

**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Duke )  
Energy Ohio, Inc., for Approval of an )  
Alternative Rate Plan Pursuant to Section ) Case No. 14-1622-GA-ALT  
4929.05, Revised Code, for an Accelerated )  
Service Line Replacement Program. )

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**MERIT BRIEF OF DUKE ENERGY OHIO, INC.**

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December 9, 2015

## I. INTRODUCTION

Much of the nation's natural gas pipeline infrastructure was installed many decades ago and some of the infrastructure installed centuries ago.<sup>1</sup> Although this infrastructure continues to supply residential and commercial customers, some of it was constructed with material that is now obsolete. Maintaining the safety and reliability of this infrastructure is of utmost importance. A forerunner in the regulatory arena, the Public Utilities Commission of Ohio (Commission) has, for approaching two decades, encouraged the efficient and accelerated replacement of outdated natural gas infrastructure throughout Ohio. Notably, the Commission supported the proactive replacement of these obsolete pipes – both mains and service lines – long before and after there were federal directives specifically addressing such replacement. But those federal directives now exist. Indeed, the federal government has imposed upon local distribution companies regulations designed to ensure that infrastructure is fit for service. Further, the federal government has identified high-risk pipe and has urged state commissions to accelerate the replacement of such pipe in order to “ensure the safety of communities across the country.”<sup>2</sup>

Although Duke Energy Ohio has upgraded approximately 1,100 miles of cast iron and bare steel natural gas mains and approximately 116,000 service lines of similar age or composition under its accelerated main replacement program (AMRP), that program will conclude on December 31, 2015. And upon its conclusion, some obsolete, high-risk service lines will remain in the Company's delivery system, transporting natural gas to homes and businesses in southwest Ohio. These service lines need to be replaced – public safety demands it; the federal government directs it; the Commission both expects and accepts it. The Company thus seeks here approval of an accelerated service line replacement program (ASRP) to replace, in an

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<sup>1</sup> Duke Energy Ohio Exhibit 10 (Appendix C to Direct Testimony of Edward A. McGee, Call to Action), at pp. 34-36.

<sup>2</sup> Duke Energy Ohio Exhibit 10 (Appendix C to Direct Testimony of Edward A. McGee, Whitepaper), at pp. 1-33.

efficient and cost-effective manner, approximately 58,000 pre-1971 steel and other unprotected metallic service lines and to implement associated measures to ensure that its customers continue to be served by safe natural gas infrastructure.

## **II. DISCUSSION**

### **A. The federal government's oversight of natural gas pipelines is becoming more stringent, with increased regulation of local distribution companies and appeals for state collaboration.**

The formal regulation of natural gas pipelines occurred with the enactment of the Natural Gas Pipeline Safety Act in 1968, which authorized the U.S. Department of Transportation (DOT) to regulate the pipeline transportation of natural gas. Existing under the DOT, the Pipeline and Hazardous Materials Safety Administration (PHMSA) oversees the safety of gas pipelines and ensures compliance with critical safety rules. PHMSA has, over time, promulgated various regulations intended to improve the safety of the nation's natural gas system. For example, operator qualification regulations took effect in 1999 and transmission integrity management rules in 2003.<sup>3</sup> But PHMSA did not limit its focus to the integrity of higher pressure, largely interstate transmission pipelines. Rather, in 2009, it enacted regulations aimed at ensuring distribution integrity.<sup>4</sup>

Under PHMSA's distribution integrity requirements, which took effect in 2011, local distribution companies such as Duke Energy Ohio are obligated to develop and implement a distribution integrity management program, or DIMP.<sup>5</sup> And under the regulations, the DIMP must contain procedures related to:

- Knowledge – understand the system based upon reasonably available information and implementing a plan to gathering additional information through normal activities.

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<sup>3</sup> 49 C.F.R. 192.805 and 49 C.F.R. 911.

<sup>4</sup> 49 C.F.R. 192.1001, *et seq.* (commonly referred to as Subpart P).

<sup>5</sup> 49 C.F.R. 192.1005.

- Identifying Threats – consider known threats to the system, including but not limited to corrosion, and identify both existing and potential threats.
- Assessing the risks – evaluate each identified risk to the distribution system and rank them.
- Addressing the risks – implement measures to reduce the risks on the system.
- Metrics – develop performance measures, monitor results, and evaluate effectiveness.
- Ongoing assessment – conduct periodic evaluations to assess risks and threats as well as the program.
- Reporting – report results.<sup>6</sup>

PHMSA regulations, including DIMP regulations, contemplate accelerated risk reduction.<sup>7</sup> And had there been any doubt as to that fact, the federal government decisively confirmed otherwise.

On September 9, 2010, a thirty-inch transmission line, which had been installed in 1956, ruptured in San Bruno, California. Just four months later, a gas main, initially installed in the 1920's, ruptured in Philadelphia, Pennsylvania and, the following month, an 83-three-year-old cast iron main ruptured in Allentown, Pennsylvania.<sup>8</sup> As PHMSA's administrator at the time recognized, these accidents "show the terrible loss of life and property that can occur without adequate attention to the integrity of pipeline infrastructure."<sup>9</sup> PHMSA, in coordination with the DOT, thus set about to ensure that proper attention was given.

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<sup>6</sup> 49 C.F.R. 192.1007.

<sup>7</sup> Duke Energy Ohio Exhibit 14 (Application of Columbia Gas of Ohio, Inc.); Tr. III, pp. 571-574.

<sup>8</sup> Duke Energy Ohio Exhibit 10 at pp. 5-6.

<sup>9</sup> *Id.*, pg. 2.

In April 2011, having recognized the hidden dangers in the natural gas industry's infrastructure,<sup>10</sup> then Secretary of Transportation Ray LaHood issued a Call to Action to utility regulators, pipeline operators, technical experts, and the public. Therein, Secretary LaHood shared his plan for the accelerated rehabilitation, repair, and replacement of "high-risk pipeline infrastructure and to requalify that infrastructure as fit for service."<sup>11</sup> He further committed to engaging "pipeline safety stakeholders in the process to systematically address parts of the pipeline infrastructure that need attention, and ensure that Americans remain confident in the safety of their families, their homes, and their communities."<sup>12</sup> In addition to urging collaboration among affected stakeholders to "step up efforts to identify high-risk pipelines and ensure that they are repaired or replaced,"<sup>13</sup> Secretary LaHood also asked Congress to increase penalties for violations, further confirming the gravity of his plan.

In coordination with Secretary LaHood, PHMSA initiated separate efforts and urged the National Association of Regulatory Utility Commissioners to recommend "accelerating work on...high-risk intrastate gas infrastructure."<sup>14</sup> It called upon pipeline operators to "quickly repair or replace sections [of pipes] in poor condition."<sup>15</sup>

Critical to the federal government's Call to Action is the definition of high-risk pipe. As PHMSA declared in 2011, the pipe for which immediate attention and action has been requested is that which is no longer fit for service and includes:

- Cast iron gas mains and service lines, which are prone to failure as a result of graphitization or brittleness.

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<sup>10</sup> Tr. II, at pg. 290. ("...[T]he purpose of the Call to Action was a fear that federal authorities had come to that there were hidden dangers in the natural gas industry's infrastructure that people were just discovering, and this Call to Action was directed against any type of hidden danger...")

<sup>11</sup> Duke Energy Ohio Exhibit 10, at pg. 35.

<sup>12</sup> *Id.*

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*, at pp. 5-6.

<sup>15</sup> *Id.*, at pg. 36.

- Certain vintages of plastic pipe that are susceptible to premature failures as a result of brittle-like cracking.
- Mechanical coupling installations.
- Pipelines lacking adequate construction records or assessment results to verify their integrity.
- Bare steel pipe without adequate corrosion control and copper piping, which are more susceptible to failure.
- Older pipe, which is vulnerable to failure from time-dependent forces, like corrosion, stress corrosion cracking, settlement, or cyclic fatigue.<sup>16</sup>

Service lines, buried in front yards and adjacent to occupied structures, are included in this definition of high-risk pipe.<sup>17</sup>

**B. The Commission is a forerunner in ensuring natural gas pipeline safety.**

The natural gas distribution system in Ohio is similar to that of much of the nation's. Some of the infrastructure is very old, comprised of what is now obsolete material. The infrastructure may be buried in front yards, adjacent to homes, and is hidden from plain view such that its condition is not readily observable. The Commission undoubtedly appreciates the threats facing Ohio's natural gas delivery system and has not hesitated to confront them.

In fact, years before the federal government's heightened focus on pipeline integrity, the Commission supported the accelerated removal of natural gas mains and service lines that posed a risk to public safety. The first such support came in Duke Energy Ohio's AMRP – a program implemented in 2000 to replace over 1,100 miles of cast iron and bare steel mains and associated metallic service lines so as to improve the safety and reliability of the system.<sup>18</sup> Significantly, the

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<sup>16</sup> Duke Energy Ohio Exhibit 10, at pg. 5.

<sup>17</sup> See Tr. II, at pp. 280-281.

<sup>18</sup> Duke Energy Ohio Exhibit 6 (Direct Testimony of Gary J. Hebbeler) at pg. 5. *See also, In the Matter of the Application of The Cincinnati Gas & Electric Company for an Increase in Rates*, Case No. 01-1228-GA-AIR, *et al.*, Opinion and Order, at pg. 4 (May 30, 2002).

service lines replaced as part of the AMRP meet the current definition of high-risk pipe. They are older service lines or their composition is of an unprotected metallic material.<sup>19</sup>

The Company's AMRP has undeniably been a success. In completing the program this year, on time and on budget, Duke Energy Ohio has experienced declining leak rates on its mains,<sup>20</sup> thus reducing the overall risk as measured by the DIMP. It has enabled benefits for its customers and the public at large.<sup>21</sup> But the AMRP's success is further evident in the fact that it has been fundamentally replicated throughout Ohio. The state's other local distribution companies have more recently implemented Commission-approved accelerated replacement programs, undertaking the faster removal of cast iron and bare steel mains and associated service lines.<sup>22</sup>

Importantly, neither Ohio's General Assembly nor the Commission has adopted a myopic view of gas pipeline integrity. When the legislature enacted natural gas pipeline safety laws pursuant to which the Commission bears the obligation of protecting the public safety,<sup>23</sup> it was not prescriptive. Rather, the General Assembly allowed the Commission to develop regulations that would protect the public. And the Commission did so, adopting the very regulations

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<sup>19</sup> Tr. III, at pg. 567; Duke Energy Ohio Exhibit 6, at pg. 3; Duke Energy Ohio Exhibit 9 (Direct Testimony of Edward A. McGee), Attachment EAM-2, at pg. 17.

<sup>20</sup> Duke Energy Ohio Exhibit 9, Attachment EAM-2, at pg. 18.

<sup>21</sup> Duke Energy Ohio Exhibit 6, at pp. 4-5.

<sup>22</sup> *In the Matter of Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Authority to Increase Rates for its Gas Distribution Service*, Case No. 07-829-GA-AIR, *et al.*, Opinion and Order, at pp. 12 and 32 (October 15, 2008)(approving stipulation that, *inter alia*, provided for the establishment of an accelerated pipeline infrastructure replacement program that would enhance service and safety); *In the Matter of the Application of Vectren Energy Delivery of Ohio, Inc., for Authority to Amend its Filed Tariffs to Increase the Rates and Charges for Gas Services and Related Matters*, Case No. 07-1080-GA-AIR, *et al.*, Opinion and Order, at pp. 5 and 19 (January 7, 2008)(approving stipulation that, *inter alia*, provided for the establishment of an accelerated distribution replacement rider); and *In the Matter of the Application of Columbia Gas of Ohio, Inc., for Authority to Amend Filed Tariffs to Increase Rates and Charges for Gas Distribution Service*, Case No. 08-72-GA-AIR, *et al.*, Opinion and Order, at pp. 5, 8, 13, and 26 (December 3, 2008)(approving stipulation that, *inter alia*, provided for the establishment of an accelerated infrastructure replacement program pursuant to which ratepayers would be benefitted and the public interest promoted; Commission further recognized the support for the program by those in the economic development sector given the replacement of aging infrastructure). *See also* Tr. III, pg. 547.

<sup>23</sup> R.C. 4905.91.

promulgated by PHMSA.<sup>24</sup> Thus, in addition to enforcing the federal regulations, the Commission has implemented those same regulations as the state's natural gas safety code.<sup>25</sup> Like its federal counterpart, the Commission has not limited the accelerated replacement of risky infrastructure to natural gas mains that transport larger quantities of gas. Rather, in authorizing their accelerated replacement, the Commission has acknowledged that service lines, which are closer to inhabited homes and other structures, pose a threat:

[W]hile service line leaks are generally not catastrophic, they are often times categorized as hazardous and can present significant safety hazards and do have the potential to cause catastrophic damage to customer's property and neighboring properties.<sup>26</sup>

Further, the Commission has not espoused a *reactive* approach to ensuring pipeline safety. Rather, the Commission has acknowledged "that minimization of unnecessary risk by systematically replacing a known safety threat is preferred to waiting for an imminent safety threat."<sup>27</sup> And its Staff has echoed that sentiment, admitting that customers benefit from the accelerated replacement of aging infrastructure and that this enhances public safety and improves operational efficiency."<sup>28</sup>

The General Assembly has legislatively supported the Commission in its authorization of focused, accelerated infrastructure replacement programs and corresponding recovery mechanisms via H.B. 95. Through that legislation, the General Assembly modified R.C. 4929.05 to expressly authorize a local distribution company to seek approval of an alternative rate plan

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<sup>24</sup> O.A.C. 4901:1-16-03.

<sup>25</sup> Tr. Vol. III, at pp. 526-527.

<sup>26</sup> *In the Matter of the Application of Columbia Gas of Ohio, Inc., for Approval of Tariffs to Recover, Through an Automatic Adjustment Clause, Costs Associated with the Establishment of an Infrastructure Replacement Program and for Approval of Certain Accounting Treatment*, Case No. 07-478-GA-UNC, *et al.*, Opinion and Order, at pg. 29 (April 9, 2008).

<sup>27</sup> *In the Matter of the Application of Vectren Energy Delivery of Ohio, Inc., for Approval of an Alternative Rate Plan for Continuation of its Distribution Replacement Rider*, Case No. 13-1571-GA-ALT, Opinion and Order, at pg. 16 (February 19, 2014). See also, *In the Matter of the Application of Columbia Gas of Ohio, Inc., for Approval to Change Accounting Methods*, Case No. 14-1615-GA-AAM, Finding and Order, at pg. 17 (December 17, 2014).

<sup>28</sup> Tr. III, at pg. 550.



outside of a base rate proceeding.<sup>29</sup> The General Assembly also revised the requirements for approval of such an alternative rate plan, removing, as a condition thereof, the determination of whether resulting rates were just and reasonable. The General Assembly instead directed the Commission to assess whether the plan was just and reasonable.<sup>30</sup>

**C. Duke Energy Ohio's focus on pipeline safety is commensurate with that of both PHMSA and the Commission.**

Duke Energy Ohio has been serving its natural gas customers for over 175 years.<sup>31</sup> Like its counterparts in the state, the Company's natural gas delivery system is largely out-of-sight, buried below city streets and in residential yards, and includes components that were installed decades ago. Integral to this system serving 420,000 natural gas customers are service lines, the composition of which may be steel, copper, cast iron, or plastic.<sup>32</sup> Certain of these materials, although standard and widely accepted as safe and reliable at the time of installation, are now considered obsolete.<sup>33</sup>

As noted above, about one decade before DIMP regulations even existed or PHMSA defined high-risk infrastructure, Duke Energy Ohio began the Commission-approved, systematic replacement of obsolete service lines as part of its AMRP in an effort to maintain the safety of its natural gas system.<sup>34</sup> Under the AMRP, the Company has annually replaced about 6,000 to 8,000 service lines, contributing to overall safety improvements and a historic decline in leak rates on its natural gas distribution system.<sup>35</sup> But the AMRP will conclude in a matter of weeks and,

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<sup>29</sup> R.C. 4929.05 (Eff. Sept. 17, 96); R.C. 4929.05, as amended by H.B. 95 (Eff. Sept. 9, 2011).

<sup>30</sup> R.C. 4929.05, as amended by H.B. 95 (Eff. Sept. 9, 2011). See Section (A)(1)-(3), *infra*, for a discussion of the three requirements for approval.

<sup>31</sup> Duke Energy Ohio Exhibit 2, (Direct Testimony of Charles R. Whitlock), at pg. 3.

<sup>32</sup> Tr. I, at pg. 125; Duke Energy Ohio Exhibit 6, at pg. 6.

<sup>33</sup> Duke Energy Ohio Exhibit 6, at pg. 5.

<sup>34</sup> Duke Energy Ohio Exhibit 9, Attachment EAM-2, at pg. 17. See also, Tr. III, pg. 550.

<sup>35</sup> Tr. I, at pg. 92; Duke Energy Ohio Exhibit 9, at pg. 9 and Attachment EAM-2, at pg. 18 (noting declining numbers of reported leaks on mains); Staff Exhibit 2a (noting declining numbers of leaks on main-to-curb service lines); and Duke Energy Ohio Exhibit 3 (Direct Testimony of John A. Hill, Jr.), at pg. 6.

absent an accelerated replacement initiative, so, too, will the current level of service line replacements.

Given the parameters of the AMRP, not all known obsolete service lines will have been replaced under that program. Rather, approximately 58,000 main-to-curb service lines that were installed before 1971, when cathodic protection was mandated, or are comprised of other unprotected metallic material will remain as part of the Company's natural gas delivery system. As confirmed in this proceeding, the Company's DIMP now demands additional attention to these service lines.

As previously discussed, PHMSA mandated the implementation of a DIMP by every local distribution company. These federal regulations serve to determine Duke Energy Ohio's DIMP and further provide the Company with direction in evaluating initiatives to reduce risks in the natural gas distribution system. Company witness John A. Hill, Jr., Duke Energy's Director of Gas Engineering, described the thorough process used to satisfy these federal requirements:

Duke Energy Ohio identifies, evaluates, and ranks risks in its distribution system and prioritizes measures to address these risks based on a relative risk model that takes into consideration threats to the system, as defined by CFR 192.1007, which threats include corrosion, natural forces, excavation damage, material, weld or joint failure, incorrect operation, and other concerns that would threaten the integrity of the pipeline. The method used to determine the risk in Duke Energy Ohio's distribution system is based upon the relative risk associated with repaired leaks. This risk is then aggregated for the entire system. The model is configured to utilize consequence values and a probability of one, for each individual leak repair. Risk is calculated for each repair, along with the inclusion of facility and location data. Individual leak risk is then summed up to develop risk scores at a system level. Threats with the highest total risk scores are then reviewed to determine appropriate measures to reduce and/or eliminate risk.<sup>36</sup>

The relative risk model incorporates factors that include pipe characteristics (*e.g.*, size, pressure, material) and proximity to structures.<sup>37</sup> As Mr. Hill explained, this risk modeling

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<sup>36</sup> Duke Energy Ohio Exhibit 3, at pp. 4-5.

<sup>37</sup> Duke Energy Ohio Exhibit 3, Attachment JAH-1, at pp. 2-3.

indicates that the second highest relative risk to the Company's distribution system is corrosion leaks, with the majority of those leaks occurring on service lines.<sup>38</sup> In fact, the evidence in this proceeding confirms that almost 90 percent of the risk from corrosion is attributed to service lines.<sup>39</sup>

In appreciating the development, results, and implementation of the Company's DIMP, it is imperative to understand its purpose. PHMSA's regulations are not directed to leaks, but instead to identifying and mitigating risk. As such, the system risk evaluation undertaken by the Company is a process to evaluate the likelihood of threats to the integrity of the system.<sup>40</sup> It is not, nor should it be confused with, an evaluation to determine the highest of number incidents or number of leaks caused by a particular activity. Thus, although the threat or risk for corrosion is second only to third-party excavation under the Company's DIMP evaluation, that is not a direct correlation to the number of actual incidents experienced on the system by type. Indeed, the record in this proceeding unequivocally shows that, in each year since 2010, the annual number of incidents or leaks attributable to corrosion exceeded the number of incidents caused by third-party excavation damage.<sup>41</sup> Moreover, the record evidence further confirms that the number of incidents caused by third-party damage has, on average, been on the decline since 2003.<sup>42</sup> No party to this proceeding has challenged the risks included on the Company's DIMP or the fact that service line leaks due to corrosion are the second highest threat to the Duke Energy Ohio natural gas distribution system.

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<sup>38</sup> Duke Energy Ohio Exhibit 3, at pg. 12. *See also* pg. 7 ("the continued leaks related to corrosion (mainly copper services) place corrosion as the second highest threat").

<sup>39</sup> Tr. I, at pp. 97-98.

<sup>40</sup> Duke Energy Ohio Exhibit 1 (Application), at pg. 4.

<sup>41</sup> Duke Energy Ohio Exhibit 3, at pg. 14.

<sup>42</sup> *Id.*

The risk from obsolete, unprotected service lines is real. Unprotected metallic pipe is subject to corrosion,<sup>43</sup> which cannot be reversed or suspended.<sup>44</sup> Cast iron is subject to cracking and breaking and is influenced by large temperature deviations and ground movement.<sup>45</sup> The proximity of service lines to inhabited structures creates unique considerations. As Mr. Hill explained:

Service lines operate at the same pressure as gas mains and are generally located closer in proximity to customers' premises. Although actual incidents of catastrophic failures attributed to service lines may be fewer than those associated with natural gas mains, there is still a possibility of damage and risk to life and property in the event of a catastrophic failure.<sup>46</sup>

Edward A. McGee, an expert in the natural gas industry, further confirmed without opposition that risks on service line are actually greater than risks on mains in five critical areas:

- There are more service line leaks in the Duke Energy Ohio service territory.
- Service lines have higher numbers of hazardous leaks.
- Service line leaks are closer to buildings and their occupants.
- Some service lines have incomplete records on age and composition.
- Service lines have thinner pipe walls, making them more susceptible to corrosion pits penetrating through the wall.<sup>47</sup>

Mr. McGee echoed the concerns of Mr. Hill insofar as the location of service lines is concerned. As he observed:

Services are attached directly to homes and businesses such as hospitals, nursing homes, places of worship, shopping malls, or movie theaters and therefore, in my mind, pose an even greater potential for harm if a catastrophic failure occurs. The risk posed by the failure of these services not only affects Company employees

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<sup>43</sup> Duke Energy Ohio Exhibit 6, at pg. 7.

<sup>44</sup> Duke Energy Ohio Exhibit 9, at pg. 4.

<sup>45</sup> Duke Energy Ohio Exhibit 6, at pg. 7.

<sup>46</sup> Duke Energy Ohio Exhibit 3, at pg. 8.

<sup>47</sup> Duke Energy Ohio Exhibit 9, at pg. 5.

working on the system, but also first responders (fire/police departments), families, and the unsuspecting public.<sup>48</sup>

As stated above, DIMP regulations focus on risk. But leak rates are indicia of a problem.<sup>49</sup> And as the uncontroverted evidence in this proceeding confirms, leaks in the Duke Energy Ohio service territory are increasing on the curb-to-meter segments of service lines, which is the segment closest to structures.<sup>50</sup> The Company's DIMP analysis corroborates this risk presented by pre-1971 and other unprotected metallic service lines and Duke Energy Ohio is thus obligated under federal regulations to mitigate the risk. Currently, the Company uses a multi-faceted approach, which includes the Company's annual, accelerated replacement of non-leaking service lines under the AMRP. On a much smaller scale, the Company has been replacing, on a proactive basis and outside its AMRP, a small number of pre-1971 or other unprotected metallic service lines.<sup>51</sup> Between 2012 and 2014, Duke Energy Ohio annually replaced 200 high-risk service lines and, in 2015, increased that number to 1,000.<sup>52</sup> Additionally and also outside of the proactive AMRP, Duke Energy has, and continues to, replace obsolete or high-risk service lines *after* they have been discovered to be leaking.<sup>53</sup> Collectively, these approaches have resulted in an overall decline in service line leaks, but leaks due to corrosion and material and welds remain elevated.<sup>54</sup> But the status quo as of January 1, 2016, is not a viable option.

Based upon the experiences of Duke Energy's Gas Operations and absent an accelerated replacement program, the Company expects the service line leak rates to *increase* with the

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<sup>48</sup> *Id.*, at pg. 16.

<sup>49</sup> Tr. II, at pg. 291.

<sup>50</sup> Duke Energy Ohio Exhibit 9, at pg. 5. *See also*, Duke Energy Ohio Exhibit 4.

<sup>51</sup> Duke Energy Ohio Exhibit 2, at pg. 10.

<sup>52</sup> *Id.* and Tr. I, at pp. 8-9.

<sup>53</sup> Duke Energy Ohio Exhibit 1, at pg. 5.

<sup>54</sup> Duke Energy Ohio Exhibit 9, Attachment EAM-2, at pg. 24. *See also*, Duke Energy Ohio Exhibit 4 (indicating that leak rates on service lines due to corrosion increased in 2014 as compared to 2012).

conclusion of the AMRP,<sup>55</sup> which is probable where the number of proactively replaced service lines is significantly reduced or eliminated. Indeed, “the deterioration and leak rate is already starting to outpace the replacement rate.”<sup>56</sup> Moreover, reactively replacing failed service lines or replacing a small number of obsolete, high-risk service lines does not properly address the risk or satisfy federal regulation.<sup>57</sup> Finding and responding to leaks more quickly does not eliminate the risk and, further, cannot be reconciled with the federal and state regulators’ expectation of proactively replacing known threats.

The Company therefore intends,<sup>58</sup> in 2016, to begin the annual, accelerated replacement of 5,000 obsolete, high-risk service lines.<sup>59</sup> As explained by Charles R. Whitlock, Senior Vice President of Midwest Gas Operations for Duke Energy, if the Commission rejects the Company’s proposed ASRP, he will diligently pursue internal authority to proceed with the accelerated replacement of obsolete, high-risk service lines. Indeed, as Mr. Whitlock unequivocally committed, he will do what he can “to get the capital to replace service lines on an accelerated basis...because... the risks demand it.”<sup>60</sup> And to the extent Mr. Whitlock prevails, Duke Energy Ohio will undeniably file more frequent base rate cases.<sup>61</sup> But this scenario is not without repercussions. Absent approval of the ASRP, including its cost recovery mechanism, as proposed herein, the General Assembly’s intentions will have gone ignored. Further, more frequent rate cases will burden the resources of the Commission, the Company, and other stakeholders. The financial impact of prosecuting successive rate cases will be realized by all. Rate changes for customers will be both abrupt and recurrent.

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<sup>55</sup> Duke Energy Ohio Exhibit 1, at pg. 8.

<sup>56</sup> Duke Energy Ohio Exhibit 6, at pg. 12. *See also* Tr. I, pp. 102-103.

<sup>57</sup> Duke Energy Ohio Exhibit 6, at pg. 11.

<sup>58</sup> Tr. I, at pp. 14-15.

<sup>59</sup> Duke Energy Ohio Exhibit 2, at pg. 9.

<sup>60</sup> Tr. I, at pg. 40.

<sup>61</sup> Duke Energy Ohio Exhibit 2, at pp. 12-13.

The Company recognizes the impact that such successive base rate cases will have on its customers and it has thus pursued an alternative for mitigating that impact. This alternative is precisely what the General Assembly contemplated when it enacted H.B. 95. Importantly, that legislation modernized regulation by enhancing the provisions related to alternative rate regulation, thereby enabling a targeted focus on programs that benefit customers and the local distribution company and removing the necessity of expensive, protracted base rate proceedings. Consistent therewith, Duke Energy Ohio's proposed ASRP enables the accelerated removal of obsolete, high-risk service lines and the implementation of associated measures so that no customer in its service territory receives natural gas through obsolete, unprotected service lines that are more susceptible to failing. This proposal also includes near-commensurate cost recovery, thereby eliminating the financial impact to customers of successive base rate cases while achieving the legislators' expectations as reflected in Ohio law.

**D. The proposed ASRP reflects a deliberate approach to risk reduction and improving customer benefits.**

The Company's proposed ASRP is rooted in the public interest, intended to eliminate known risk in an efficient and cost-effective manner. It is consistent with Commission precedent, which encourages the accelerated, proactive removal of threats. And it is contemplated under state law, which authorizes alternative rate plans. The components of the ASRP are discussed here.

1. Replacement of 58,000 pre-1971 steel and other unprotected metallic service lines.

The core of the ASRP is the targeted replacement of high-risk main-to-curb and associated curb-to-meter nonprotected metallic service lines – steel service lines that were installed before 1971 and thus are not cathodically protected or that are otherwise comprised of

unprotected metallic material. Borrowing from the organized structure that contributed to the successful AMRP, Duke Energy Ohio will use objective criteria, such as operating pressure, material type, and year of installation, to assist in the prioritization of replacement work.<sup>62</sup> From there, services will be regionally grouped into modules, with the modules having the largest number of priority services placed at the top of the work queue.<sup>63</sup> Each module will identify the services to be replaced within a given community, thereby enabling the efficient deployment of resources. These modules of work will be completed using a combination of internal and external resources. To the extent contractors are engaged, work will be awarded based upon a competitive bid process.<sup>64</sup> And all work will be completed using industry standard equipment, materials, and design.<sup>65</sup>

The ASRP reflects a systematic approach to accelerating the replacement of both pre-1971 steel service lines and, also, other unprotected metallic service lines currently integrated into the Company's natural gas distribution system, through coordination with qualified, outside contractors and Company crews that will reduce overall program costs and minimize disruption to and outages for customers.

The Company has designed the ASRP such that it will be completed in ten years, at an estimated cost of \$320 million. Without the coordinated ASRP, including its recovery mechanism, customers will be exposed to abrupt rate increases to address the replacement of obsolete, high-risk service lines. Such rate increases will also include costs associated with ongoing, mandatory interior house-piping inspections related to meters, the relocation of which will not otherwise occur, and for the Company's adherence to records requirements under DIMP

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<sup>62</sup> Duke Energy Ohio Exhibit 6, at pg.15.

<sup>63</sup> *Id.*

<sup>64</sup> *Id.*

<sup>65</sup> *Id.*



regulations. It is reasonable to conclude that these financial impacts to customers would be significant.

2. Relocation of interior meters.

The ASRP also creates an opportunity, where possible and allowed, to efficiently and economically relocate natural gas meters that are currently inside a structure to a suitable external location, where such meters are associated with service lines being replaced under the ASRP.<sup>66</sup> By relocating these natural gas meters, the Company will be able to avoid some future costs associated with the operation and maintenance (O&M) of inside meters related to compliance with the mandatory inspections and surveys on inside jurisdictional piping. Specifically, as federal rules mandate triennial inspections on inside jurisdictional piping, the Company will be able to exclude from the scope of such inspections that inside piping associated with meters that have been relocated to an exterior location under the ASRP. As a result, the triennial inspections in the future will involve a lesser amount of indoor piping, allowing for the ability to perform those inspections using fewer hours of labor. Such costs are not currently included in the Company's base rates,<sup>67</sup> but will be included unless they are otherwise eliminated via the proposed ASRP.

In addition, relocating meters to an external location will substantially reduce customer inconvenience and will improve the customer's experience, as the Company will no longer have to enter a customer's premises to, among other things, conduct mandatory atmospheric corrosion inspections and leak surveys. Further incorporating this relocation activity into a larger, planned program is an economical approach. Indeed, the scale of the program will enable the efforts

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<sup>66</sup> *Id.* at pg. 8.

<sup>67</sup> Duke Energy Ohio Exhibit 5 (Direct Testimony of Peggy A. Laub), at pg. 4.

related to meter relocations to realize savings and avoid fragmented, expensive relocations in the future.

3. Reconnaissance efforts to identify unknown service lines.

Under its DIMP, Duke Energy Ohio must understand “its system based upon reasonably available information and [implement] a plan to [gather] additional information through normal activities.”<sup>68</sup> Consistent therewith, the Company knows that the data about its distribution system that is presently available is not comprehensive due to the fact that it does not currently own all service lines in its service territory. Therefore, as part of the ASRP, the Company will seek to identify information, including the material type of approximately 21,000 curb-to-meter service lines for which available data may be unreliable or incomplete. The reconnaissance effort will involve an initial records review and then, as necessary, physical visits to expose service lines and confirm their composition.<sup>69</sup> Once the analysis has been completed, Duke Energy Ohio will provide the results and proposed next steps to the Commission. Such an effort had not yet been undertaken at a time relevant to the Company’s last base rate case and, as a result, the costs are not now included in those base rates.<sup>70</sup>

4. Assuming ownership of service lines.

Consistent with the AMRP, Duke Energy Ohio proposes to assume ownership of the service lines replaced under the ASRP. The benefits to all stakeholders of having the utility own the lines instead of the customer have been acknowledged by the Commission, as indicated

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<sup>68</sup> 49 C.F.R. 192.1007(a)(3).

<sup>69</sup> Duke Energy Ohio Exhibit 6, at pg. 9.

<sup>70</sup> Duke Energy Ohio Exhibit 5, at pg. 4.

above.<sup>71</sup> This will yield a consistent result among customers and further “shift responsibility for maintenance and repair of service lines” to the Company.<sup>72</sup>

5. Enabling cost recovery via Rider ASRP.

In connection with the ASRP, Duke Energy Ohio is also seeking approval of Rider ASRP, which will allow the Company to track and recover the costs of this system improvement effort in a manner that is consistent with, but avoids the administrative and financial burden of, annual rate cases. This type of recovery mechanism is contemplated by the General Assembly and has been successfully employed in *every* accelerated natural gas infrastructure replacement program approved by the Commission.<sup>73</sup>

Specifically, the Company proposes here to provide the Commission, on an annual basis, with the following: (1) the proposed reconnaissance work for the coming year; (2) the proposed construction plans for the coming year; (3) the proposed meter relocation work for the coming year; (4) the actual service line construction results and corresponding costs for the prior year; (5) the actual meter relocation results and corresponding costs for the prior year; (6) the actual reconnaissance results and corresponding costs for the prior year; and (7) a calculation to derive

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<sup>71</sup> *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase Rates*, Case No. 07-589-GA-AIR, *et al.*, Opinion and Order, at pg. 16 (May 28, 2008)(“Duke’s ownership of customers service lines advances public interest and safety.”).

<sup>72</sup> *In the Matter of the Application of Columbia Gas of Ohio, Inc., for Approval of Tariffs to Recover, Through an Automatic Adjustment Clause, Costs Associated with the Establishment of an Infrastructure Replacement Program and for Approval of Certain Accounting Treatment*, Case No. 07-478-GA-UNC, *et al.*, Opinion and Order, pg. 29 (April 9, 2008).

<sup>73</sup> See e.g., *In the Matter of the Application of East Ohio Gas Company d/b/a Dominion East Ohio for Approval to Modify and Further Accelerate its Pipeline Infrastructure Replacement Program and to Recover the Associated Costs*, Case No. 11-2401-GA-ALT, Opinion and Order, at pp. 9-10 (August 3, 2011)(approving continuation of accelerated infrastructure replacement and program cost recovery via annual rider adjustments); *In the Matter of the Application of Columbia Gas of Ohio, Inc., for Approval of an Alternative Form of Regulation*, Case No. 11-5515-GA-ALT, Opinion and Order, at pp. 11-13 (November 28, 2012)(approving continuation of program that includes accelerated infrastructure replacement and program cost recovery via annual rider adjustments); and *In the Matter of the Application of Vectren Energy Delivery of Ohio, Inc., for Approval of an Alternative Rate Plan for Continuation of its Distribution Replacement Rider*, Case No. 13-1571-GA-ALT, Opinion and Order, at pp. 16-18 (February 19, 2014)(approving continuation of accelerated infrastructure replacement and annual recovery of program costs via Rider DDR, the results of which, among other things, enable “replacement to prevent degradation of aging infrastructure”).

a monthly customer charge. Company witness Gary J. Hebbeler, General Manager, Gas Field and System Operations for Duke Energy Ohio/Kentucky, details the capital expenditures in his Direct Testimony.<sup>74</sup> Duke Energy Ohio will apply these charges to customers' bills until the charges are updated for the following year.

The Company seeks initial Commission approval of Rider ASRP, set at zero. To establish the initial rates and the successive rates thereafter, Duke Energy Ohio proposes a process consistent with that used in respect of its Rider AMRP. Specifically, on December 1 of each year, the Company will submit a pre-filing notice, reflecting its intent to establish or adjust rates under Rider ASRP. The pre-filing notice will reflect actual costs incurred as of October 31 of that year and estimated costs for the balance of the year. An application will then be filed in the same docket by March 1 of the following year, identifying actual costs incurred in the prior year and the rates for inclusion in Rider ASRP. The Company further proposes that the updated rates be effective with the first billing cycle in May, while the initial Rider ASRP rate be effective May 1, 2016.<sup>75</sup>

Duke Energy Ohio further proposes that this process, along with an annual reconciliation and rider true-up, continue until the ASRP is fully integrated into base rates, with the final filing to be made in the year following full completion of the ASRP-related infrastructure replacement, as determined by the Company. Duke Energy Ohio proposes a 9.84 return on equity (ROE) in respect of Rider ASRP. This ROE is consistent with the Company's most recently approved ROE and its reasonableness confirmed by Duke Energy Ohio witness Roger A. Morin, Ph.D.<sup>76</sup>

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<sup>74</sup> Duke Energy Ohio Exhibit 6, at pg. 10.

<sup>75</sup> Duke Energy Ohio Exhibit 5, at pg. 5. The Company filed its first pre-filing notice applicable to its ASRP and Rider ASRP on December 1, 2015, under PUCO Case No. 15-1990-GA-RDR.

<sup>76</sup> Duke Energy Ohio Exhibit 5, at pg. 5; Duke Energy Ohio Exhibit 11 (Direct Testimony of Roger A. Morin, Ph.D.), at pg. 59.

Duke Energy Ohio also recognizes that the benefits afforded customers as a result of the ASRP will have a financial impact. This financial impact, which will predominately affect residential customers, will involve both capital and O&M costs as well as anticipated capital savings and, with regard only to meter relocations, the avoidance of future O&M costs. To balance these factors and in an effort to lessen the overall rate impact, Duke Energy Ohio proposes residential caps applicable to Rider ASRP in the amount of \$1 per month, per bill. Such caps are limited only to Rider ASRP and do not implicate any other rates or riders, whether currently in place or implemented in the future.<sup>77</sup> No party to this proceeding opposed the caps offered by the Company.<sup>78</sup>

**E. The proposed ASRP meets the requirements for approval.**

Pursuant to R.C. 4929.05, as amended by H.B. 95, the Commission *shall* authorize an alternative rate plan if the natural gas company has demonstrated the following three conditions:

- The company is in compliance with section 4905.35 of the Revised Code and is in substantial compliance with the policy of this state as specified in section 4929.02 of the Revised Code.
- The company is expected to be in substantial compliance with the policy of this state specified in section 4929.02 of the Revised Code after implementation of the alternative rate plan.
- The alternative rate plan is just and reasonable.

As the evidence in this proceeding confirms, the Company has demonstrated compliance with these conditions such that its proposed ASRP must be approved.

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<sup>77</sup> Duke Energy Ohio Exhibit 1, at pp. 11-12.

<sup>78</sup> OCC Exhibit 11 (Direct Testimony of Bruce M. Hayes), at pp. 4-5 (purpose of testimony is to address need for the proposed ASRP); OCC Exhibit 10 (Direct Testimony of Daniel J. Duann), at pg. 3 (purpose of testimony is to address ROE); OCC Exhibit 12 (Direct Testimony of James D. Williams), at pp. 3-4 (purpose of testimony and recommendations therein concern need for proposed ASRP and its pursuit outside of a base rate proceeding); Staff Exhibit 3 (Direct Testimony of Kerry Adkins), at pg. 3 (purpose of testimony is to support objections to the Staff Report).

1. Compliance with R.C. 4905.35

R.C. 4905.35 pertains to the prohibition against discrimination and imposes the following upon jurisdictional utilities:

(A) No public utility shall make or give any undue or unreasonable preference or advantage to any person, firm, corporation, or locality, or subject any person, firm, corporation, or locality to any undue or unreasonable prejudice or disadvantage.

(B)(1) A natural gas company that is a public utility shall offer its regulated services or goods to all similarly situated consumers, including persons with which it is affiliated or which it controls, under comparable terms and conditions.

(2) a natural gas company that is a public utility and that offers to a consumer a bundled service that includes both regulated and unregulated services or goods shall offer, on an unbundled basis, to that same consumer the regulated services or goods that would have been part of the bundled service. Those regulated services or goods shall be of the same quality as or better quality than, and shall be offered at the same price as or a better price than and under the same terms and conditions as or better terms and conditions than, they would have been had they been part of the company's bundled service.

(3) No natural gas company that is a public utility shall condition or limit the availability of any regulated services or goods, or condition the availability of a discounted rate or improved quality, price, term, or condition for any regulated services or goods, on the basis of the identity of the supplier of any other services or goods or on the purchase of any unregulated services or goods from the company.<sup>79</sup>

There is no dispute that Duke Energy Ohio is, today, in compliance with R.C. 4905.35. Indeed, the uncontroverted evidence in this proceeding confirms that Duke Energy Ohio does not engage in discriminatory conduct; nor does it afford any person or entity an undue or unreasonable preference or advantage. The terms and conditions of its Commission-approved tariffs pursuant to which the Company operates are applied uniformly and fairly.<sup>80</sup> Importantly and as discussed below, Duke Energy Ohio's ASRP is consistent with R.C. 4905.35 and, as such, Duke Energy Ohio will remain in compliance with this statutory provision upon approval of the ASRP.

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<sup>79</sup> R.C. 4905.35.

<sup>80</sup> Duke Energy Ohio Exhibit 1, at pg. 13.

The ASRP is intended to replace, on an accelerated basis, service lines that are obsolete, at-risk, and subject to corrosion. The service lines included in the ASRP possess the same characteristics as those service lines replaced under the Company's AMRP. That the scope of the AMRP did not enable replacement of a subset of these risky service lines does not mean that they should remain in place, buried near homes and subject to corrosion or ground forces. Significantly, as a result of the Company replacing these service lines under the ASRP, its customers will not be denied the benefit of modern, safe natural gas infrastructure simply because of their address. Further, as a result of the ASRP, the Company will work to eliminate a discrepancy that currently exists between customers in respect of service line ownership. Upon completion of the ASRP, the Company will own the majority of the service lines in its territory and will have identified for the Commission a protocol of addressing those service lines included in its reconnaissance efforts. The admitted benefits of the Company assuming ownership of service lines<sup>81</sup> will thus be more equally realized by Duke Energy Ohio's customers.

Additionally, as explained by Duke Energy Ohio witness Hebbeler, the Company will use competitive bidding processes to secure qualified resources to complete the ASRP, thereby eliminating any potential for undue advantages or disadvantages being realized.<sup>82</sup>

## 2. Compliance with R.C. 4929.02

As the Company has demonstrated in these proceedings, it is currently in substantial compliance with the policy of the state as codified in R.C. 4929.02.<sup>83</sup> Further, upon the Commission's approval of the ASRP, Duke Energy Ohio will remain in substantial compliance

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<sup>81</sup> See e.g., *In the Matter of the Application of Columbia Gas of Ohio, Inc., for Approval of Tariffs to Recover, through an Automatic Adjustment Clause, Costs Associated with the Establishment of an Infrastructure Replacement Program and for Approval of Certain Accounting Treatment*, Case No. 07-478-GA-UNC, Opinion and Order, at pg. 35 (April 9, 2008)(observing that change in responsibility will eliminate customer confusion); *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase Rates*, Case No. 07-589-GA-AIR, *et al.*, Opinion and Order, at pg. 16 (May 28, 2008)("Duke's ownership of customers service lines advances public interest and safety.").

<sup>82</sup> Duke Energy Ohio Exhibit 6, at pg. 15.

<sup>83</sup> Duke Energy Ohio Exhibit 1, at pg. 14; Duke Energy Ohio Exhibit 2, at pp. 2, 5, 7.

with state policy. Indeed, as the ASRP does not conflict with any aspects of state policy and, instead, advances many of them. As confirmed by Duke Energy Ohio, the ASRP promotes the availability of adequate, reliable, and reasonably priced service under R.C. 4929.02(A)(1) because, as Duke Energy Ohio replaces the pre-1971 steel and other unprotected metallic service lines, its distribution system will become safer and more reliable, and its services more reasonably priced due to anticipated capital savings. Furthermore, with the planned relocation of inside meters, the Company anticipates the elimination of future O&M costs. The ASRP reflects an innovative program for cost-effective supply-side services, as contemplated under R.C. 4929.02(A)(4) that, consistent with the intent behind H.B. 95, allows Duke Energy Ohio to replace infrastructure in an efficient and accelerated manner and to pass cost savings to customers at regular intervals outside of a series of frequent and potentially litigious rate cases. Consistent with R.C. 4929.02(A)(6), the ASRP will enable Duke Energy Ohio to support distributed generation, thereby recognizing the continuing emergence of competitive natural gas markets through the development and implementation of flexible regulatory treatment. The ASRP enables competition, as discussed in R.C. 4929.02(A)(8), in that there are no subsidies associated with the program. The policy objective of R.C. 4929.02(A)(10) is advanced through the ASRP in that the program will provide Duke Energy Ohio with the ability to upgrade its distribution system in an efficient manner, thereby yielding safer and more reliable service to customers.

### 3. The ASRP is Just and Reasonable

As the Commission has succinctly stated, “safety is not the sole basis for approval of an



application pursuant to R.C. 4929.05.”<sup>84</sup> Rather, as the General Assembly envisioned, the entirety of the plan – what it both enables and eliminates – must be considered. Here, the proposed ASRP, including Rider ASRP, is undeniably just and reasonable.

The proposed ASRP does concern safety – it is structured to protect Duke Energy Ohio’s customers and employees and the public at large from a known threat. That such a known threat has not recently culminated in a catastrophic incident is irrelevant. As PHMSA has declared and the Commission astutely observed, effective programs are needed to prevent incidents; “waiting for an imminent safety threat” is not advisable.<sup>85</sup>

As discussed above, the ASRP fulfills PHMSA’s expectation that high-risk natural gas infrastructure be replaced and adheres to the Ohio legislature’s mandate that the public safety be protected. And these objectives are met through a targeted replacement program that efficiently prioritizes work to be performed in an economical manner, either through internal labor or competitively bid external resources. The replacement also results in Duke Energy Ohio assuming ownership of the replaced services, removing from customers the obligations to coordinate replacement and to directly assume the financial obligations associated with same. The appropriateness of such a focused approach to accelerated infrastructure replacement is well established in Ohio, with the Commission having authorized such an approach for every local distribution company in the state.

The justness and reasonableness of the ASRP is further evident in fact that it enables the Company to mitigate cost impacts to customers through the reduction of interior inspections.

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<sup>84</sup> *In the Matter of the Application of Vectren Energy Delivery of Ohio, Inc., for Approval of an Alternative Rate Plan for Continuation of its Distribution Investment Rider*, Case No. 13-1571-GA-ALT, Opinion and Order, at pg. 16 (February 19, 2014). See also, *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval to Change Accounting Methods*, Case No. 14-1615-GA-AAM, Finding and Order, at pg. 17 (December 17, 2014).

<sup>85</sup> Duke Energy Ohio Exhibit 10, at pg. 2; *In the Matter of the Application of Vectren Energy Delivery of Ohio, Inc., for Approval of an Alternative Rate Plan for Continuation of its Distribution Investment Rider*, Case No. 13-1571-GA-ALT, Opinion and Order, at pg. 16 (February 19, 2014).

That is, by relocating interior meters to suitable outside locations, when such meters are encountered under the ASRP, Duke Energy Ohio will reduce the number of mandatory inspections it must complete. And, as a result, costs that would otherwise persistently be borne by customers will be eliminated.

The ASRP also allows for timely adherence to DIMP requirements through a focused assessment of curb-to-meter service lines, the records for which are incomplete due to the fact that the Company did not own these lines when they were installed.

Moreover, Rider ASRP allows for timely recovery of costs, with the financial impact to customers mitigated via rate caps and regular rider adjustments. It avoids the inevitable rate shock associated with rate cases, an impact compounded by the more frequent rate cases the Company would have to file in the absence of an ASRP.<sup>86</sup> And as rate cases consume significant resources on behalf of the Commission, the Company, and intervenors, this benefit cannot be trivialized.

### **III. CONCLUSION**

Pipeline safety regulations are focused on reducing risk – on understanding and assessing the system, identifying risks, and then addressing those risks. That a natural gas system may be safe today does not eliminate this obligation. Duke Energy Ohio has been systematically replacing service lines under its AMRP – service lines having the characteristics of high-risk pipe as defined by PHMSA. As not all such high-risk service lines will have been removed under the AMRP, Duke Energy Ohio must act to eliminate the risk these service lines create. And it has proposed its ASRP for this purpose. The Company respectfully requests that the Commission approve the ASRP and authorize Rider ASRP as detailed in the Company's verified application and the testimony in support thereof.

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<sup>86</sup> Duke Energy Ohio Exhibit 2, at pg. 13; Duke Energy Ohio Exhibit 5, at pg. 8.

Respectfully submitted,

DUKE ENERGY OHIO, INC.

Handwritten signature of Amy B. Spiller in blue ink, with the initials 'Jkr' written at the end.

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## CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of the foregoing was delivered via U.S. mail (postage prepaid), personal, or electronic mail delivery, on this the 9<sup>th</sup> day of December, 2015 to the parties listed below.

  
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