Weaver Consultants Group

June 17, 2021

MEMORANDUM

Re: CCR Conceptual Closure Plan – Version #3
Northern Indiana Public Service Co.
R.M. Schahfer Generating Station RWS-1 Landfill
IDEM SW Program ID 37-01
Wheatfield, Indiana

Northern Indiana Public Service Co. (NIPSCO) operates the coal-fired R. M. Schahfer Generating Station (RMSGS) located near Wheatfield, Indiana. Since beginning operations in 1976, NIPSCO has stored and disposed of plant generated Coal Combustion Residuals (CCR) in the on-site ash landfill. The ash landfill currently consists of seven (7) phases, five (5) of which (Phases I-V) have been closed with an additional phase completing closure in 2021. Phases VI and VII are the current fill areas and Phase VI is scheduled to be closed in 2021. This written Closure Plan (Plan) addresses the requirements of 40 CFR §257.102 *Criteria for conducting the closure or retrofit of CCR units* of the USEPA's Final CCR Rule dated April 17, 2015, for the RMSGS Landfill Phases, VI, VII, and VIII.

This Plan has been developed based upon information provided by NIPSCO and describes the restricted solid waste landfill, closure plan design, a schedule for closure, and steps required to amend the closure plan in the future, if necessary. This plan calls for the landfill to be closed leaving CCR in place and installing a final cover system. In 2017, RMSGS submitted a minor permit modification application to the Indiana Department of Environmental Management (IDEM) that included upgrades to the landfills permitted base liner and final cover systems to bring them into compliance with 40 CFR §257 and 261. The minor permit modification application was approved on May 23, 2018.

Currently, NIPSCO estimates it will operate the coal-fired RMSGS units at the facility no later than October 17, 2023. Regardless of when the landfill is closed, the following steps will be followed for closure of the unit.

1. Finalize detailed construction plans for closure.
2. Obtain written Professional Engineer (PE) certification that design of the final cover system meets the requirements of the Final CCR Rule.
3. No later than the date closure is initiated, prepare a notification of intent to close a CCR unit, including the PE certification from Step 2, and place notification in the facility operating record.
4. Commence closure no later than 30-days after known final receipt of CCR.

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5. Obtain professional engineer (P.E.) certification verifying closure has been completed in accordance with the closure plan and the requirements of 40 CFR §257.102.
6. Within 30-days of completion of closure of the CCR unit, prepare a notification of closure of the CCR unit, including the P.E. certification from step 5, and place notification in the facility operating record.
7. Following closure of the CCR unit, record a notation on the deed to the property or some other instrument normally examined during title search.
8. Within 30-days of recording a notation on the deed to the property, prepare a notification stating that the notation has been recorded and place the notification in the facility operating records, which will be stored on-site and digitally.

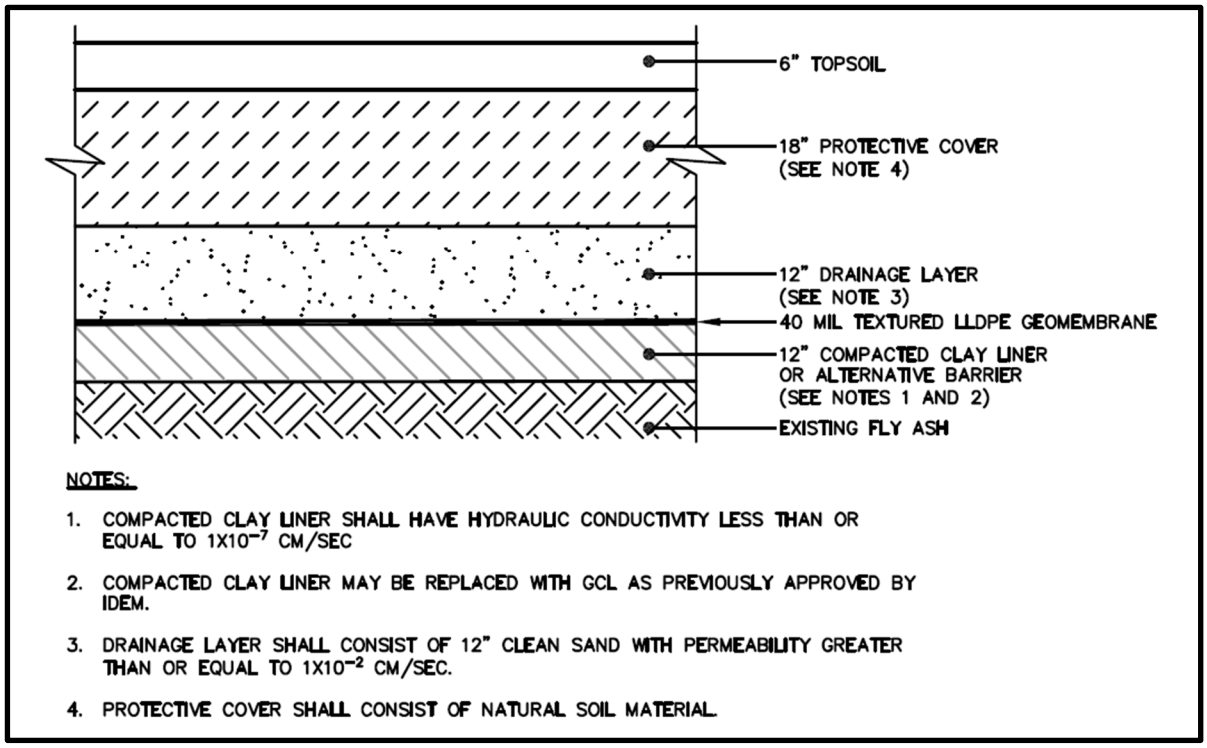
Final Cover System

The final cover system has been designed and constructed to meet the USEPA's Final CCR Rule requirements of §257.102(d)(3)(i)(A-D). The proposed final cover system will consist of five (5) layers designed to prevent infiltration of liquids into the waste and release of CCR, leachate or contaminated run-off to the ground or surface waters or to the atmosphere. The first layer (from bottom to top) will consist of a 12-inch compacted clay layer with a permeability less than or equal to $1x10^{-7}$ cm/sec [or a geosynthetic clay liner (GCL)]. This will be overlain by a 40-mil textured LLDPE geomembrane, a 12-inch granular drainage layer (permeability greater to or equal $1x10^{-2}$ cm/sec), 18-inch protective soil cover layer and a 6-inch vegetative cover (topsoil) layer. An equivalent alternative cover system satisfying the conditions of 257.102(d)(3)(ii) may also be chosen in the future It is anticipated that soils required for the final cover system will be imported from off-site borrow areas proximate to the CCR landfill.

The final cover system will be placed and graded to elevations necessary to promote positive drainage and prevent future impoundment of stormwater, sediment, or slurry on the final cover system. Grading of the in-place material may be necessary prior to placement of cover system soils to ensure positive drainage and manage surface water run-off. Surface water run-off and run-on will be managed to minimize the need for future maintenance of the cover system including the use of stormwater controls (i.e., ditches, swales, diversions, check dams, channel linings, etc.) to protect against erosion and sedimentation.

The final cover system design grades and slopes will be designed to provide appropriate safety factors against slope failure, sloughing or movement of the final cover system. Final cover grades will also be designed to accommodate settling and subsidence of the landfill to minimize disruption of the integrity and function of the final cover system and to minimize the need for future maintenance.

A typical section of the final cover including minimum layer thicknesses is presented below.



Final Cover Installation

The following general installation methods and procedures are expected to be used to construct the final cover system:

Subgrade Preparation

Prior to installation of the 12-inch compacted clay layer or GCL layer, any existing vegetation should be removed, and the surface smoothed to provide a suitable working base for cover system installation. Fill soil may be required to shape the subgrade and fill in low areas or repair erosion as necessary. Any soft areas should be under-cut and recompacted as necessary to provide a firm, unyielding foundation for placement and compaction of the compacted clay or GCL layer. The subgrade shall be maintained in a smooth, uniform, and drained condition prior to placement of the compacted clay or GCL layer.

The subgrade will be surveyed to establish elevations of the surface prior to placement of the compacted clay or GCL layer.

Compacted Clay or GCL Layer

The compacted clay layer or GCL layer will be installed in accordance with the facility's approved Construction Quality Assurance (CQA) Plan. Soil material for the compacted clay layer will be obtained

from an off-site borrow source and delivered to the site using haul trucks. The compacted clay layer will be installed in compacted lifts and compacted to the density and moisture content as required in the CQA Plan. Preconstruction sampling and testing of the clay proposed to be used in the closure will be performed and the constructed compacted clay layer will be tested and sampled in accordance with the CQA Plan. If a GCL is used in lieu of the compacted clay layer it will be installed and tested in accordance with the CQA Plan.

Upon completion of the compacted clay or GCL layer the layer will be surveyed to establish elevations and verify the minimum thickness is provided.

40-mil Textured LLDPE Geomembrane

The 40-mil textured LLDPE geomembrane liner will be placed over the completed compacted clay layer or GCL. The geomembrane will be installed in accordance with the facility's approved Construction Quality Assurance (CQA) Plan.

Drainage Layer

Soil materials for the drainage layer will be obtained from an on-site or off-site source, delivered using haul trucks and will be spread with a dozer. The drainage layer does not require compaction. Prequalification sampling and testing of the proposed drainage layer material will be performed in accordance with the CQA Plan. Care will be taken when installing the drainage layer, so the underlying liner materials are not damaged.

Upon completion of the drainage layer the layer will be surveyed to establish elevations and verify the minimum thickness is provided.

Protective Cover Layer

Soil materials for the protective cover layer will be obtained from an on-site or off-site source, delivered using haul trucks and will be spread with a dozer. The protective cover layer does not require compaction. Prequalification sampling and testing of the proposed protective cover layer material will be performed in accordance with the CQA Plan. Care will be taken when installing the protective cover layer, so the underlying drainage layer is not damaged.

Upon completion of the protective cover layer the layer will be surveyed to establish elevations and verify the minimum thickness is provided.

Topsoil Layer

Soil materials for the topsoil layer will be obtained from an on-site or off-site source, delivered using haul trucks, and spread with a dozer. The topsoil layer does not require. The topsoil layer top surface will

remain rough to promote the establishment of native vegetation. Stabilization and seeding of the topsoil layer must begin immediately after placement (weather permitting).

Upon completion, the topsoil layer will be surveyed to establish elevations and verify the minimum thickness is provided.

Temporary or permanent erosion control materials (mulches, fabrics, rock check dams, soil tackifier) may be used to minimize erosion and aid in establishment of vegetation. Hard armor such as cobbles or rip rap may be used in areas where establishment of vegetation may be difficult or impossible.

The maximum volume of material ever stored in Phases VI and VII of the landfill, which are currently constructed, will occur at closure and is estimated to be approximately 1,100,000 CY and 1,200,000 CY respectively. The area of the Phases VI and VII landfill that is constructed and has not received final cover is approximately 30 acres. This area is based on data provided by NIPSCO of historic landfill boundaries and the latest permit drawings.

Closure Schedule

An estimated schedule for completing the activities necessary to satisfy the closure-in-place criteria of the CCR Rule is provided below. The schedule lists the sequential steps that need to be taken to close each of the remaining constructed Phases (Phase VI and VII) of the landfill by installing a final cover system on each phase.

Item#	Task Item	Completion Timeframe (months)													
		-8	-7	-6	-5	-4	-3	-2	-1	1	2	3	4	5	6
1	Prepare Construction Plans														
2	PE Design Certification														
3	Notice of Intent to Close														
4	Agency Closure Approval														
5	Cease placing waste														
6	Commence Closure														
7	Final Cover Installation														
8	PE Closure Certification														
9	Notice of Landfill Closure														
10	Record Deed Notation														
11	Notice of Deed Recordation														

NIPSCO will need to initiate some activities prior to commencing closure. As indicated on the schedule, NIPSCO will need to begin to act on Steps 1-4 as early as 8 months prior to the anticipated final receipt of material at the landfill.

Per §257.102(e)(3), closure of either Phase VI or VII of the landfill has commenced when NIPSCO has ceased placing material in the landfill phase and completes any of the following actions or activities: (i) Taken any steps necessary to implement the written closure plan; (ii) Submitted a completed application for any required state or agency permit or permit modification; or (iii) Taken any steps necessary to comply with state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the closure of the CCR landfill phase.

NIPSCO estimates that it will operate the coal-fired units until sometime in 2023. Closure activities for the last of the CCR landfill phases is estimated to be completed upon final receipt of waste.

Closure Plan Amendments

NIPSCO will amend the Plan in the future as provided for in 40 CFR §257.102(b)(3). A record of amendments to the plan will be tracked below. The latest version of the closure plan will be noted on the front cover of the plan.

Version	Date	Description of Changes Made
1	12 October 2016	Initial Issue
2	7 February 2019	Station Closure Date and Landfill Status Updates
3	17 June 2021	Final Cover Components Update and Landfill Statue Updates

Professional Engineer Certification

I certify that this written closure plan for NIPSCO's Landfill at the R.M. Schahfer Generating Station meets the USEPA's Final CCR Rule requirements of §257.102(b).

Signed: _____

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Title: Project Director

Company: Weaver Consultants Group North Central, LLC

Professional Engineer's Seal: