures	\$15,000
<b>Subtotal of Annual Post-Closure Care Costs</b>	\$325,000
<b>Subtotal of 15 Years of Post-Closure Care Costs</b>	\$4,875,000
Administration 10 % of subtotal:	\$ 487,000
Final Certification Upon Completion of Post-Closure Care Period:	\$30,000
Remedial Costs 15 % of subtotal:	\$730,000
<b>TOTAL COST OF POST CLOSURE CARE</b>	<b>\$6,122,000<sup>2</sup></b>

<sup>2</sup> The values in this table were rounded to the nearest \$1,000. Consequently, there will be some small differences for costs and sums of costs that are fractions of \$1,000 that are not seen in the rounded values.

**APPENDIX A**

**DRAFT FINANCIAL ASSURANCE INSTRUMENT**



American Electric Power  
1 Riverside Plaza  
Columbus, OH 43215-2373  
AEP.com

March 29, 2011

Mr. Scott J. Nally  
Director  
Ohio Environmental Protection Agency  
50 West Town St. Suite 700  
Columbus, Ohio 43215

Dear Mr. Nally:

In compliance with Paragraphs (G) and (M) of Rule 3745-30-11 of the Ohio Administrative Code (OAC), the following information is enclosed to demonstrate that Ohio Power Company (dba American Electric Power), meets the appropriate financial tests for closure and post-closure care coverage:

1. A signed Financial Officer letter worded as specified in OAC 3745-27-17(F);
2. A copy of the independent certified public accountant's report covering the owner's latest completed fiscal year; and
3. A letter from the owner's independent certified public accountant stating that he has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited year-end financial statements for the most recent fiscal year with the amounts in such financial statements and in connection with that procedure, found them to be in agreement.

Very truly yours,

Kevin D. Mack  
Counsel for Ohio Power Company

Enclosures

cc: Thomas Webb/ Dana Sheets  
David P. Hoffman, Plant Manager, Gavin Plant



American Electric Power  
1 Riverside Plaza  
Columbus, OH 43215-2373  
AEP.com

March 28, 2011

Mr. Scott J. Nally  
Director  
Ohio Environmental Protection Agency  
50 West Town St. Suite 700  
Columbus, Ohio 43215

**RE: Financial Officer Letter, as specified in Chapter 3745-27  
of the Ohio Administrative Code**

Dear Mr. Nally:

I am the chief financial officer of Ohio Power Company (d/b/a American Electric Power), 1 Riverside Plaza, Columbus, Ohio 43215. This letter is in support of use by Ohio Power Company (hereafter referred to as "this company") of the financial test to demonstrate financial assurance, as specified in Chapter 3745-27 of the Administrative Code.

1. This company is the owner or operator of the following facilities for which financial assurance for final closure or post-closure care is demonstrated through the financial test specified in Chapter 3745-27 of the Administrative Code. The current final closure and/or post-closure cost estimates provided for by the test are shown for each facility:

James M. Gavin Plant Residual Waste Landfill, P.O. Box 271, State Route 7, Cheshire, Gallia County, Ohio 45620. Estimated current closure cost for this facility is \$6,758,086 and estimated current cost of post-closure care is \$2,749,658.

2. This company guarantees, through the corporate guarantee specified in Chapter 3745-27 of the Administrative Code, the final closure or post-closure care of the following facilities permitted by subsidiaries of this company: Cardinal Operating Company Cardinal Plant FAR 1 Residual Waste Landfill.

The current cost estimates for the final closure and post-closure care so guaranteed are shown for each facility: Cardinal Plant FAR 1 Residual Waste Landfill, 306 County Road 7E, Brilliant, Ohio 43913. Estimated current final closure cost is \$9,241,488 and estimated present cost of post-closure costs is \$4,922,654



3. This company is the owner or operator of the following facilities for which financial assurance for final closure or, if a disposal facility, post-closure care, is not demonstrated to the Ohio Environmental Protection Agency through the financial test or any other financial assurance mechanism specified in Chapter 3745-27 of the Administrative Code. None

The current final closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility: None.

This company is required to file a Form 10-K with the Securities and Exchange Commission (SEC) for the most recent fiscal year.

The fiscal year of this firm ends on December 31. The figures for the following items marked with an asterisk (\*) are derived from this company's independently audited, year-end financial statements for the fiscal year ended December 31, 2010.

#### ALTERNATIVE II

1. Sum of current final closure and post-closure cost estimates (total of all cost estimates shown in the three paragraphs above): \$23,671,886.
2. Current bond rating of most recent issuance of this firm and name of rating service: Standard & Poor's, BBB  
Moody's, Baal.
3. Date of issuance of bond: March 10, 2011
4. Date of maturity of bond: July 1, 2014
- 5.\* Tangible net worth (if any portion of the final closure and post-closure cost estimates is included in "Total Liabilities" on your firm's financial statements, you may add the amount of that portion to this line):  
\$3,168,424,000
- 6.\* Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.): Not Applicable.

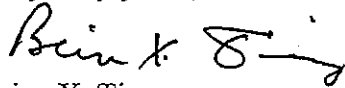
- |                                       | <u>Yes</u> | <u>No</u> |
|---------------------------------------|------------|-----------|
| 7. Is line 5 at least \$10 million    | <u>X</u>   |           |
| 8. Is line 5 at least 6 times line 1? | <u>X</u>   |           |

Scott Nally  
Page 3  
March 28, 2011

- 9.\* Are at least 90% of firm's assets  
located in the U.S.? X  
If not, complete line 10.
10. Is line 6 at least 6 times line 1? Not Applicable.

I hereby certify that the wording of this letter is substantially identical to the wording specified in paragraph (F) of Rule 3745-27-17 of the Administrative Code as such rule was constituted on the date shown above.

Very truly yours,



Brian X. Tierney  
Chief Financial Officer, Ohio Power Company



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## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM ON APPLYING AGREED-UPON PROCEDURES

To the Board of Directors and Shareholders of  
Ohio Power Company  
Columbus, Ohio

We have performed the procedures included in the Ohio Administrative Code Rule, 3745-27-15 (K)(3)(c) ("Regulations"), which were agreed to by the Ohio Environmental Protection Agency and Ohio Power Company (the "Company"), solely to assist the specified parties in evaluating the Company's compliance with the financial test option as of December 31, 2010, included in the accompanying letter dated March 28, 2011 from Mr. Brian X. Tierney, Chief Financial Officer of the Company. Management is responsible for the Company's compliance with those requirements. This agreed-upon procedures engagement was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants, as adopted by the Public Company Accounting Oversight Board (United States). The sufficiency of these procedures is solely the responsibility of the parties specified in this report. Consequently, we make no representation regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

The procedures that we performed and related findings are as follows:

1. We compared the amount included in item 5. under the caption Alternative II in the letter referred to above with the corresponding amount in the audited consolidated financial statements of Ohio Power Company Consolidated as of and for the year ended December 31, 2010, on which we have issued our report dated February 25, 2011, and noted that such amount was in agreement (Officials of the Company have informed us that based on their interpretation of the Regulations, they are not aware of any adjustments required of total equity to compute tangible net worth at December 31, 2010).
2. We compared the information included in items 6. and 9. under the caption Alternative II in the letter referred to above to a similar disclosure contained in the financial statements referred to in procedure 1. and noted such information was in agreement.

We were not engaged to, and did not, perform an examination, the objective of which would be the expression of an opinion on the accompanying letter dated March 28, 2011. Accordingly, we do not express such an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for the information and use of the Board of Directors and management of the Company and the Ohio Environmental Protection Agency, and is not intended to be and should not be used by anyone other than these specified parties.

*Deloitte + Touche LLP*

March 28, 2011

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of  
Ohio Power Company:

We have audited the accompanying consolidated balance sheets of Ohio Power Company Consolidated (the "Company") as of December 31, 2010 and 2009, and the related consolidated statements of income, changes in equity and comprehensive income (loss), and cash flows for each of the three years in the period ended December 31, 2010. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of Ohio Power Company Consolidated as of December 31, 2010 and 2009, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2010, in conformity with accounting principles generally accepted in the United States of America.

/s/ Deloitte & Touche LLP

Columbus, Ohio  
February 25, 2011

**APPENDIX B**

**SUPPORTING CLOSURE AND POST-CLOSURE CARE COST  
CALCULATIONS**

**APPENDIX B**

**CLOSURE COST SUMMARY**

Activity		Cost
I	Ground Water Monitoring Wells	\$ NA
II	Slope and Fill (for premature closure)	\$ NA
III	Cap System Components	\$11,090,000
IV	Permanent Surface Water Structures (Outside of Cap)	0
V	Explosive Gas Extraction/Control System	\$ NA
VI	Explosive Gas Monitoring System	\$ NA
VII	Site Access Control	0
VIII	Engineering	\$320,000
IX	Other Costs	\$ NA
	<b>Subtotal</b>	<b>\$11,410,000</b>
	Administration 10%	\$1,141,000
	Certification of Closure	\$30,000
	Contingency 10%	\$1,141,000
	<b>TOTAL COST OF CLOSURE</b>	<b>\$13,722,000</b>

**POST-CLOSURE CARE COST SUMMARY**

Activity		Cost
I	Ground Water Monitoring	\$525,000
II	Explosive Gas Migration Monitoring	\$ NA
III	Leachate Monitoring	\$33,000
IV	Surface Water Monitoring	\$33,000
V	Operation and Maintenance of Leachate Collection/Treatment Systems	\$150,000
VI	Operation and Maintenance of Ground Water Monitoring Wells	\$313,000
VII	Operation and Maintenance of Explosive Gas Extraction and/ or Control System	\$ NA
VIII	Operation and Maintenance of Explosive Gas Monitoring System	\$ NA
IX	Utilities for Operation	\$98,000
X	Maintenance of Cover System	\$3,285,000
XI	Operation and Maintenance of Surface Water Management System	\$210,000
XII	Operation and Maintenance of Access Control Structures	\$225,000
	<b>Subtotal</b>	<b>\$4,872,000</b>
	Administration 10 % of subtotal:	\$487,000
	Final Certification Upon Completion of Post-Closure Care Period	\$25,000
	Remedial Costs 15 % of subtotal:	\$731,000
	<b>TOTAL COST OF POST CLOSURE CARE</b>	<b>\$6,115,000</b>

NOTE: Values rounded to nearest \$1,000. Consequently, there can be some rounding differences in additions of rounded numbers.

**CLOSURE COST ESTIMATE SUMMARY WORKSHEETS**

**Premature Closure Scenario: A condition was selected where the surface area of waste without final cover was approximately a maximum was selected. This corresponds to Construction/Operation Stage 7 of the PTI drawings. At this point, there would be approximately 170 acres that has no final cover (there would be some temporary cover and remaining active disposal area).**

<b>III</b>	<b>Cap System Components</b>			
	Item Description	Quantity	Unit Cost	Item Cost
	Recompacted Soil Barrier (RSB)			\$7,700,000
	Vegetative Layer			\$3,210,000
	Surface Water Control System (on the cap)			\$60,000
	Perimeter Access Road			\$0
	Mobilization/Demobilization for Earthwork (LS)			\$100,000
	Mobilization/Demobilization for Geosynthetics (LS)			\$6,000
	Temporary Erosion Control: Silt Fences (LF)	\$13,000	\$1	\$13,000
<b>Subtotal</b>				\$11,090,000

<b>IV</b>	<b>Permanent Surface Water Structures (outside limits of the cap)</b>	
	Item Description	Item Cost
	Surface Water Conveyance Structures	\$0
	Mobilization/Demobilization	\$0
<b>Subtotal</b>		\$0

<b>VII</b>	<b>Site Access Control</b>			
	Item Description	Quantity	Unit Cost	Item Cost
	Fencing (LF) (entire facility boundary of Gavin Plant RWL)	0	\$24.50	\$0
	Gate (EA)	0	\$1,350	\$0
	Sign (EA) (every 500 ft)	0	\$100	\$0
<b>Subtotal</b>				\$0

<b>VIII</b>	<b>Engineering</b>			
	Item Description	Quantity	Unit Cost	Item Cost
	Revisions to Closure Plan Report (LS)	1	\$18,000	\$20,000
	Certified engineering designs and calculations for construction (LS)	1	\$36,000	\$40,000
	Surveying (AC)	170	\$1,500	\$260,000
	Benchmark Installation/Survey (EA)	0	\$1,000	\$0
<b>Subtotal</b>				\$320,000

**Section III: Cap System Components**  
**Detail Worksheets**

**Recompacted Soil Barrier (RSB)**

	Item	Quantity	Unit Cost	Item Cost
	Material (CY) -Note 1	480,000	\$15.00	\$7,200,000
	Excavation (CY)			
	Transportation (CY)			
	Placement (CY)			
	Testing and Qualification (Field)		5%	\$360,000
	Testing and Qualification (Lab)		1%	\$70,000
	Certification (LS)		1%	\$70,000
<b>Subtotal</b>				\$7,700,000

**Note 1-** Assumes 50% of remaining area has 6 inches of acceptable clay temporary cover.

**Vegetative Layer**

	Item	Quantity	Unit Cost	Item Cost
	Material (CY)	270,000	\$10.00	\$2,700,000
	Excavation (CY)			
	Transportation (CY)			
	Placement (CY)			
	Seeding, Fertilizer, Mulching (AC)	170.0	\$3,000	\$510,000
<b>Subtotal</b>				\$3,210,000

**Surface Water Control Structures (on the cap)**

	Item	Quantity	Type	Unit Cost	Item Cost
	Erosion Fabrics (SY)	630,000	Type II	\$1.47	\$0
	Erosion Fabrics (SY)	0	Type III	\$4.02	\$0
	Trapezoidal "Smart-Ditch" Let-Down Channels	900	HDPE	\$72	\$60,000
	48" $\phi$ Water Conveyence Strutures	0	HDPE	\$90	\$0
<b>Subtotal</b>					\$60,000

**Perimeter Access Road**

	Item	Quantity	Type	Unit Cost	Item Cost
	AC, Base, and Subbase (LF)	0	-	\$98.83	\$0



**Section IV: Permanent Surface Water Control System**

**Detail Worksheet**

**Permanent Surface Water Conveyance Structures (outside Limits of Waste Placement)**

	<b>Item</b>	<b>Quantity</b>	<b>Type</b>	<b>Unit Cost</b>	<b>Item Cost</b>
	Excavation and Stockpiling Earth Material (CY)	0	-	\$4.50	\$0
	Excavation and Stockpiling Rock Material (CY)	0	-	\$7.00	\$0
	Material (CY)	0	-	\$15.00	\$0
	Excavation (CY)				
	Transportation (CY)				
	Placement (CY)				
	42" Water Conveyance Structures (LF)	0	-	\$68.00	\$0
	36" Water Conveyance Structures (LF)	0	-	\$72.00	\$0
	24" Water Conveyance Structures (LF)	0	-	\$23.00	\$0
	18" Water Conveyance Structures (LF)	0	-	\$17.65	\$0
	Rip Rap (CY)	0	-	\$55.00	\$0
	Erosion Fanrics (SY) (Nonwoven Geotextile)	0		\$7.00	\$0
	Downchute Structures (4'x4'x5')	0	-	\$3,000	\$0
				<b>Subtotal</b>	\$0

**POST CLOSURE CARE COST ESTIMATE SUMMARY WORKSHEETS**

<b>I</b>	<b>Ground Water Monitoring</b>	
	Item Description	Annual Cost
	Trace Metals (see site-specific alternate parameter list)	\$0
	Volatile and Semivolatile Organic Compounds	\$0
	General Ground Water Quality Parameters (see site-specific alternate parameter list)	\$0
	Alternate Parameter List; site-specific semi-annual parameter list (\$92 x 55 mon points x 2 x 1.2 (for blanks/dups))	\$12,100
	Alternate Parameter List; site-specific annual parameter list (\$171 x 55 mon points x 1 x 1.2 (for blanks/dups))	\$11,300
	Assessment Monitoring Parameters	\$0
	Background Sampling (For new wells only)	\$0
	Collection and Transportation of Samples ((\$70 x 55 samples x 2) + (\$70 x 55 samples x 1))	\$11,600
	<b>Annual Subtotal</b>	\$35,000
	<b>Subtotal (15 years)</b>	\$525,000

<b>III</b>	<b>Leachate Monitoring</b>	
	Item Description	Annual Cost
	Annual Grab Sample 3745-27-19(M)(5) (\$350 x 5)	\$1,800
	Collection and Transportation of Samples (\$70 x 5)	\$400
	<b>Annual Subtotal</b>	\$2,200
	<b>Subtotal (15 years)</b>	\$33,000

<b>IV</b>	<b>Surface Water Monitoring</b>	
	Item Description	Annual Cost
	Sampling per NPDES Permit, Closure Plan, or Other Authorizing Document (\$350 x 6)	\$1,800
	Collection and Transportation of Samples (\$70 x 6)	\$400
	<b>Annual Subtotal</b>	\$2,200
	<b>Subtotal (15 years)</b>	\$33,000

<b>V</b>	<b>Operation and Maintenance of Leachate Collection and Treatment System</b>			
	Item Description	Annual Quantity	Unit Cost	Annual Cost
	Inspection & Flushing of Collection and Conveyance Pipes (LS)	1	\$5,000	\$5,000
	Inspection & Cleaning of Sumps/Manholes (LS)	1	\$2,000	\$2,000
	Repair/Replacement of Sump Pumps, Piping & Instrumentation (LS)	1	\$3,000	\$3,000
	<b>Annual Subtotal</b>			\$10,000
	<b>Subtotal (15 years)</b>			\$150,000

<b>IX</b>	<b>Utilities for Operation</b>			
	Item Description and Supplier	Annual Quantity	Unit Cost	Annual Cost
	Electricity; supplier - AEP (kWh)	50000	\$0.13	\$6,500
	<b>Annual Subtotal</b>			\$6,500
	<b>Subtotal (15 years)</b>			\$97,500

**POST CLOSURE CARE COST ESTIMATE SUMMARY WORKSHEETS**

<b>VI</b>	<b>Operation and Maintenance of Groundwater Monitoring Wells</b>			
	Item Description	Quantity	Unit Cost	Annual Cost
	Routine Inspection and Maintenance (EVENT)	2	\$2,000	\$4,000
	Repair (LS – AVE/YR)	1	\$4,000	\$4,000
<b>Annual Subtotal</b>				\$8,000
<b>Subtotal(15 years)</b>				\$120,000
	Replacement (Installation, Development, Background Monitoring) (EA)	5	\$18,000	\$90,000
	Abandonment at end of post-closure care period (EA)	43	\$2,400	\$103,200
<b>Subtotal</b>				\$313,200

<b>X</b>	<b>Maintenance of Cover System</b>			
	Item Description	Quantity	Unit Cost	Annual Cost
	Mowing and removal of trees (AC)	831.6 (415.8 AC x 2/yr)	\$40	\$33,000
	Revegetation (fertilizing, mulching, and seeding) (AC)	8.32 (2% of 415.8 AC/yr)	\$3,000	\$25,000
	Cap Repair (leachate outbreak repair, erosion rill repair, differential settlement repair) (CY)	13,416 (1 ft over 2% of 415.8AC/yr)	\$12	\$161,000
<b>Annual Subtotal</b>				\$219,000
<b>Subtotal(15 years)</b>				\$3,285,000

<b>XI</b>	<b>Operation and Maintenance of Surface Water Management System</b>			
	Item Description	Quantity	Unit Cost	Annual Cost
	Inspection & Routine Maintenance (LS)	4	\$1,000	\$4,000
	Conveyance Ditch/Piping Cleaning & Repair (LF)	3000	\$0.25	\$1,000
	Sed. Pond Cleaning and Outlet Cleaning & Repair (LS)	6	\$1,500	\$9,000
<b>Annual Subtotal</b>				\$14,000
<b>Subtotal (15 years)</b>				\$210,000

<b>XII</b>	<b>Operation and Maintenance of Access Control Structures</b>			
	Item Description	Quantity	Unit Cost	Annual Cost
	Inspection & Routine Maintenance (LS)	4	\$1,000	\$4,000
	Fence, Gate and Sign Repair (LS)	1	\$6,000	\$6,000
	Maintenance of Roadways	1	\$5,000	\$5,000
<b>Annual Subtotal</b>				\$15,000
<b>Subtotal (15 years)</b>				\$225,000