TECHNICAL MEMORANDUM

DATE April 19, 2023 **Project No.** 31406779.019

TO Jeff Loewe, Manager, Environmental Remediation
Northern Indiana Public Service Company LLC (NIPSCO)

CC Joe Kutch, Jennifer Wunsh, Stephen Holcomb, Danielle Sylvia Cofelice, Joe Gormley, Cody Johnson

FROM Mark Haney **EMAIL mark.haney@wsp.com**

**RE: NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC
BAILLY GENERATING STATION, CCR UNITS - PRIMARY 1, PRIMARY 2, AND SECONDARY 1
SELECTION OF REMEDY, SEMI-ANNUAL PROGRESS REPORT #24-01**

On behalf of Northern Indiana Public Service Company LLC (NIPSCO) and in conformance with 40 Code of Federal Regulations (CFR) §257.97(a), WSP USA Inc. (WSP) prepared this Selection of Remedy (SOR) semi-annual progress report for the NIPSCO Bailly Generating Station (BGS), 246 Bailly Station Road, Chesterton, Porter County, Indiana (Site). This report summarizes progress toward selecting a groundwater remedy, or remedies, for three Coal Combustion Residuals (CCR) Rule regulated impoundments (Primary 1, Primary 2, and Secondary 1) collectively referred to herein as the CCR Units. Specifically, this SOR semi-annual progress report summarizes NIPSCO's/WSP's actions completed since the submittal of the ninth SOR semi-annual progress report on October 20, 2023.

In May 2019, Golder, which became WSP USA Inc. as of January 1, 2023, prepared an Assessment of Corrective Measures (ACM) to address detections of Appendix IV parameters in groundwater downgradient of the CCR Units above the groundwater protection standards (GWPS). Specifically, the ACM addressed arsenic, cadmium, lithium, and thallium due to Statistically Significant Levels (SSLs) in groundwater or detections above the GWPS. The ACM was prepared in conformance with applicable requirements of 40 CFR §257.96 and was certified by a qualified Indiana-licensed professional engineer on May 1, 2019. Following certification, the ACM was placed in the facility operating record, and NIPSCO posted it to their publicly accessible CCR website.

As discussed in the ACM, NIPSCO plans to close the CCR Units. In anticipation of closure, NIPSCO initially submitted a Closure Application to Indiana Department of Environmental Management (IDEM) in February 2021. Between April and September 2021 NIPSCO received comments from and was in communications with IDEM regarding aspects of the closure approach. NIPSCO also attended an in-person meeting with IDEM during mid-April 2022. Issues of review/discussion included CCR delineation and removal from certain CCR Units, excavation/removal of source material and the underlying Hypalon and clay liner systems, design of the final cover system, and conceptual design, future operation, and maintenance of a post-closure stormwater collection and infiltration gallery. Review by and discussions with IDEM continued, additional comments were received from IDEM and responded to by NIPSCO, and IDEM approved the closure/post-closure plan March 28, 2024.

Closure construction is currently underway and scheduled for completion in September 2025.

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The ACM initially identified five potential groundwater Corrective Measure alternatives to be considered for implementation following excavation and closure of the CCR Units. However, during the ACM process Golder determined that additional data and further evaluation were required prior to selecting a remedy from among these options.

In June 2022, Golder completed a final version of Addendum #1 to the ACM (initial draft prepared in April 2022) to supplement the findings of the 2019 ACM. The addendum was prepared to provide further details of Golder's evaluation of the potential corrective measures for the CCR Units, incorporate changes resulting from an enhanced final cover system design included in the draft closure application submitted and reviewed by IDEM, and reevaluate the potential Corrective Measures identified in the ACM based on their compatibility with the final closure design.

In May 2023 NIPSCO conducted a supplemental investigation that included installation and sampling of additional monitoring wells and conducted exploratory borings at the north and south property boundaries. The exploratory borings were conducted to confirm the presence, continuity, thickness of, and depth to the "upper clay" confining unit, the understanding of which is critical for evaluating potential applicability of remedial technologies in the ACM and SOR processes. The results confirmed the presence of the upper clay unit along the south property boundary and to the north of P1; however, the upper clay was not encountered to the north and east of P2. The lack of a relatively shallow confining unit downgradient of a regulated CCR unit may impact the SOR process (i.e., certain alternatives previously identified as appropriate may no longer meet all necessary criteria). Accordingly, NIPSCO is evaluating the necessity of preparing a second addendum to the ACM based on these newly identified site conditions.

The following SOR-related activities have been performed in the past six months:

- NIPSCO has continued to monitor groundwater impacts and flow direction and their effect(s) on potential Corrective Measure alternatives.
- Based on the results of the continued assessment monitoring and the May 2023 supplemental investigation, NIPSCO prepared Addendum #2 to the ACM. This addendum addresses potential effects to the Corrective Measures alternatives carried forward for assessment in the SOR process in the ACM and ACM Addendum #1 due to:
    - The discontinuous nature of the "upper clay" confining unit, which was previously assumed to extend continuously across the Site but was not encountered to depths of up to 50 feet below ground surface north and east of P2.
    - Removal of S2 as a CCR Unit with SSL exceedances of Appendix IV parameters. SSL exceedances of cadmium had previously been detected in assessment wells associated with S2; however, cadmium concentrations in the assessment wells surrounding S2 have dropped to below the GWPS for a sufficient number of sampling events to remove the SSL exceedance.
    - Detection of molybdenum above the GWPS in one of the new monitoring wells installed in the Greenbelt to the north of the CCR Units in May 2023.

Following additional rounds of groundwater monitoring to investigate the apparent SSL exceedance of molybdenum north of the CCR Units, WSP will determine whether additional data or evaluations are required to supplement the findings of the May 2019 ACM, June 2022 Addendum #1, and April 2024 Addendum #2.

Following this determination, WSP will either 1) prepare another ACM addendum to further reevaluate the potential Corrective Measure alternatives based on their compatibility with groundwater conditions and the final closure design or 2) proceed with the SOR, a process that will include groundwater modeling to evaluate remedies retained from the ACM in consideration of the National Park Service's (NPS') concerns regarding potential impacts to wetlands located downgradient of the impoundments in the Indiana Dunes National Park .

Throughout the summer-fall 2024 timeframe, WSP will continue to collect and evaluate additional information relative to the further review and advancement of potential Corrective Measures. These evaluations will be consistent with timing and implications of closure of the impoundments and additional discussions (if any) with the NPS. For these evaluations, WSP will emphasize the following:

- Identifying critical data gaps
- Understanding and reacting to impacts of newly gathered information on previous assumptions and/or conclusions
- Identifying and researching applicability of emerging technologies
- Monitoring changing conditions and future plans for the Site and their impacts on the remedy process

WSP will summarize these additional evaluations along with a summary of NIPSCO's progress toward completing the SOR process for the CCR Units in the next semi-annual progress report.

https://golderassociates.sharepoint.com/sites/nipscoccrgwmonitoring/shared documents/bgs/reports/selection of remedy progress reports/2203-02/bgs selection of remedy semi annual progress report 9_draft.docx