

# POST CLOSURE PLAN

**CFR 257.104(d)**

CCR Landfill

Flint Creek Plant  
Gentry, Arkansas

September, 2016

Prepared for: Southwestern Electric Power Company

Prepared by: American Electric Power Service Corporation

1 Riverside Plaza

Columbus, OH 43215



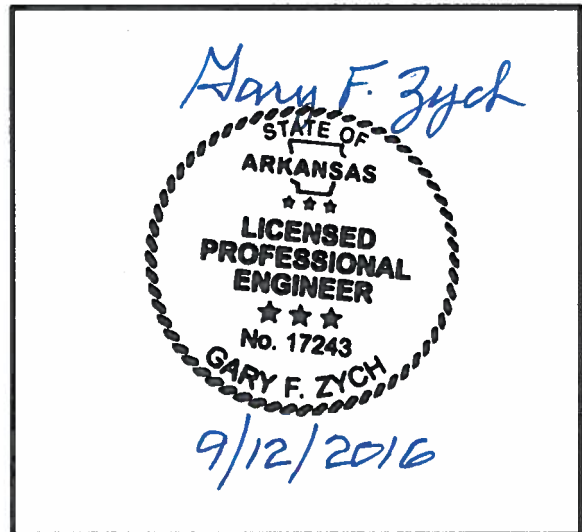
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POST CLOSURE PLAN  
CFR 257.104(d)  
FLINT CREEK PLANT  
CCR LANDFILL

PREPARED BY Gary F. Zych DATE 9/7/2016  
Gary F. Zych, P.E.

REVIEWED BY Satyananda Chakrabarti DATE 9/10/16  
Satyananda Chakrabarti, P.E.

APPROVED BY Gary F. Zych DATE 9/12/2016  
Gary F. Zych, P.E.  
Manager – AEP Geotechnical Engineering



I certify to the best of my knowledge, information, and belief that the information contained in this post closure plan meets the requirements of 40 CFR § 257.104

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## **1.0 OBJECTIVE**

This report was prepared by AEP- Geotechnical Engineering Services (GES) section to fulfill requirements of CFR 257.104(d) for Post Closure Plans of CCR units.

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

The Flint Creek Power Plant is located near the City of Gentry, Benton County, Arkansas. It is owned and operated by Southwestern Electric Power Company (SWEPCO). The facility operates one landfill for storing CCRs.

The landfill is permitted by the Arkansas Department of Environmental Quality, Class 3N Landfill permit 0273-S3N-R2.

## **3.0 DESCRIPTION OF POST CLOSURE PLAN 257.104(d)(1)**

***[A description of the monitoring and maintenance activities required in paragraph (b) of this section for the CCR unit, and the frequency at which these activities will be performed.]***

The Flint Creek landfill will be closed at either the life of plant or the life capacity of the facility. The post closure care plan is further discussed in the ADEQ approved Plan in Attachment A, with the exception that the post closure care period will be 30 years.

### **3.1 SECTION 257.104(b)(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.]***

Inspections are performed for the items noted below. The inspection frequencies are scheduled to properly detect any issues so that repairs can be performed before significant harm occurs.

- **Embankment**: The entire waste embankment, including top surface and side-slopes, will be inspected for slides, settlement, subsidence, displacement, and cover condition (see below).
- **Soil Dike**: The soil dike will be inspected for slides, displacement, and erosion.
- **Cover**: The final cover will be inspected for erosion and for the condition of the vegetated cover, i.e., gaps in vegetation or presence of undesirable trees or brush. The integrity of the cover drainage system will also be inspected.
- **Final Cover Surface**: The Final Cover surface will be inspected for any ponding of water or flat areas.
- **Surface Drainage System**: The surface drainage system, including channels, culverts, slope drains, etc., will be inspected for erosion, integrity of channel lining, ponding, and accumulated sediment.
- **Leachate Collection Piping**: The discharge pipes of the Leachate Collection System at the Leachate Collection Pond will be inspected for clogging or damage. Other exposed portions of the Leachate Collection System including cleanouts will be inspected for damage. Similarly, the

Leachate Collection Pond will be inspected for general damage to the pond and perimeter berms, and for accumulation of sediment in the pond.

Maintenance during the post-closure care period will be performed as discussed below, based upon the facility inspections described above.

- Security Control Devices: Any portions of the roadway barricades which might be damaged will be repaired or replaced as necessary.
- Erosion Damage Repair: Any areas exhibiting erosion will be repaired by replacing and compacting the material in-kind to design grade/specifications, and reseeding the area to the specifications. Applications of additional fertilizer, selective herbicides, rodent control measures, etc. will be implemented as necessary. In the selection of fertilizers and herbicides, ensure their use will not impact the groundwater negatively. Follow-up monitoring of the repaired area will be conducted to ascertain the integrity of the repair.
- Settlement, Subsidence, Displacement: Any areas at the closed site exhibiting evidence of settlement, subsidence, or displacement will be examined to determine the cause of the movement. If backfilling or placing additional fill material is needed to maintain the integrity of the closed structure, it will be performed in accordance with the site/closure specifications, including seeding. If the condition reoccurs or persists, or if the severity of the condition initially is judged to warrant it, a detailed investigation of the cause will be performed and remedial action will be performed. Similarly, any areas of the soil dike exhibiting sliding, displacement, or seepage will be investigated. Repairs will be made as necessary. Follow-up monitoring of the area will be performed to ascertain that the problem has been corrected.
- Closure Cap Surface: Any areas that show signs of ponding water or flat contours will be examined and rectified.
- Surface Water Drainage System: The channel linings are designed to withstand the design velocities. Maintenance of the surface water drainage system will consist of removing sediment and/or undesirable vegetation from the surface water runoff control system (channels and culverts) as required. Eroded areas will be repaired by back-filling and reseeding according to the specifications. Damage to culverts will be repaired; structure replacement will be performed if needed.
- Leachate Collection System: Maintenance of the leachate collection system, collection sump, and leachate pumps will consist of repairing and/or replacing in-kind any damaged or eroded portions of the system and pond, cleaning pipes, and removing leachate and sediment from the collection sump and the Leachate Collection Pond, as needed.

### **3.1 SECTION 257.104(b)(3)**

***[Maintaining the groundwater monitoring system and monitoring the groundwater in accordance with the requirements of §§257.90 through 257.98.]***

The groundwater monitoring system will be inspected for the general integrity of the wells, well casings and well protective casings. Any damaged portions of the monitoring wells and/or their protective casings will be replaced in-kind.

Monitoring the groundwater will be in accordance with the groundwater monitoring plan for this facility and in accordance with the requirements of §§257.90 through 257.98.

#### **4.0 POST-CLOSURE CONTACT 257.104 (d)(1)(ii)**

***[The name, address, telephone number and email address of the person or office to contact about the facility during the post-closure care period.]***

The name, address, and telephone number of the person to contact about the Facility during the post-closure period shall be provided upon notice of closure.

#### **5.0 POST-CLOSURE PLANNED USE 257.104 (d)(1)(iii)**

***[A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the conatainment system, or the function of the monitoring systems unless necessary to comply with the requirements in this subpart...]***

The post-closure use of the property will be undisturbed vacant land space. The only activities occurring on the closed CCR unit will be related to the Post-Closure care activities.

**ATTACHMENT A**

**Post Closure Care Plan from approved landfill permit**

# **CLOSURE AND POST- CLOSURE CARE PLAN**

FOR THE:  
**SOUTHWESTERN ELECTRIC POWER COMPANY  
FLINT CREEK POWER PLANT LANDFILL  
CLASS 3N LANDFILL  
PERMIT 0273-S3N-R1**

PREPARED FOR:  
**SOUTHWESTERN ELECTRIC POWER COMPANY  
428 TRAVIS STREET  
SHREVEPORT, LA 71101**

PREPARED BY:  
**HULL & ASSOCIATES, INC.  
3401 GLENDALE AVENUE  
SUITE 300  
TOLEDO, OHIO 43614**

**MARCH 2014  
(REV. NO. 2)**



engineers | geologists | scientists | planners

**Hull**  
& associates, inc.



### **3.0 POST-CLOSURE PLAN**

#### **3.1 Post-Closure Care Period (Reg.22.1302(c))**

In accordance with Reg.22.1302(c)(3)), the post-closure care period shall be two years following the date of written confirmation by the ADEQ that the Facility has been closed in accordance with the approved Closure Plan, unless the period is decreased or increased by the Director of the ADEQ (per Reg.22.1302(c)(4)). The period may be decreased if the Facility demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the Director of the ADEQ (per Reg.22.1302(c)(4)(i)). The period may be increased if the Director determines that the lengthened period is necessary to protect human health and the environment (per Reg.22.1302(c)(4)(ii)). During the post-closure care period, the final cover system shall be maintained and monitoring activities will be performed as described in the following sections.

#### **3.2 Post-Closure Monitoring and Maintenance (Reg.22.1302(b))**

Access to the site after closure shall be controlled through maintenance of existing fencing and signs, and all access gates shall be locked to discourage unauthorized entry. The integrity of the final cover system shall be maintained, and repaired as necessary to correct the effects of settlement, subsidence, and erosion, and prevent run-off and run-on from damaging the final cover. Vegetation shall be mowed at least annually to control the growth of unwanted vegetation that may interfere with the integrity of the final cover system. Cracked, eroded and uneven areas shall be filled and reseeded, and ditches shall be maintained (per Reg.22.1302(b)(1)).

The leachate collection system shall be maintained and operated in accordance with Reg.22.429 (per Reg.22.1302(b)(2)). The leachate collection system drains by gravity from the Landfill to the leachate collection pond, and there will be a forcemain from the leachate collection pond to the on-site treatment facility. Pursuant to Reg.22.1302(b)(2), the owner or operator of the Facility may stop managing leachate, upon approval by the Director of the ADEQ, if it is demonstrated that the leachate no longer poses a threat to human health and the environment.

The Facility shall continue to monitor the ground water in accordance with the requirements of Chapter 12 and maintain the groundwater monitoring system (per Reg.22.1302(b)(3)) during the post-closure period.

The surface water control systems shall be operated and maintained in accordance with Reg.22.419 and Reg.22.1302(b)(1) or until such time as permanent erosion control measures have been established at the site (per Reg.22.1302(b)(6)).

### **3.3 Contact Persons (Reg.22.1302(d)(2))**

The name, address, and telephone number of the person to contact about the Facility during the post-closure period shall be provided upon notice of closure.

### **3.4 Post-Closure Cost Estimate (Reg.22.1403(a))**

An estimate of the cost of performing post-closure activities has been prepared based on the estimated cost of hiring a third party to conduct the activities (see Appendix A). The cost estimate is based on the most expensive costs of post-closure care during the post-closure care period. The post-closure cost estimate shall be revised annually during the life of the Facility to account for inflation. If the maximum costs of post-closure care increase, the respective financial assurance mechanism shall be revised (if necessary) to reflect the increased amount.

### **3.5 Certification of Completion (Reg.22.1302(f))**

Following the completion of the post-closure care period for the Facility, the Director of the ADEQ shall be notified that a certification has been placed in the operating record. The certification, signed by an independent professional engineer registered in the State of Arkansas, shall verify that post-closure care has been completed in accordance this the post-closure plan.

### **3.6 Site Management and Use (Reg.22.1302(h))**

It is anticipated that upon completion of post-closure care, that this site will become open grassland. The actual long-term use of the land will be determined upon notice of closure. The Facility final cover system shall not be disturbed without prior approval from the Director of the ADEQ.

## **APPENDIX A**

### Estimated Closure and Post-Closure Costs