



## PART A DEMONSTRATION ANNUAL PROGRESS REPORT #01-23

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**Project No.** 31406779.005

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**RE: NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC  
R. M. SCHAHFER GENERATING STATION, WASTE DISPOSAL AREA  
40 CFR §257.103(F)(2)(X) PART A DEMONSTRATION ANNUAL PROGRESS REPORT #01-23**

On October 30, 2020, in accordance with the requirements of 40 Code of Federal Regulations (CFR) §257.103(f)(2), Northern Indiana Public Service Company LLC (NIPSCO) submitted to the United States Environmental Protection Agency (USEPA) the “*NIPSCO LLC RMSGS Demonstration of Site-specific Alternative Deadline to Initiate Closure of CCR Surface Impoundment Due to Permanent Cessation of Coal-Fired Boilers by a Date Certain*” (Golder, 2020(a), hereinafter Demonstration) for the Coal Combustion Residuals (CCR) Rule regulated surface impoundment referred to as the Waste Disposal Area (WDA). The WDA impoundment is part of the NIPSCO R.M. Schahfer Generating Station (RMSGs), 2723 E 1500 N Road, Wheatfield, Jasper County, Indiana (Site). Following consultation with representatives of USEPA, on November 30, 2020, NIPSCO submitted to USEPA the “*NIPSCO LLC RMSGS Demonstration of Site-specific Alternative Deadline to Initiate Closure of CCR Surface Impoundment Due to Permanent Cessation of Coal-Fired Boilers by a Date Certain – Addendum 1*” (Golder, 2020(b), hereinafter Demonstration Addendum 1). Both the 2020 Demonstration and Demonstration Addendum 1 anticipated permanent cessation of coal-fired generation in May 2023. However, due to issues related to RMSGS’ contribution to and critical role in electric generation and regional grid reliability, NIPSCO has found it necessary to continue coal-fired generation until December 2025, and consequent use of the WDA until early 2026. Accordingly, because of these electric demand and reliability driven operational changes, on August 18, 2022, NIPSCO submitted to USEPA the “*NIPSCO LLC RMSGS Demonstration of Site-specific Alternative Deadline to Initiate Closure of CCR Surface Impoundment Due to Permanent Cessation of Coal-Fired Boilers by a Date Certain – Addendum 2*” (Golder, 2022, hereinafter Demonstration Addendum 2). The 2020 Demonstration, 2020 Addendum 1, and 2022 Addendum 2, all prepared by Golder Associates Inc., thereafter Golder Associates USA, Inc., now WSP USA Inc. (WSP), on behalf of NIPSCO, are currently under review by the USEPA.

Although the WDA is the primary focus of the Demonstration, Addendum 1, and Addendum 2, 40 CFR §257.103(f)(2) specifies that the facility (emphasis added) complies with all other requirements of the CCR Rule, including the requirement to conduct any necessary corrective action. The WDA is not subject to corrective action provisions nor are the Landfill Phases V, VI, and VII; however, three other RMSGS surface impoundments known as the Material Storage Runoff Basin (MSRB), Metal Cleaning Waste Basin (MCWB), and Drying Area (DA),

collectively referred to as the Multi-Cell Unit (MCU) are in the corrective measures process. For the purposes of completeness, the WDA, MCU, and Landfill are addressed herein.

The text of the 2020 Demonstration, 2020 Addendum 1, 2022 Addendum 2, and 40 CFR §257.103(f)(2)(x) each reference completion of an annual report documenting the continued lack of alternative disposal capacity and the progress toward the closure of the WDA surface impoundment. This Demonstration Annual Progress Report #01-23 (hereinafter 2023 Progress Report) fulfills the 40 CFR §257.103(f)(2)(x) regulatory requirement and the reporting commitments as outlined in the Demonstration and addenda. In addition to providing the aforementioned information, the 2023 Progress Report serves as an update on select additional RMSGS CCR Rule compliance and demonstration actions completed by NIPSCO after the previously submitted Demonstration, addenda, and progress reports.

#### Progress Toward Closure/Permanent Cessation of Coal-Fired Boiler Operations

As of October 1, 2021, NIPSCO permanently shut down operations of Units 14 and 15, representing two of the four coal-fired boilers at RMSGS. Remaining Units 17 and 18 continue to operate, with management of CCR and non-CCR waste streams produced from these Units being provided by the WDA. Cessation of operations of the two-remaining coal-fired boilers is consistent with overall Site retirement plans and on schedule with NIPSCO's revised plan for permanent cessation of all coal-fired generation activities by the end of Q4 2025. The basis for and detailed schedule of permanent cessation of coal-fired generation, which represents a grid reliability-driven shift from the formerly planned shutdown discussed in the November 2020 Demonstration, is outlined in the August 2022 Demonstration Addendum 2 (Section 2.3 and Figure 3).

#### Ongoing Need for Operation of the WDA

As noted, NIPSCO continues progress toward permanent cessation of all coal-fired generation activities at RMSGS. Units 14 and 15 have been shut down, Unit 14 wash down has been performed, and Unit 15 has been scheduled. Intermittent boiler decommissioning and washdown event(s) associated with Unit 15 are expected to occur through 1Q26. Depending upon grid demand, Units 17 and 18 continue to operate, generating CCR and non-CCR waste streams as detailed in the Demonstration and addenda and summarized below. Following cessation of boiler operations, Units 17 and 18 will likewise be washed down as part of the facility decommissioning process, generating CCR waste streams to be managed in the WDA. Thus, the need remains for existing capacity and continued operation of the WDA to meet both ongoing coal-fired generation and current and future decommissioning demands.

Aside from ongoing operational and future decommissioning needs, continued availability of the WDA is also a pivotal component in the ongoing closure of three other inactive CCR Rule regulated surface impoundments referred to collectively as the Multi-Cell Unit (MCU). A Closure Application for the MCU received Indiana Department of Environmental Management (IDEM) approval regarding completeness on August 3, 2022, was the subject of a public meeting September 29, 2022 to accept comment on both the closure plan and the groundwater Assessment of Corrective Measures (ACM) prior to Selection of a Remedy (SOR), and received final IDEM approval with conditions March 17, 2023. A key facet of the IDEM-approved MCU closure by removal approach is the discharge of dewatering fluids to the WDA. As the sole remaining operational CCR Rule regulated impoundment on-Site, discharge to the WDA is the only viable alternative for the management of high-volume dewatering effluent from the MCU. Surface water drawdown of the MCU was initiated in spring 2023, subsurface dewatering with discharge to the WDA began August 7, 2023, and closure construction activities including ash removal began August 16, 2023. CCR removal is expected to be completed by May 15, 2024 and subsequently,

dewatering will be terminated around June 1, 2024. Completion of the 2023-24 closure activities will eliminate another waste stream now assigned for WDA management, and the scheduled 2025 shutdown of the remaining coal-fired boilers and conclusion of decommissioning activities will further reduce reliance on the WDA as a CCR and non-CCR waste management unit.

However, as designed and constructed, most of NIPSCO's wastewater and stormwater systems feature a network of common sumps which ultimately discharge to the WDA. Until such time as CCR Rule regulated and non-regulated waste streams are no longer being generated, separation of the various sumps and pipelines is impractical. Therefore, until boiler cessation and plant decommissioning actions are fully completed, continued operation of the WDA remains essential to the management of these waste streams.

#### Continued Lack of Alternative Capacity

At the time of preparation of this 2023 Progress Report, the measurable reduction in Site-wide generation of CCR and non-CCR waste streams resulting from the shutdown of Units 14 and 15 could not be definitively quantified. The inability to measure this reduction is due to the absence of flow metering capacity in individual feed and discharge lines. Most, if not all, of these lines will be taken out of service upon or shortly after cessation of generation of Units 17 and 18. As such, capital upgrades such as the addition of stream-specific flow metering capability are not being added at this time. However, in determination of alternative capacity and reliance for the operation of the WDA, the combined estimated average daily waste stream flow of 5.04 MGD reported in the initial Demonstration (i.e., October 2020) from Units 14 and 15 was removed from the combined total waste stream flow estimates considered in the 2021, 2022, and 2023 Progress Reports. Note that such an approach assumes an instantaneous and maximum waste stream flow reduction (and does not account for the intermittent ongoing compulsory boiler washdown flow from Units' decommissioning) and is, as a result, considered a conservative demand-based approach to this update. Therefore, due to ongoing Site operations, closure (e.g., MCU) and maintenance activities (e.g., boiler room sump dewatering for both shut down and active Units, stormwater collection and management), individual volumes of the several CCR and non-CCR effluent streams being discharged to the WDA are estimated to be between 0.34 MGD and 1.42 MGD, with a combined estimated daily flow of 4.1 MGD.

Consistent with the requirements of 40 CFR §257.103(f)(2)(x) and employing processes consistent with those used in the evaluation of alternate disposal capacity for the Demonstration, WSP, on behalf of NIPSCO, performed a re-evaluation of its previous assessments. The continued lack of alternative capacity is supported by the following conditions/conclusions:

- No other existing on-Site impoundment system can accept partial or total flows of CCR waste streams that are currently discharging into the WDA
- No existing transport conduit nor alternative disposal capacity is available for CCR and non-CCR waste streams in the existing on-Site wastewater treatment plant (WWTP)
- No existing off-loading or conveyance piping infrastructure to support on or off-Site alternative disposal of CCR or non-CCR waste streams is in place and, as a practical matter, commercial tanker truck capacity for individual waste streams of between 0.34 and 1.42 MGD, up to a combined estimated daily maximum volume of up to 4.1 MGD is not possible to dependably source considering equipment and driver availability, impairments due to seasonal weather conditions, etc.

- An employee and public health and safety risk associated with off-Site disposal would exist due to the additional truck traffic both on-Site and on the public roads as well as an increased carbon footprint with added truck traffic
- An increased risk of release that could harm the environment would exist each time the wastewater is handled (i.e., pumped for off-Site transport, unloaded at off-Site receiving facilities)

NIPSCO previously evaluated the feasibility of constructing new alternative CCR and non-CCR waste management options on-Site, even though RMSGS will cease all coal-fired generation in about two additional years (i.e., no later than December 2025). As in 2020 and confirmed in 2022 (Demonstration Addendum 2), due to Site-specific factors (e.g., space limitations, shallow depth to groundwater and thus the inability to reasonably achieve the 40 CFR §257.60(a) five-foot separation from the upper limit of the uppermost aquifer), permitting and/or regulatory hurdles including permit application review timeframes, potential supply chain issues relative to equipment and construction materials availability, and building timeframes, construction of new alternative management facilities is infeasible.

Based on current operating conditions and an updated evaluation regarding alternative disposal capacity, WSP concludes that no viable alternative to continued use of the WDA currently exists.

#### Additional NIPSCO Demonstration-Related Work Completed Subsequent to October 2020

In April 2019, Golder, on behalf of NIPSCO, completed an Assessment of Corrective Measures (ACM) for the MCU in accordance with the requirements of 40 CFR §257.96. In November 2020, based upon informal feedback from USEPA officials regarding their interpretation of ACM content, Golder, on behalf of NIPSCO, prepared an addendum (hereinafter ACM Addendum #1) to the 2019 ACM. ACM Addendum #1 was certified by a qualified Indiana-licensed professional engineer on November 30, 2020. Following certification, ACM Addendum #1 was placed in the facility operating record and NIPSCO posted it to their publicly accessible CCR website. In July 2021, consistent with changes to the Multi-Cell Unit (MCU) closure design and resultant impacts on groundwater remedy alternatives, Golder, on behalf of NIPSCO, prepared a second addendum (hereinafter ACM Addendum #2) to the 2020 ACM in accordance with the requirements of 40 CFR §257.96. ACM Addendum #2 was certified by a qualified Indiana-licensed professional engineer on July 29, 2021. Following certification, ACM Addendum #2 was placed in the facility operating record and NIPSCO posted it to their publicly accessible CCR website. In October 2021, in accordance with the requirements of 40 CFR §257.103(f)(2)(x), Golder, on behalf of NIPSCO, prepared the Part A Demonstration Annual Progress Report #01-21, following which it was placed in the facility operating record and NIPSCO posted it to their publicly accessible CCR website. In June 2022, to focus on cobalt which was identified as the only CCR Rule Appendix IV constituent detected in a single shallow downgradient monitoring well at a statistically significant level (SSL) above the groundwater protection standard (GWPS), Golder, on behalf of NIPSCO, prepared a third addendum (hereinafter ACM Addendum #3) to the 2020 ACM in accordance with the requirements of 40 CFR §257.96. ACM Addendum #3 was certified by a qualified Indiana-licensed professional engineer on June 17, 2022. Following certification, ACM Addendum #3 was placed in the facility operating record and NIPSCO posted it to their publicly accessible CCR website. In October 2022, in accordance with the requirements of 40 CFR §257.103(f)(2)(x), Golder, on behalf of NIPSCO, prepared the Part A Demonstration Annual Progress Report #01-22, following which it was placed in the facility operating record and NIPSCO posted it to their publicly accessible CCR website. Following the September 29, 2022 public meeting held in accordance with the requirements of 40 CFR §257.96(e) to accept comment on the groundwater Assessment of Corrective Measures (ACM), Golder, on behalf of NIPSCO, completed the MCU groundwater SOR. The SOR, which determined MNA to be the most appropriate, and thus recommended, groundwater

corrective measure, was certified by a qualified Indiana-licensed professional engineer on December 28, 2022. Following certification, the SOR was placed in the facility operating record and NIPSCO posted it to their publicly accessible CCR website. On August 10, 2023, in further support of MNA for remediation of impacted groundwater downgradient of the MCU, WSP, on behalf of NIPSCO, performed geochemical modeling. Following completion, NIPSCO placed the resulting WSP modeling report in the facility operating record and posted it to their publicly accessible CCR website.

In planning for final closure of the WDA, which will follow shutdown of Units 17 and 18 and completion of pre-demolition boiler washdown activities, NIPSCO has retained WSP to evaluate alternative closure strategies and begin preparation of detailed closure design plans in accordance with the applicable requirements of 40 CFR §257.102. WSP will likewise be responsible for preparation of the requisite IDEM closure plan for state agency review and approval prior to closure construction. To those ends, WSP/NIPSCO have engaged in several discussions with IDEM regarding closure requirements and WSP has performed field investigations to evaluate the feasibility of options, including clean closure. WSP has prepared a draft closure plan and NIPSCO is planning to submit the WDA closure plan to IDEM by December 31, 2023.

NIPSCO continues to perform all CCR Rule required activities at RMSGS' regulated CCR surface impoundments (i.e., WDA and MCU) and its multi-phase CCR landfill. Based upon its interpretation of the regulatory obligations, NIPSCO reasserts its facility-wide compliance with all applicable Part 257 requirements.

### Conclusion

WSP completed the evaluation and prepared this 2023 Progress Report on behalf of NIPSCO. The 2023 Progress Report documents a) the continued lack of alternative capacity on-Site and off-Site, b) NIPSCO's progress toward the closure of the RMSGS surface impoundment referred to as the WDA, and c) additional Demonstration-related actions taken by NIPSCO since the 2022 Progress Report. NIPSCO currently anticipates no delays in the cease receipt date, or the final closure date as outlined in its 2022 Demonstration Addendum 2. WSP submits this Report in fulfillment of the 40 CFR §257.103(f)(2)(x) annual progress reporting regulatory requirement and the reporting commitments as outlined in the 2020 Demonstration, 2020 Demonstration Addendum 1, and 2022 Demonstration Addendum 2.

### References

Golder Associates Inc. (2020a), NIPSCO LLC RMSGS Demonstration of Site-specific Alternative Deadline to Initiate Closure of CCR Surface Impoundment Due to Permanent Cessation of Coal-Fired Boilers by a Date Certain, October 30, 2020.

Golder Associates Inc. (2020b), NIPSCO LLC RMSGS Demonstration of Site-specific Alternative Deadline to Initiate Closure of CCR Surface Impoundment Due to Permanent Cessation of Coal-Fired Boilers by a Date Certain – Addendum 1, November 30, 2020.

Golder Associates USA, Inc., a member of WSP (2021), NIPSCO LLC RMSGS 40 CFR §257.103(f)(2)(x) Part A Demonstration Annual Progress Report #01-21, October 29, 2021.

Golder Associates USA, Inc., a member of WSP (2022), NIPSCO LLC RMSGS Demonstration of Site-specific Alternative Deadline to Initiate Closure of CCR Surface Impoundment Due to Permanent Cessation of Coal-Fired Boilers by a Date Certain – Addendum 2, August 18, 2022.

Golder Associates USA, Inc., a member of WSP (2022), NIPSCO LLC RMSGS 40 CFR §257.103(f)(2)(x) Part A Demonstration Annual Progress Report #01-22, October 28, 2022.

WSP USA Inc., NIPSCO LLC RMSGS Multi-Cell Unit Reactive Transport Modeling, August 10, 2023.