

TECHNICAL MEMORANDUM

DATE April 20, 2021 **Project No.** 19121569

TO Joe Kutch, Team Leader, Environmental Compliance
Northern Indiana Public Service Company LLC (NIPSCO LLC)

CC Jeff Loewe (NIPSCO LLC), Joe Gormley, Danielle Sylvia Cofelice, Jim Peace, Krysta Cione

FROM Mark Haney **EMAIL** mhaney@golder.com

**RE: NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC
BAILLY GENERATING STATION, CCR UNITS PRIMARY 1, PRIMARY 2, AND SECONDARY 1
CORRECTIVE MEASURES SELECTION OF REMEDY, SEMI-ANNUAL PROGRESS REPORT #21-01**

On behalf of Northern Indiana Public Service Company LLC (NIPSCO LLC) and in conformance with 40 Code of Federal Regulations (CFR) §257.97(a), Golder Associates Inc. (Golder) has prepared this semi-annual progress report for the NIPSCO LLC Bailly Generating Station located at 246 Bailly Station Road in Chesterton, Porter County, Indiana (BGS or Site). This report summarizes progress toward selection of a Corrective Measure(s) remedy for three Coal Combustion Residuals (CCR) impoundments (Primary 1, Primary 2, and Secondary 1) collectively referred to herein as the CCR Units. Specifically, this semi-annual progress report summarizes NIPSCO LLC's/Golder's actions completed since the submittal of the third semi-annual progress report on October 21, 2020.

In May 2019, Golder 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 groundwater protection standards. 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 LLC posted it to their publicly-accessible CCR website.

As discussed in the ACM, NIPSCO LLC plans to close the CCR Units by removal in accordance with 40 CFR §257.102(c). NIPSCO LLC submitted a Closure Application to Indiana Department of Environmental Management (IDEM) in February 2021, which is currently under review. Modifications to the closure approach and IDEM-required changes to the Closure Application will impact the ACM and selection of a groundwater Corrective Measure(s).

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

Following submittal of the ACM, Golder identified changes in groundwater flow direction. These changes were identified during a review of 2019-2020 potentiometric surface data and appear to be related to the shutdown of coal-fired generating activities and consequent modifications in operation of the impoundments. As a result, the

groundwater monitoring network was updated to appropriately monitor groundwater quality immediately downgradient of the CCR Units and to allow for the collection and evaluation of additional information essential to evaluate the potential groundwater Corrective Measure alternatives.

Concurrent with NIPSCO LLC's preparation of the Closure Application and development of the closure detailed design, Golder performed additional field investigations to collect Site-specific data and conducted analyses of recent and historical information. The following remedy selection-related activities have been performed in the past six months:

- During the fall 2020 timeframe, Golder continued to re-evaluate the groundwater flow direction based on water levels from the updated monitoring well network, collected groundwater samples from the updated monitoring well network, and evaluated the resulting analytical data. Specifically, Golder sampled groundwater monitoring wells for CCR and monitored natural attenuation (MNA) parameters from November 2, 2020 to November 6, 2020.
- During winter 2020-2021 timeframe, Golder continued to measure water levels and evaluate the groundwater flow direction.
- On February 18, 2021, Golder submitted a proposed monitoring well installation plan to IDEM to abandon existing CCR Rule assessment monitoring well GAMW-12 and install replacement monitoring well GAMW-12R in accordance with applicable IDEM regulations. Due to the changes in groundwater elevations observed after the shutdown of coal-fired generating activities, the observed water level in GAMW-12 had decreased to within one to two feet of the bottom of the screened interval, which impaired groundwater collection. Golder proposed to replace GAMW-12 with a deeper well installed in the same location.
- On March 30, 2021, Golder and its drilling subcontractor installed replacement monitoring well GAMW-12R to a depth of approximately 28 feet below ground surface and abandoned monitoring well GAMW-12. Groundwater samples will be collected from GAMW-12R during the Spring 2021 sampling event.

Following final closure design for the CCR Units and IDEM acceptance of the Closure Application as complete (which is expected in December 2021), Golder will prepare an Addendum to the ACM to supplement the findings of the 2019 ACM, provide further details of Golder's evaluation of the potential Corrective Measures, and reevaluate the list of potential Corrective Measures identified in the ACM based on their compatibility with the final closure design.

Throughout the spring-fall 2021 timeframe, Golder will continue to collect and evaluate additional information relative to the potential Corrective Measures. These evaluations will include but not be limited to the following:

- Perform groundwater modelling to simulate the groundwater flow conditions in the area surrounding the CCR Units to support the closure design and evaluate groundwater corrective measures for the Site.
- Begin MNA evaluations to determine the feasibility, mechanisms, rates, and stability of MNA as a potential remedy for groundwater impacts at the Site.

These evaluations will be consistent with timing and implications of the IDEM's review of the Closure Application, NIPSCO LLC's closure-related public meeting, and IDEM approval processes. For these evaluations, Golder will place emphases on 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, and monitoring changing conditions and future plans for the Site and their impacts on the remedy process. Golder will summarize these additional evaluations along with a summary NIPSCO LLC's progress toward selection of remedy for groundwater Corrective Measures for the CCR Units in the next semi-annual progress report.

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