VERIFIED DIRECT TESTIMONY OF BRENT J. SHULER

Q1. Please state your name, business address and title.

A1. My name is Brent J. Shuler. My business address is 290 W. Nationwide Blvd., Columbus, Ohio 43215. I am employed by NiSource Corporate Services Company ("NCSC") as Manager Risk Assessment.

Q2. On whose behalf are you submitting this direct testimony?

A2. I am submitting this testimony on behalf of Northern Indiana Public Service Company LLC ("NIPSCO").

Q3. Please briefly describe your educational and business experience.

A3. I received a Bachelor of Science in Mechanical Engineering Technology from Purdue University in 2012 and a Master of Business Administration from Purdue University Fort Wayne in 2018. My professional utility experience began in 2013 and has focused on cathodic protection, integrity management, and risk assessment. I joined NIPSCO in 2013 as a corrosion engineer and became the front line leader of corrosion & leakage for Columbia Gas of Ohio in 2017. In the Spring of 2020, I became manager of risk assessment for all of NiSource.

Q4. What are your responsibilities as Manager Risk Assessment?

A4. As Manager Risk Assessment, I am responsible for overseeing the risk tools used to assess risk across asset classes. The Risk team has implemented probabilistic risk assessment ("PRA") models for transmission and distribution asset classes and is in the process of implementing a PRA for the Measurement & Regulation asset class. The output of the PRAs is used to support the business planning process and the distribution and transmission integrity management programs. The output of the distribution PRA is used as an input to a tool that is used by the engineering team to prioritize mains for replacement. In addition to overseeing the risk models, I am also responsible for the implementation of Advanced Mobile Leak Detection ("AMLD") across NiSource. NiSource has begun deploying AMLD technology to address the methane emissions from leaks and plans to continue this rollout to comply with the requirements of using Advanced Leak Detection, as stated in Section 113 of the PIPES Act of 2020. NiSource intends to use the data gathered from the AMLD units to help inform the distribution PRAs, which will drive pipe replacement programs.

Q5. Have you previously testified before this or any other regulatory commission?

A5. No.

Q6. What is the purpose of your direct testimony in this proceeding?

A6. The purpose of my direct testimony is to support two federally mandated projects included in NIPSCO's proposed Pipeline Safety III Compliance Plan (the "Compliance Plan") (attached to NIPSCO's Verified Petition filed in this Cause as Attachment A), set out in Table 1 below (the "AMLD Projects"):

AMLD Projects	
Project No.	**Project Name**
PSCP3-22	Advanced Mobile Leak Detection (Capital)
PSCP3-28	Advanced Mobile Leak Detection (O&M)

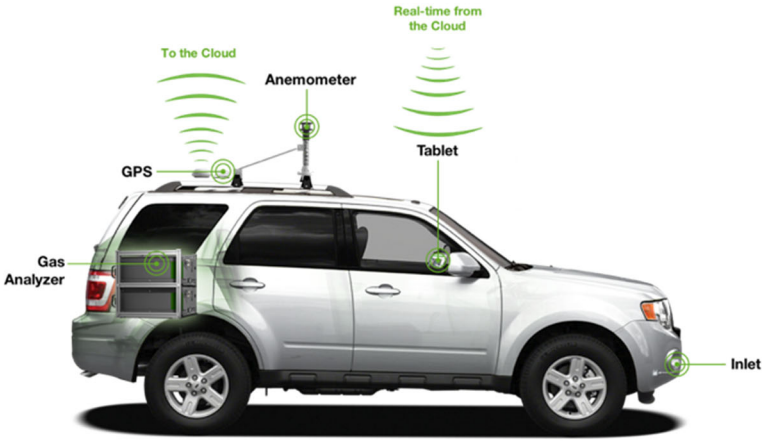
Specifically, for each project, I (1) describe the projected federally mandated costs associated with the projects and how the costs were developed, (2) describe any alternatives to the project that demonstrate the project is reasonable and necessary, (3) explain whether the project will extend the useful life of an existing facility and, if so, provide the value of that extension; and (4) describe the extent to which the project is mandated for compliance with the various provisions of 49 CFR Part 192 (the "PHMSA Rules").

Q7. Are you sponsoring any attachments to your direct testimony?

A7. Yes. Together with NIPSCO Witnesses Carr, Holtz, and Sylvester, I am sponsoring a portion of NIPSCO's proposed Compliance Plan (Attachment A to the Verified Petition) and a portion of the overview of the PHMSA federally mandated requirements to which the Pipeline Safety III Compliance Plan directly or indirectly complies (the "PHMSA Rules") (Attachment B to the Verified Petition. I also sponsor Confidential Attachment 5-A, which are the workpapers that support the cost estimates associated with the AMLD Projects.

Q8. Please describe the Advanced Mobile Leak Detection Project.

A8. The Advanced Mobile Leak Detection Project includes the purchase of three Picarro Surveyor units. The Picarro Surveyor enabled units consists of four air inlets that are mounted on the front bumper of a vehicle, an Anemometer and GPS that are mounted on the roof of the vehicle, and an analyzer consisting of a cavity ring down spectroscopy unit that is mounted in the vehicle. A tablet is mounted in the front of the vehicle for the driver to see where they should be driving to ensure they are maximizing the coverage of the area where data collection is taking place.



While the vehicle is driving, the inlets will sample the air and send it to the analyzer four times per second to determine concentration of methane in the air. The processing unit will combine the analyzer data with the GPS and wind speed data to determine the most likely location of the indication. The GPS and wind speed information will create a field of view so the user is able to understand the total coverage area of the drives. A driver will perform three drives of the identified area, over three nights. Each drive will consist of two passes of each main segment. Driving at night delivers better results as the sun disperses methane faster, the wind is more steady, and there is less traffic. At the conclusion of the final drive, a leak analyst will generate a report from the three drives that shows the location of all leak indications. Once the leak analyst has generated a report and analyzed the data, they will work with the scheduling team to dispatch a leakage

inspector to investigate the indications, which will be prioritized based on Picarro Risk Ranking Analytics.[1]

NiSource conducted a pilot in Indiana, Pennsylvania, and Ohio, with the following results:

Indiana	Driven 1,645 miles of mains Found 22 large volume leaks and 169 gradeable leaks Average of .77 gradeable leaks per mile
Pennsylvania	Driven 2,005 miles of mains Found 44 large volume leaks Average of 1.13 gradeable leaks per mile
Ohio	Driven 390 miles of mains Found 409 gradeable leaks Average of 1.9 gradeable leaks per mile

The pilots in Indiana and Pennsylvania focused on surveying distribution mains and services for leaks that have a large flow rate. These pilots provided insight into how best to deploy the Picarro Surveyor units for detection of leaks with a large volume of methane emissions. The Ohio pilot focused on surveys of recently completed pipeline replacement projects and compliance surveys where the Picarro unit surveyed an area immediately after a traditional walking leak survey had been completed.

[1] The leakage inspectors will investigate all indications using survey techniques described in GS 1708.070. All leaks found during the investigation will be graded according to the appropriate state level version of GS 1714.010.

This was done to help inform processes and procedures for a larger deployment of the Picarro Surveyor technology. Based on these findings, NIPSCO expects to find 2 to 3 times the number of leaks using AMLD, when compared to traditional leak inspection. This heightened level of leak detection not only achieves compliance with the PIPES Act but also provides NIPSCO with the improved ability to monitor the condition of its system and address leaks that in the past may not have been detected. The costs associated with this project recognize the level of leaks that have historically been addressed, and therefore are related to the investigation and repair of leaks (Grade 1 and Grade 2) that are above the average number of leaks found through traditional means.

In coordination with NIPSCO's pilot project, three separate meetings were held with members of the Commission and the Pipeline Safety Division. The purpose of the meetings was to demonstrate the effectiveness of using the Picarro Surveyor units for compliance leak surveys. At the conclusion of these meetings, NIPSCO presented the staff of the Pipeline Safety Division with the operating procedure for the Picarro Surveyor units, and NIPSCO received positive feedback from the Pipeline Safety Division on its plan for using the Picarro Surveyor for compliance leak surveys.

Q9. Please describe the projected federally mandated capital costs associated with the Advanced Mobile Leak Detection Project and how the cost estimates were developed.

A9. NIPSCO projects the federally mandated capital costs associated with the Advanced Mobile Leak Detection Project to be $3,600,000 for the period 2022 through 2024. The cost estimate is based on a NIPSCO negotiated price of $1,200,000 per vehicle, with one Picarro Surveyor unit being purchased in 2022, one in 2023, and one in 2024.

Q10. Please describe the projected federally mandated O&M costs associated with the Advanced Mobile Leak Detection Project and how the cost estimates were developed.

A10. NIPSCO projects the federally mandated O&M costs associated with the Advanced Mobile Leak Detection Project to be $14,335,542 for the period 2022 through 2026. The cost estimate is based on $60,000 per vehicle per year for service charge, $110,485 per vehicle per year for driver, an average of $109,810 per vehicle per year in additional leakage inspection costs, and an average of $2,128,514 per vehicle per year in incremental leak repair costs. NIPSCO will begin hiring the internal labor needed to repair the additional leaks in 2022 and expects to have the staff completely hired and

trained by the end of 2023. The costs for leak inspection and repair are anticipated to drop in 2026, because NIPSCO expects to see a reduction in the number of leaks, due to AMLD, after one full leak inspection cycle (3 years) has been completed. The service charge for the Picarro Surveyor units covers the twice-yearly maintenance, 24-hour support, connection to software interface, and full warranty on replacement or repairs of unit components.

Q11. Please describe how the Advanced Mobile Leak Detection Project allows NIPSCO to comply with a federally mandated requirement.

A11. An overview of the PIPES Act of 2020 is included in Attachment B to the Verified Petition. The PIPES Act of 2020 mandates that the PHMSA create rules to require the use of advanced leak detection technology and requires companies to have a plan in place to address emissions and protect the environment. Section 113 required the PHMSA to create a final rule to require operators to conduct leak detection and repair programs using advanced leak detection technology. Section 114 and ADB-2021-01 requires operators to have inspection and maintenance plans that address eliminating leaks and minimizing the release of natural gas. The AMLD

project will provide information that will be used to prioritize leaks for repair/replacement.

Q12. Please describe any alternatives to the Advanced Mobile Leak Detection Project that demonstrate the project is reasonable and necessary?

A12. NIPSCO has and continues to investigate the use of methane detection satellites for advanced leak detection technology. The initial costs of satellite methane detection are approximately 2 times the costs of using the Picarro Surveyor units, on an annualized basis, but with similar results. Using the advanced leak detection technology mandated by the PIPES Act of 2020 shifts distribution leakage inspection of mains and services from traditional walking surveys. Some of the safety aspects of using the Picarro Surveyor units include (1) moving from an asset based inspection to an area based inspection, (2) reducing the number of missed leaks due to equipment sensitivity, and (3) surveys can be accomplished more frequently, allowing leaks to be detected sooner. The Picarro Surveyor units deliver on NIPSCO's goals to reduce methane emission by quantifying leak rates, which allows NIPSCO to prioritize highest volume leaks for repair or replacement.

Q13. Will the Advanced Mobile Leak Detection Project extend the useful life of an existing facility and, if so, what is the value of that extension?

A13. Yes. While the leak survey detection itself may not extend the useful life of the pipe, any replacement or remediation that arises from the detection would extend the useful life equivalent to the capital investment.

Q14. Does this conclude your prepared direct testimony?

A14. Yes.

VERIFICATION

I, Brent J. Shuler, Manager Risk Assessment for NiSource Corporate Services Company, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information and belief.

Brent Shuler

Brent J. Shuler

Date: March 31, 2021

Confidential Attachment 5-A (Redacted)

[Brent Shuler Workpapers]