

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Vectren)	
Energy Delivery of Ohio, Inc. for Approval)	Case No. 18-0298-GA-AIR
of an Increase in Gas Rates)	

In the Matter of the Application of Vectren)	
Energy Delivery of Ohio, Inc. for Approval of)	Case No. 18-0299-GA-ALT
an Alternative Form of Regulation)	

**DIRECT TESTIMONY OF
ELLIS S. REDD
ON BEHALF OF
VECTREN ENERGY DELIVERY OF OHIO, INC.**

<u> </u>	Management policies, practices, and organization
<u> </u>	Operating income
<u> </u>	Rate base
<u> </u>	Allocations
<u> </u>	Rate of return
<u> </u>	Rates and tariffs
<u> X </u>	Other (Alternative Rate Plan: Distribution Replacement Rider and Distribution Accelerated Risk Reduction Program)

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
II.	PROGRESS OF VEDO’S REPLACEMENT AND COMPLIANCE INITIATIVES	3
III.	CONTINUATION AND POTENTIAL EXPANSION OF REPLACEMENT PROGRAM	12
IV.	ONGOING COMPLIANCE WITH FEDERAL PIPELINE SAFETY REGULATIONS	15
V.	CONCLUSION	20

**Direct Testimony of
Ellis S. Redd**

I. INTRODUCTION

Q1. Please state your name, business address.

A. My name is Ellis S. Redd and my address is One Vectren Square, Evansville, Indiana 47708.

Q2. What position do you hold with Applicant Vectren Energy Delivery of Ohio, Inc. (VEDO or the Company)?

A. I am Vice President of Safety and System Integrity for Vectren Utility Holdings, Inc. (VUHI), the immediate parent company of VEDO. I hold the same position with the three utility subsidiaries of VUHI: VEDO, Indiana Gas Company, Inc. d/b/a Vectren Energy Delivery of Indiana, Inc. (Vectren North), and Southern Indiana Gas and Electric Company d/b/a Vectren Energy Delivery of Indiana, Inc. (Vectren South).

Q3. What are your duties in your present position?

A. I have leadership and oversight responsibility for the Company's continuous focus on improving and sustaining the safety of our workforce, gas and electric assets, and the public. In this role I have responsibilities for safety, gas and electric compliance, gas asset and integrity management, including distribution, transmission and storage field integrity management activities, physical security, and fleet and facility management.

Q4. Please describe your work experience.

A. I have been employed by VUHI since March 12, 2002. My current role is the Vice President of Safety & System Integrity. Safety and System Integrity focuses on ensuring the safety of VUHI's workforce, assets and the public. This includes the implementation of VUHI's safety management system, operator qualification and training programs,

1 damage prevention programs, and asset risk modeling and risk mitigation programs. Prior
2 to this position, I was VUHI's Vice President of Human Resources for ten years. I have
3 also held roles responsible for corporate planning, strategic procurement, facility and
4 fleet management, and physical security. Prior work experience includes nine years of
5 increasing responsibility at Mead Johnson Nutritionals (MJN) in Evansville, Indiana,
6 where I led the entire manufacturing operation producing Food and Drug Administration
7 (FDA) regulated infant formula and adult medical nutritional products. Prior roles at
8 MJN included engineering, strategic procurement, strategic planning, facility
9 management, production, process, and project engineering, electrical and mechanical
10 maintenance management, and production planning & control. Prior to MJN, I worked
11 five years as an engineer for Alcoa Corporation Warrick County Operations in
12 Newburgh, Indiana starting out as a maintenance engineer and progressing through
13 several production areas as a senior production and maintenance engineer.

14 **Q5. What is your educational background?**

15 A. I received a bachelor of science in industrial engineering from North Carolina
16 Agricultural and Technical State University in Greensboro, North Carolina and a
17 Master's Degree in Business Administration with a concentration in Manufacturing
18 Management from Washington University in St. Louis, Missouri.

19 **Q6. Have you previously testified before this Commission?**

20 A. Yes. I testified before the Public Utilities Commission of Ohio (Commission) in the last
21 rate case, Case No. 07-1080-GA-AIR.

22 **Q7. What is the purpose of your testimony in this proceeding?**

23 A. The purpose of my testimony is to provide an overview of the history and progress of
24 VEDO's replacement and compliance initiatives including the accelerated bare steel and

1 cast iron (BSCI) replacement program (Replacement Program) and the Distribution
2 Accelerated Risk Reduction (DARR) program. I will then introduce VEDO's proposal to
3 extend the Replacement Program and recovery of the Replacement Program costs under
4 the Distribution Replacement Rider (DRR). Finally, I will describe how additional
5 federal pipeline safety regulations and advancements made by the Company to comply
6 with these on-going regulations further support these efforts and will likely drive
7 increasing infrastructure replacement and pipeline safety initiatives over time.

8 **Q8. Are you sponsoring any exhibits?**

9 A. No.

10
11 **II. PROGRESS OF VEDO'S REPLACEMENT AND COMPLIANCE INITIATIVES**

12 **Q9. Discuss VEDO's history of pipeline safety programs.**

13 A. As part of its compliance with pipeline safety and integrity management regulations,
14 VEDO has implemented a comprehensive asset and integrity management program that
15 addresses distribution and transmission system integrity, workforce safety, and public
16 safety. These programs began with the implementation of VEDO's transmission integrity
17 management program (TIMP) driven by the Pipeline Safety Improvement Act of 2002
18 and the resulting Pipeline and Hazardous Materials Safety Administration (PHMSA) gas
19 transmission integrity management regulations (49 CFR 192, Subpart O) requiring
20 operators to implement a TIMP by the end of 2004. In compliance with TIMP, VEDO
21 developed a transmission asset threat identification, risk assessment, field integrity
22 assessment, and program performance metric evaluation process for transmission assets.

1 **Q10. What developments followed the adoption of TIMP regulations?**

2 A. In response to additional industry events involving gas distribution assets leading to
3 congressional mandates in the Pipeline Inspection, Protection, Enforcement, and Safety
4 Act of 2006, PHMSA published its final distribution integrity management program
5 (DIMP) regulations addressing risk reduction to distribution assets in late 2009.
6 Operators of gas distribution systems, like VEDO, were required to implement their
7 DIMP plan by August 2, 2011. Among the drivers for DIMP regulations were incidents
8 on cast iron and wrought iron pipelines and vintage pipelines, or pipelines constructed
9 prior to pipeline safety compliance regulations in 1970, which includes bare steel and
10 ineffectively coated steel pipelines.

11 Many operators, including VEDO, had experienced high leak rates (*i.e.*, leaks per
12 mile of pipeline) and maintenance concerns with these asset types and had implemented
13 replacement programs to retire high risk, low performing assets from their systems.
14 Through DIMP, PHMSA urged and encouraged operators to formalize those asset
15 replacement programs and accelerate the retirement of high risk distribution assets.
16 VEDO also implemented a data gathering, asset threat identification, risk assessment,
17 mitigative action prioritization and program performance metric evaluation process for
18 distribution integrity management and improved on best practices established through its
19 TIMP.

20 Both VEDO's TIMP and DIMP are asset integrity and safety management
21 systems based on the continuous improvement principles of "plan, do, check and adjust."

1 **Q11. Have there been further developments in pipeline regulation, and VEDO's**
2 **responses, since the adoption of TIMP and DIMP?**

3 A. Yes. As significant events continued to occur on both transmission and distribution gas
4 assets, beginning in 2009, the industry received additional congressional mandates,
5 National Transportation Safety Board (NTSB) incident investigation report findings and
6 recommendations, and PHMSA advisory bulletins urging operators to consider enhancing
7 their integrity management programs by implementing a comprehensive pipeline safety
8 management system.

9 The American Petroleum Institute (API) developed a recommended practice (API
10 RP 1173) defining the elements of a pipeline safety management system to provide
11 operators a common platform to enhance their integrity management programs by
12 creating a dynamic system of efforts to demonstrate leadership commitment to safety,
13 providing a documented structure for pipeline safety risk management decisions,
14 increasing confidence in risk mitigation, promoting a safety oriented culture, and
15 providing an industry platform for knowledge sharing and lessons learned.

16 Responding to these and other developments, VEDO implemented its safety
17 management system (SMS) in 2015 and structured its system based on PHMSA pipeline
18 safety regulations, advisory bulletins, specifically PHMSA's "Guidance for
19 Strengthening Pipeline Safety through Rigorous Program Evaluation and Meaningful
20 Metrics," API RP 1173, and best practices from other high-risk, zero-failure industries
21 such as pharmaceuticals and aerospace. Following the implementation of its SMS, VEDO
22 has made significant advancements in gas asset safety threat identification, risk
23 assessment, mitigative action development and prioritization, and program performance
24 evaluations.

Q12. Briefly summarize what DIMP regulations require of an operator.

A. PHMSA's DIMP regulations require an operator to do the following:

- obtain knowledge of the system,
- identify threats,
- evaluate and rank risks,
- identify and implement measures to address risks,
- measure performance and evaluate effectiveness, and
- report program results.

Q13. How has VEDO implemented these requirements?

A. VEDO's first five years of DIMP implementation, beginning in 2010, focused on creating a process and procedures to meet the regulatory requirements listed above and establishing a baseline of system knowledge and threats. This process included establishing a distribution integrity risk model and developing, implementing and documenting additional accelerated actions (AAs) to mitigate distribution asset threats. VEDO's initial distribution integrity risk model considered the number of leaks per mile or area, associated with asset types and the location of assets in respect to population. This model identified certain asset vintages and material classes with high leak rates as high risk, specifically BSCI and above-ground assets and meter sets with mechanical fittings. VEDO evaluated the BSCI asset Replacement Program initiated in 2009 and created an AA to document the performance and risk reduction metrics associated with the program.

Q14. Has VEDO's ability to evaluate risks and threats continued to evolve?

A. Yes. VEDO has implemented a process to feed asset data to distribution risk assessment, eliminating system knowledge gaps, and also advanced its modeling capabilities, all of which has culminated in enhancements in threat identification and distribution asset risk determination. Within the past year as part of VEDO's DARR, VEDO has implemented a set of asset-based risk models to assess risk on distribution pipelines, valves and pressure regulation equipment. The results of these models continue to identify high risk asset classes for risk mitigation prioritization.

Q15. What have these models suggested to VEDO?

A. The models have confirmed VEDO's focus thus far on BSCI assets through the Replacement Program, and also suggest other asset classes may warrant attention. High risk assets include BSCI, ineffectively coated steel, coated unprotected steel, vintage "Aldyl-A" plastic, and non-standard or obsolete facilities. VEDO's DIMP requires the evaluation of these risks against the prioritization of the existing AAs to determine if the current risk mitigation plans are adequate or need to be considered for enhancement.

Q16. What does "Aldyl-A" refer to?

A. "Aldyl-A" is a plastic material type used in the manufacture of gas distribution pipe beginning in the late 1960's and is a specific brand name of DuPont. Aldyl-A pipe was among the earliest plastic pipe materials introduced to the gas industry as an alternative to steel pipe and is the most prevalent vintage plastic material remaining in service today. VEDO has approximately 384 miles of Aldyl-A mains in operation within its system. The use of plastic pipe has been accepted as a generally safe and economical alternative to steel pipe, and Aldyl-A was considered such at the time of installation. Over time, however, this material proved susceptible to premature brittle-like failures when

1 subjected to stress intensification and thus represents a potential safety hazard. This
2 brittleness makes it subject to cracking, particularly from earth movement around the
3 pipe, and the common practice of “squeezing off” plastic pipe to extend a main or isolate
4 a portion of the distribution system for maintenance or emergency response also creates
5 additional risk. Aldyl-A pipe is also adversely impacted by stray electrical currents from
6 electrical lines and lightning which can result in cracking and leaking. Additionally, it is
7 more costly to continue to operate Aldyl-A systems; once disturbed by excavation,
8 facility damages, or other activities, it typically must be replaced and not repaired.

9 **Q17. Is Aldyl-A pipe currently within the scope of the Replacement Program?**

10 A. Yes, subject to certain limitations. Under these limitations, VEDO continues to eliminate
11 Aldyl-A assets intermittently within its Replacement Program. However, risk modeling
12 suggests that a more systematic and proactive approach to eliminating Aldyl-A may be
13 warranted. VEDO believes that such an approach may be more cost-effective than
14 reacting to circumstances that require immediate attention as it continues to evaluate its
15 Replacement Program over time. As discussed below, VEDO believes that it may be
16 necessary to request a modification or expansion of the scope of the Replacement
17 Program to address these and other higher risk assets. In the interim, VEDO will
18 continue to collect and model data related to this type of pipe and the company is willing
19 to provide the Commission and Staff with regular updates regarding the performance of
20 these and other assets being monitored.

21 **Q18. What does “coated unprotected steel” refer to?**

22 A. Coated unprotected steel main refers to pipelines that were installed with protective
23 coating but without cathodic protection. When these particular pipelines were installed, it
24 was not an uncommon practice in the industry. PHMSA Part 192 Subpart I prescribes

1 protection of metallic pipelines installed after July 31, 1971. Pipelines without cathodic
2 protection are prone to accelerated corrosion and leakage. VEDO currently has
3 approximately 330 miles of coated unprotected steel distribution mains.

4 **Q19. Are coated unprotected steel lines currently within the scope of the Replacement**
5 **Program?**

6 A. No. As described below, however, and similar to Aldyl-A, VEDO's risk modeling
7 suggests that a more systematic and proactive approach to eliminating these assets may
8 be warranted.

9 **Q20. Does VEDO's DIMP support the continued retirement of BSCI?**

10 A. Yes. VEDO's DIMP has continually supported the retirement of BSCI as the highest risk
11 asset class throughout the evolution of the DIMP program. Risk modeling continues to
12 identify BSCI assets as having a high leak rate and maintenance requirement. VEDO's
13 DIMP has conducted multiple evaluations of the BSCI AA program performance and risk
14 reduction metrics and has observed the improvement in those safety metrics, such as
15 volume of leaks and operations response actions, related to the reduction of BSCI assets
16 in the system.

17 **Q21. Do you believe that VEDO's Replacement Program continues to effectively address**
18 **fundamental public safety issues that support completing the program?**

19 A. Yes. Modern pipeline materials and installation practices are superior to decades old
20 mains and services made of BSCI. It is unavoidable that, over time, BSCI pipelines will
21 degrade, and VEDO's DIMP is recognizing evidence of that degradation in the form of
22 leaks due to corrosion as the BSCI pipelines continue to operate. Unfortunate pipeline
23 incidents in other states, which have caused significant damage and personal injury, have
24 frequently been linked to BSCI failures. This fact was recognized at the time VEDO
25 commenced the Replacement Program as a means of systematically eliminating such pipe

1 from its system. The subsequent DIMP regulations, and resulting focus on risk modeling
2 and mitigation, simply serve to reinforce the Program as a means of protecting and
3 improving public safety. As discussed in this case, VEDO's plan is to complete BSCI
4 replacement by 2023. This will ensure that VEDO's customers are served by a
5 modernized system, leveraging state-of-the-art materials and construction techniques,
6 which are far less subject to failure. VEDO continues to believe that the elimination of
7 these risks warrants the systematic, proactive approach provided by the Replacement
8 Program.

9 **Q22. Does VEDO's DIMP support the other asset classes included within the**
10 **Replacement Program?**

11 A. Yes. VEDO's DIMP risk assessment process has supported the accelerated approach to
12 replacing other high risk assets. This includes replacing ineffectively coated steel, vintage
13 "Aldyl-A" plastic (as discussed above), and obsolete infrastructure associated with the
14 BSCI replacement projects. Additionally, VEDO's DIMP supports the moving of meters
15 outside of customer premises for improved access for safety and maintenance activities.

16 **Q23. In addition to the Replacement Program, has VEDO implemented other AAs to**
17 **address distribution asset risks?**

18 A. Yes. As an outcome of DIMP, VEDO has periodically evaluated its distribution risk
19 mitigation activities, performance and risk reduction metrics, and risk modeling results.
20 This evaluation resulted in the identification of accelerated risk reduction initiatives and
21 the development of VEDO's DARR in Case No. 15-1741-GA-AAM. VEDO's DARR
22 includes six initiatives targeted either to enhance distribution threat identification and risk
23 assessment, or to reduce currently identified high areas of risk. While driven by our
24 compliance requirements, these programs/initiatives promote safety and reliability.

1 Differing from VEDO's Replacement Program, VEDO's DARR is focused on additional
2 O&M activities required by DIMP. The six initiatives within the DARR are:

- 3 • Expanded Leak Management Program
- 4 • Enhanced Damage Prevention Program
- 5 • Public Awareness
- 6 • Workforce Training and Qualification for New Requirements
- 7 • Pipeline Safety Management System Implementation
- 8 • Enhanced Risk Modeling and Threat Analysis

9 The DARR initiatives, benefits and performance metrics are discussed in detail in the
10 testimony of VEDO Witness Sarah J. Vyvoda.

11 **Q24. Please describe VEDO's safety management system (SMS)?**

12 A. VEDO's SMS requires the collection of risks identified from personnel working on and
13 around gas assets or supporting gas asset work processes to populate a risk register. The
14 risks are then ranked by the personnel, reviewed by an internal technical committee, and
15 a threshold is established to define the mitigating actions required to address those risks.
16 VEDO has completed multiple cycles of identifying and ranking risks to gas assets,
17 employee safety and system operations and has periodically updated its risk register as
18 part of the SMS for gas pipeline safety activities.

19 **Q25. What does this risk identification process involve?**

20 A. VEDO includes subject matter experts (SMEs) from various fields—including gas
21 operations, engineering, gas contractors, safety, compliance, damage prevention, human
22 resources, and information technology—to participate in the risk identification process.
23 The current pipeline risk mitigation programs and projects are linked to risk register

1 items, through a detailed risk assessment process or “bowtie analysis” that maps each risk
2 to its mitigation plan. Key performance indicators and metrics have been identified and
3 evaluated to measure the effectiveness of those mitigation plans. VEDO’s SMS risk
4 register supports the replacement of high risk distribution assets and the targeted
5 retirements of BSCI. Additionally, VEDO’s SMS risk register supports the accelerated
6 risk reduction initiatives within VEDO’s DARR to improve the training and quality of
7 our workforce, enhance public awareness of safe practices around VEDO assets and work
8 areas, improve knowledge of VEDO’s distribution system to identify threats, and to
9 appropriately and timely assess distribution pipeline safety risks and prioritize mitigation
10 activities. The SMS risk register emphasizes the priority to reduce the volume of open
11 leaks within VEDO’s distribution system which is executed jointly through the
12 Replacement Program and the DARR Enhanced Leak Management Program.

13
14 **III. CONTINUATION AND POTENTIAL EXPANSION OF REPLACEMENT**
15 **PROGRAM**

16 **Q26. Please provide a brief update on the status of VEDO’s BSCI replacement.**

17 A. As of the end of 2017, VEDO has retired approximately 354 miles of BSCI and has
18 approximately 364 miles of BSCI remaining in its system.

19 **Q27. Please describe the scope of asset replacements included in the Replacement**
20 **Program.**

21 A. The current scope of the Replacement Program was established and modified in VEDO’s
22 last DRR extension case, Case No. 13-1571-GA-ALT. The current scope includes the
23 retirement and replacement of high risk distribution asset types, including BSCI and
24 ineffectively coated steel, and targets the complete retirement of BSCI in the VEDO
25 system. The Replacement Program also includes moving meters outside of customer

premises, the replacement of certain service lines, and the retirement of certain plastic pipe assets, such as vintage plastic or short segments of plastic, and obsolete pipeline components within the BSCI system. VEDO proposes continuing the currently authorized scope in this case, subject to potential modification, as discussed below.

Q28. Has VEDO targeted a completion date for the retirement of its remaining BSCI assets?

A. Yes. VEDO's plan is to complete the retirement of BSCI assets by the end of 2023.

Q29. Does VEDO request an extension of its Replacement Program?

A. Yes. VEDO requests an extension of its Replacement Program and cost recovery under the DRR in order to complete the retirement of BSCI assets by the end of 2023. The associated cost recovery in the DRR is discussed by VEDO witness J. Cas Swiz.

Q30. Why is VEDO requesting an extension of its Replacement Program?

A. Currently, 364 miles of BSCI remain in VEDO's distribution system. VEDO continues to incur operational inefficiencies, reliability concerns and system risks as long as the BSCI mains are in operation. The continuation of VEDO's Replacement Program remains essential to maintain the safe and reliable delivery of natural gas throughout the service territory, continue to comply with VEDO's DIMP, and maintain alignment with PHMSA and industry pipeline safety best practices. The scope, strategy and costs associated with VEDO's continued Replacement Program are discussed in the testimony of Witness Vyvoda.

Q31. Is VEDO required to evaluate the scope and effectiveness of its Replacement Program as part of its DIMP?

A. Yes. VEDO's DIMP requires the evaluation of its risk mitigation activities, including both the Replacement Program and the DARR to determine the effectiveness of risk reduction in the system based on the established program metrics. As it has implemented

1 its risk models, VEDO has evaluated the effectiveness of both of these programs.
2 Preliminary review of the model, in conjunction with other improvements to records and
3 data collection also associated with this initiative, has confirmed the Replacement
4 Program's focus on BSCI assets. VEDO conducted the same evaluation of the results of
5 the "Pipeline Safety Management Implementation" initiative, and found its risk register
6 further supports the replacement of BSCI as an effective distribution risk mitigation
7 mechanism for DIMP.

8 **Q32. Do these models suggest that VEDO's focus should exclusively remain on BSCI**
9 **assets?**

10 A. The models certainly support a continued focus on BSCI assets, but the SMS risk register
11 and the distribution risk model have also identified other categories of pipeline assets that
12 may pose similar risks. VEDO believes that feedback gained from the risk model should
13 be considered in the context of designing and carrying out the Replacement Program.

14 **Q33. Has VEDO considered potential expansion or modification of its Replacement**
15 **Program?**

16 A. VEDO believes that feedback gained from the enhanced distribution risk model should be
17 considered in the context of designing and carrying out the Replacement Program. For
18 this reason, if modification or expansion of the scope of the Program appears necessary
19 and appropriate before the end of 2023, VEDO proposes that such a request should be
20 permitted, and that the proposed extension through 2023 not be considered to foreclose a
21 modification or expansion of the scope of the Replacement Program before that time.
22 VEDO would discuss any proposed modification or expansion of the Program with
23 Staff before submission, and any such request would require additional Commission
24 approval.

1 **Q34. Will VEDO continue to identify cost savings resulting from its Replacement**
2 **Program?**

3 A. Yes. VEDO will continue to reflect a level of cost savings resulting from its Replacement
4 Program that will reduce the costs recoverable in the DRR. This cost savings proposal is
5 discussed further in the testimonies of Witnesses Vyvoda and Swiz.

6
7 **IV. ONGOING COMPLIANCE WITH FEDERAL PIPELINE SAFETY**
8 **REGULATIONS**

9 **Q35. Has PHMSA issued new pipeline safety regulations since VEDO's last base rate**
10 **case?**

11 A. Yes. PHMSA has issued regulations that increase operator's pipeline safety compliance
12 requirements. Among regulations released are increased requirements to:

- 13 • expand the use of excess flow valves beyond single family residences;
- 14 • increase workforce training and operator training requirements;
- 15 • implement integrity inspections for farm taps; and
- 16 • implement an underground natural gas storage safety program.

17 While not all apply to VEDO's specific circumstances, many of the newly issued
18 regulations continue to have significant impact on VEDO's compliance plan. VEDO is
19 currently evaluating the new requirements and the actions necessary in order to achieve
20 compliance. Moreover, this level of enhanced pipeline safety oversight and compliance
21 demonstrates that PHMSA is clearly focused on continuing to improve the performance
22 of gas delivery systems.

1 **Q36. Does the Company expect that PHMSA will implement new regulations that will**
2 **likely impact VEDO's ongoing costs and expenses associated with pipeline safety**
3 **programs?**

4 A. Yes. VEDO continues to monitor the notices of proposed rulemakings (NOPRs) from
5 PHMSA and understands that PHMSA intends to increase the regulatory requirements
6 around pipeline safety in response to industry events, NTSB recommendations and
7 findings and the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011.
8 PHMSA has begun a series of workshops and engagement with the Gas Pipeline
9 Advisory Committee (GPAC) that will address some specific areas of pipeline safety.
10 GPAC advises PHMSA on the technical feasibility, reasonableness, cost-effectiveness,
11 and practicability of proposed natural gas pipeline safety standards. The committee is
12 comprised of members evenly divided among federal and state governments, the
13 regulated industry and the general public. These workshops include Public Awareness,
14 Safety Management Systems, Integrity Verification Process, expansion of Integrity
15 Management requirements, DIMP, and safety of underground storage assets. VEDO
16 actively participates in these workshops and task forces to comment on proposed
17 regulations, along with others in industry, and to monitor the progress of these
18 developing regulations.

19 **Q37. Does VEDO believe that increased obligations will be limited to new regulations?**

20 A. Not necessarily. PHMSA has communicated to the industry its intent to increase the
21 stringency of enforcement requirements and penalties of existing regulations, and this has
22 already been evidenced through the increased audit frequencies and durations of
23 operator's pipeline safety programs. PHMSA has draft rules in progress for the Safety of
24 Gas Transmission and Gathering Lines and others impacting operators' integrity
25 management programs.

1 **Q38. Given the continued evolution of VEDO's DIMP and TIMP initiatives, has VEDO**
2 **evaluated the level of O&M necessary to continue to meet the requirements of**
3 **federal pipeline safety regulations and to reliably operate the system?**

4 A. Yes. VEDO has considered the activities required to continue to implement its TIMP,
5 DIMP and SMS activities and the associated level of costs, and based on this
6 determination has adjusted the test year expenses in this proceeding to provide the
7 necessary cost recovery. This is discussed in detail in the testimony of Witnesses Vyvoda
8 and Swiz.

9 **Q39. Is PHMSA likely to implement new regulations that will impact VEDO's future**
10 **investments and O&M requirements related to its pipeline infrastructure?**

11 A. Yes. Similar to how the proposed new regulations discussed above impact VEDO's
12 O&M activities, these regulations will impact VEDO's need to invest in the replacement
13 or upgrade of its infrastructure, as well as increase operating and maintenance expenses
14 to execute new or modified compliance programs to comply with pipeline safety
15 regulations.

16 **Q40. Does PHMSA have any draft regulations in process?**

17 A. Yes. At this time, PHMSA is in the process of drafting:
18 • the "Safety of Gas Transmission and Gathering Lines" rule, which will include
19 regulations to address expanded integrity management requirements;
20 • the "Safety of Underground Natural Gas Storage" final rule; and
21 • other miscellaneous code changes to address a variety of issues.

22 **Q41. Does VEDO believe these new pipeline safety regulations will drive future**
23 **investments in pipeline infrastructure, as well as increase operating costs?**

24 A. Yes. PHMSA has already published a draft rule, "Pipeline Safety: Safety of Gas
25 Transmission and Gathering Lines" (the New Transmission Rule), that greatly expands
26 the pipeline safety and integrity requirements, including the expansion of high

1 consequence areas (HCAs) and resulting additional integrity assessment requirements,
2 additional stringency on the data elements and quality required to operate and identify
3 risks to the system, records quality to support maximum allowable operating pressures
4 (MAOPs), and more frequent corrosion system and coating condition assessments.
5 VEDO believes that these new regulations, along with the existing TIMP and DIMP
6 regulations and increased PHMSA guidance and enforcement, will require investment in
7 infrastructure modifications to allow for the execution of additional operations and
8 maintenance requirements and to address specific threats to the pipeline system.
9 Examples include the modification of transmission pipelines to allow for expanded
10 integrity assessments; the replacement of certain high risk and obsolete distribution
11 assets, such as service lines and older steel pipelines, to address mechanical coupling
12 failures; and incremental surveys on, or replacement of, vintage plastic pipelines, and
13 obsolete valves and regulators.

14 **Q42. If these rules are adopted, how does VEDO expect to address the impact of**
15 **expanded compliance requirements?**

16 A. The rules have been delayed beyond the originally anticipated issuance date of late 2017
17 and PHMSA continues to prioritize their finalization by resolving incongruences with
18 industry and pipeline safety experts through the Gas Pipeline Advisory Committee
19 (GPAC) meetings held in 2017 and scheduled throughout 2018. Therefore, it is expected
20 that PHMSA will publish the New Transmission Rule in 2019 with an implementation
21 timeline of 2020. Once issued, VEDO will face a deadline for implementation to modify
22 or develop its compliance plan, similar to the original TIMP and DIMP implementations
23 and compliance plans, to build the programs to meet the new compliance requirements.
24 VEDO will continue to monitor the progress of the rule's development through the

American Gas Association pipeline safety and regulatory committees and by participating in the GPAC meetings. PHMSA has additional draft rules in development that follow in priority to the New Transmission Rule, and once published, will focus their attention to finalize those drafts as well. Those rules include enhancements to pipeline safety regulations for plastic distribution mains and the issuance of a final storage field integrity rule.

Q43. How does VEDO believe these new and existing pipeline safety regulations will impact future investments in pipeline infrastructure?

A. While specific details are not yet known, PHMSA has been collecting information in a number of areas, including mechanical-fitting failures, plastic-pipe failures, maximum allowable operating pressures, facility damage data, and cast iron inventory and replacement history. PHMSA's access to this expanded and improved data will likely factor into the pending regulations and enforcement actions. Given that these anticipated regulatory changes will have significant impacts on resource requirements by expanding the scope and nature of VEDO's TIMP and DIMP programs, the Company essentially knows that its current level of O&M reflected in this case will not be sufficient to support the level of activities that will be required to comply with the next set of safety regulations. VEDO will continue to evaluate the scope of its Replacement Program and Compliance Plan in comparison to the new regulatory requirements and will inform the Commission as changes are necessary to meet those requirements as new rules are issued.

Q44. How does VEDO plan to approach compliance while these new regulations are being finalized?

A. VEDO will continue to execute its compliance plan under the current strategy in alignment with the existing pipeline safety and integrity management regulations and best practices. Its integrity management programs are founded in the continuous improvement

1 principles and VEDO continues to complete the plan, do, check and adjust cycles to
2 manage and reduce risk to its gas assets. Critical to this cycle is the execution of VEDO's
3 DARR, specifically the implementation of VEDO's SMS and enhancement to risk
4 modeling and threat analysis. As VEDO's risk assessment and threat identification
5 process and quality and access to system information evolves, VEDO is able to
6 proactively identify and prioritize risks for mitigation and evaluate and monitor the
7 effectiveness of the mitigation activities in reducing the risk of failure in the system.
8 VEDO anticipates that as it completes risk assessment cycles with the enhanced
9 processes that it will further identify and support the need to implement additional
10 mitigation activities or adjust existing mitigation activities within its current compliance
11 plans.

12
13 **V. CONCLUSION**

14 **Q45. Does this conclude your testimony?**

15 A. Yes.

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Summary: Exhibit 6.0 - Direct Testimony of Ellis S. Redd electronically filed by Ms. Rebekah J. Glover on behalf of Vectren Energy Delivery of Ohio, Inc.