FILE

DUKE ENERGY OHIO EXHIBIT____

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Gas Rates.	)))	Case No. 12-1685-GA-AIR
In the Matter of the Application of Duke Energy Ohio, Inc., for Tariff Approval.	)))	Case No. 12-1686-GA-ATA
In the Matter of the Application of Duke Energy Ohio, Inc., for Approval of an Alternative Rate Plan for Gas Distribution Service.	))))	Case No. 12-1687-GA-ALT
In the Matter of the Application of Duke Energy Ohio, Inc., for Approval to Change Accounting Methods.	)))	Case No. 12-1688-GA-AAM

DIRECT TESTIMONY OF

GARY J. HEBBELER

ON BEHALF OF

DUKE ENERGY OHIO, INC.

_____ Management policies, practices, and organization

_____ Operating income

_____ Rate Base

_____ Allocations

_____ Rate of return

_____ Rates and tariffs

__X__ Other: Infrastructure Investment

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I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Gary J. Hebbeler, and my business address is 139 East Fourth Street, Cincinnati, Ohio 45202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Duke Energy Business Services LLC (DEBS) as General Manager, Gas Field and Systems Operations, for Duke Energy Ohio, Inc., (Duke Energy Ohio or Company) and Duke Energy Kentucky, Inc. (Duke Energy Kentucky). DEBS provides various administrative and other services to Duke Energy Ohio and other affiliated companies of Duke Energy Corporation (Duke Energy).

Q. PLEASE BRIEFLY SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I am a graduate of the University of Kentucky, where I obtained my Bachelor of Science in Civil Engineering. In 1994, I obtained my license as a Professional Engineer in the Commonwealth of Kentucky and, by reciprocity, later in the State of Ohio.

I began working for The Cincinnati Gas & Electric Company (CG&E), the predecessor to Duke Energy Ohio, in 1987 as an engineer in the Gas Engineering Department. I initially worked as a project engineer and was responsible for designing gas mains and water lines, coordinating projects with governmental agencies and consulting firms, calculating pipe capacity and stress, and evaluating company paving standards and designs. Until 1998, I worked for CG&E, and

later for Cinergy Services, Inc., both of which were subsidiaries of Cinergy Corp. I was Vice President for Michels Concrete Construction, Inc., during 1998 and returned to Cinergy Corp.'s Gas Engineering Department in 1999. In 2000, I was promoted to Manager, Contractor Construction. In this position, I helped design the Accelerated Main Replacement Program (AMRP). I also managed the construction activities for replacing the cast iron and bare steel pipe under the AMRP. In 2002, I was promoted to Manager, Gas Engineering. I was responsible for managing the engineering activities and the capital expenditures for Gas Operations in the gas distributions systems of Duke Energy Ohio and Duke Energy Kentucky. In 2006, I was promoted to General Manager, Gas Engineering. In addition to my continued responsibilities for gas engineering activities and capital expenditures, I was responsible for construction activities for the AMRP, street improvements, pressure improvements, and major projects. In September 2010, I was promoted to my current position of General Manager, Gas Field and Systems Operations.

Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AS GENERAL MANAGER, GAS FIELD AND SYSTEM OPERATIONS.

A. I am responsible for managing the construction, installation, operation, and maintenance of the natural gas distribution systems of Duke Energy Ohio and Duke Energy Kentucky. Approximately 1,000 Duke Energy and contractor personnel are involved in these activities on behalf of Duke Energy Ohio and Duke Energy Kentucky.

Q. HAVE YOU EVER TESTIFIED BEFORE THE PUBLIC UTILITIES COMMISION OF OHIO?

A. Yes. I have testified before the Public Utilities Commission of Ohio (Commission) on several occasions. Most recently, I filed testimony in Case No. 11-5809-GA-RDR, *et al.*

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THESE PROCEEDINGS?

A. The purpose of my testimony is to discuss Duke Energy Ohio's AMRP and Riser Replacement Program (RRP) and to support its request to reapprove Rider AMRP, as applicable to mains, service lines, and risers. I also propose expansion of the Company's highly successful AMRP program to cover additional infrastructure and detail the Company's proposal to implement a new replacement program for service lines. Through my testimony, I also describe the Company's new major infrastructure investments since our last general gas rate case and discuss the Company's Integrity Management Program. Finally, I explain the proposed change to the Company's existing tariff provisions concerning line extensions.

II. REAPPROVAL OF RIDER AMRP

Q. PLEASE EXPLAIN THE AMRP.

A. In order to improve the safety and reliability of the Company's natural gas distribution system, Duke Energy Ohio adopted the AMRP in 2000 to accelerate its replacement schedule for cast iron and bare steel mains and associated service lines. Construction under the AMRP began in 2001.

When the Company adopted this program, its cast iron pipe in service dated back to 1873 and its bare steel pipe in service dated back to 1884. Cast iron and bare steel pipe, however, are more prone to leaks than plastic and coated, cathodically protected steel, which are now the materials of choice for main construction throughout the United States. In 1971, the U.S. Department of Transportation (U.S. DOT) adopted regulations removing cast iron from its list of approved materials for new pipe construction.

Duke Energy Ohio adopted formal cast iron and bare steel main replacement programs in 1988 and 1989, respectively. The program developed by the Company was used in conjunction with a commercially available program, known as the Cast Iron Maintenance Optimization System (CIMOS®). These programs identified certain factors associated with cast iron and bare steel main activities, such as year installed, operating pressure, length of pipe, and number of prior activities. The programs then developed a ranking system that Duke Energy Ohio used to determine which sections of cast iron and bare steel main to replace. The in-house program is still being used to prioritize these types of pipe replacement projects.

Under the CIMOS® and the in-house program, Duke Energy Ohio was replacing the cast iron and bare steel mains on a replacement schedule that would have taken approximately 90 years to complete. By that time, the mains that Duke Energy Ohio would have been replacing would have been more than 200 years old.

Q. DID DUKE ENERGY OHIO OBTAIN AN INDEPENDENT INVESTIGATION RELATING TO THE AMRP?

A. Yes. Duke Energy Ohio performed a detailed review of its own operation and maintenance practices, including the leak rates for the different types of pipe material. In 2000, Duke Energy Ohio also retained Stone & Webster, an engineering firm, to perform an independent review of the background, operation, and maintenance of its cast iron and bare steel mains, including Duke Energy Ohio's CIMOS® and the Bare Steel Maintenance Optimization System (BSMOS®) programs, as well as the proposed AMRP. Stone & Webster performed the comprehensive study that was used in developing the AMRP.

Q. WHAT RECOMMENDATIONS DID STONE & WEBSTER MAKE?

A. Stone & Webster's ultimate recommendation, at page 10 of its report, was that Duke Energy Ohio should "become much more aggressive in replacing both [cast iron and bare steel] mains for safety and risk considerations." Stone & Webster based this conclusion on the leak rates for the various types of pipe and on Duke Energy Ohio's then-existing rate of cast iron and bare steel main replacement.

Q. DID DUKE ENERGY OHIO ADOPT THE AMRP?

A. Yes. As I mentioned previously, Duke Energy Ohio started the AMRP construction in 2001. The Commission approved a tracking mechanism known as Rider AMRP in its May 30, 2002, order in Case No. 01-1228-GA-AIR, *et al.*, and this rider allows Duke Energy Ohio to recover the costs related to the AMRP on a timely basis.

Q. DOES DUKE ENERGY OHIO SEEK COMMISSION REAPPROVAL FOR RIDER AMRP?

A. Yes. Duke Energy Ohio requests that the Commission reapprove Rider AMRP to enable Duke Energy Ohio to continue the AMRP. This will avoid any adverse impact on Duke Energy Ohio's financial condition, which would occur if Rider AMRP were not reapproved. Since the beginning of the AMRP, Duke Energy Ohio has efficiently executed the program. The Company's annual Rider AMRP filings have included the necessary cost information to allow the Commission to process these cases efficiently. Additionally, the Company has operated the program such that it is on schedule and at competitive rates. Duke Energy Ohio has maintained a replacement schedule that would allow it to complete the program in a timely manner.

Duke Energy Ohio has efficiently managed the program by awarding the construction contracts for the AMRP through an annual bidding process. This has allowed the Company to keep its costs at reasonable levels. I previously discussed the customer benefits resulting from the AMRP. I expect that customers will continue to realize these same types of benefits by continuing this program through 2015. Duke Energy Ohio therefore requests that the Commission reapprove the AMRP through 2015, and reapprove Rider AMRP until all investment is included in base rates, to allow for timely recovery of the remaining capital expenditures associated with the AMRP.

Q. PLEASE DISCUSS THE RESULTS OF THE AMRP TO DATE.

A. The AMRP has been quite successful in allowing Duke Energy Ohio to reduce the amount of cast iron and bare steel mains in its distribution system. This has resulted in substantial benefits to Duke Energy Ohio's customers and to the public at large.

Duke Energy Ohio's gas distribution system consists of approximately 5,537 miles of distribution mains. Prior to commencing the AMRP, Duke Energy Ohio had approximately 1,200 miles of cast iron and bare steel main in service. As reflected in the following table, Duke Energy Ohio has replaced approximately 941 miles of cast iron and bare steel mains since starting the AMRP construction in 2001:

Year	Miles Replaced
2001	70
2002	102
2003	103
2004	99
2005	99
2006	86
2007	80
2008	76
2009	80
2010	70
2011	76

Duke Energy Ohio has also replaced approximately 91,200 main-to-curb service lines. Duke Energy Ohio estimates that it has approximately 215 remaining miles of cast iron and bare steel mains, based upon Company mapping

records. According to Duke Energy Ohio's plant records, measured in terms of pipe length, 18 percent of its cast iron and bare steel mains still need to be replaced.

Q. WHY HAVE THE MILES OF MAIN REPLACED ON AN ANNUAL BASIS DECLINED SINCE 2005?

A. Duke Energy Ohio has managed to keep costs at the lowest possible levels because more than approximately 95 percent of the annual AMRP work is done using outside contractors selected through a competitive bidding process. The competitive bidding process allows Duke Energy Ohio to award contracts to the lowest and best bidder. The Company has made investments for the AMRP each year, consistent with the rate cap levels established by the Commission's May 30, 2002, Order in Case No. 01-1228-GA-AIR, *et al.*, and its May 28, 2008, Opinion and Order in Case No. 07-589-GA-AIR, *et al.*

There are three basic reasons why the number of miles Duke Energy Ohio can replace with this level of investment has declined recently. First, general inflation has prevented the Company from replacing the same number of miles of main with the same level of investment. As a corollary, costs for construction materials and labor have increased significantly since 2005. In my opinion, these cost increases result from other utilities adopting main and riser replacement programs similar to the AMRP and RRP, as described below, and also adopting integrity management programs in response to new gas pipeline safety regulations promulgated by the U.S. DOT.

Second, the Company adopted new installation procedures in 2006, in response to an incident in Middletown, Ohio, where a gas line had breached a sewer line. This circumstance was not discovered until a plumber augered out the clogged sewer line. The plumber's auger pierced the gas line and caused an explosion. Prior to this incident, Duke Energy Ohio relied on municipalities to provide records of where their sewer lines were located. After this incident, however, the Company's investigation revealed that some municipalities do not maintain reliable records of sewer locations. To promote the safety of the general public and Duke Energy Ohio's customers and employees, the Company changed its installation practices to locate the sewer lines before gas main installation and to make a video recording of the location of the sewers after the installation. This additional work allows the Company to confirm that no sewer line is breached during the gas main installation process. The Company also limited the situations where it will allow installation of curb-to-meter service lines using directional drilling. These new installation techniques have increased AMRP costs but safety compels the Company to follow these additional procedures.

Third, the Company is now replacing gas mains in more urban locations, where more of the gas lines tend to be located under paved surfaces. This increases the labor, material, and restoration costs necessary to replace the gas mains and to restore the construction site to an acceptable condition. In addition, Duke Energy Ohio is encountering more gas service lines in locations that have become unacceptable under regulations adopted subsequent to original installation. The U.S. DOT's Gas Pipeline Safety regulations require that gas

service lines be installed in locations that will not present safety hazards if a leak occurs. Relocating the new gas service lines to a different, accessible location often increases costs.

Q. PLEASE ELABORATE ON THE CUSTOMER AND PUBLIC BENEFITS RESULTING FROM THE AMRP.

A. The AMRP has been quite successful in allowing Duke Energy Ohio to reduce the amount of cast iron and bare steel mains in its distribution system, which reduction has resulted in substantial benefits to Duke Energy Ohio's customers and to the public at large.

Customers and the public at large benefit from the improved safety and reliability of Duke Energy Ohio's natural gas distribution service. One key safety measure of the AMRP's success is the leak rate on Duke Energy Ohio's gas distribution system. The incidence of leaks repaired annually has decreased significantly, from 6,223 in 2002 to 5,015 in 2011. In addition, the severity of reported leaks has been reduced. Customer outages resulting from water infiltration have also been reduced, thereby mitigating costly emergency repairs and minimizing inconvenience to customers.

The reduced incidence of leaks has also caused Duke Energy Ohio's maintenance accounts associated with leaks to decline from approximately $6.4 million at the beginning of the program to $3.9 million in 2011. To date, customers have realized approximately $18.9 million in maintenance savings through the AMRP. These maintenance savings have been returned to customers through the reduced test year operating and maintenance costs reflected in the

2007 rate case, Case No. 07-589-GA-AIR, *et al.*, and through the annual AMRP filings since that case. Additionally, the test year maintenance expense in this case reflects these lower maintenance costs in the revenue requirement sponsored by Duke Energy Ohio witness Peggy A. Laub in these proceedings. Customers also benefit from Rider AMRP because Duke Energy Ohio has not had the need to file frequent and costly general gas rate cases to recover its capital expenditures for the AMRP. The Commission has conducted annual Rider AMRP proceedings for the Company to update this tracking mechanism in an efficient and expeditious manner.

In addition to these significant benefits, Duke Energy Ohio has been able to coordinate certain construction activities with governmental agencies, thereby reducing costs and limiting the inconvenience to the public. By way of example, Duke Energy Ohio coordinates the replacement of natural gas facilities with governmental agencies' road improvement projects, where it is able to do so. It also provides a long-term construction schedule, which enables these agencies to identify those future projects that may benefit from a coordinated effort. The Company has also been able to better integrate the existing natural gas distribution system. Prior to starting the AMRP, Duke Energy Ohio's natural gas service territory included areas where pressures had been lowered to reduce leaks resulting from deteriorated facilities. This, in turn, resulted in the system being segregated. The AMRP has allowed Duke Energy Ohio to increase pressures without having to incur costs associated with the construction of pressure improvements.

Finally, Duke Energy Ohio assumes ownership of the curb-to-meter service lines when installing new service lines, replacing an existing service line, or renewing a riser. Given its expertise, as compared to the customer, Duke Energy Ohio is better positioned to gather data, analyze threats, prioritize the risk, and determine when to replace equipment proactively, before an incident occurs. This allows the Company to replace facilities in a systematic, orderly manner that is more efficient and less costly than sending a repair crew to a customer's location in response to a reported leak. In addition, this assumed ownership allows Duke Energy Ohio to implement a service line replacement program in conjunction with other programs, thus minimizing disruption and inconvenience for customers. Finally, Company ownership allows Duke Energy Ohio to capitalize the cost and spread the impact over a longer time period, thus mitigating the rate impact on its customers.

Q. HOW DOES DUKE ENERGY OHIO PLAN FOR CAST IRON AND BARE STEEL MAIN REPLACEMENT UNDER THE AMRP?

A. The AMRP is designed to replace the cast iron and bare steel, along with the associated metallic services in the system.

The AMRP consist of three types of projects: Modules, CIMOS® (currently using in-house system only), and street improvements. The Module work encompasses two- to five-mile replacement segments and is a proactive program to replace cast iron and bare steel. CIMOS® is a responsive program to replace the cast iron and bare steel in the system with the highest possibility of developing future incidents. Street improvement work involves replacing cast

iron and bare steel pipe as a result of projects initiated by governmental entities. In addition to replacing cast iron and bare steel mains, Duke Energy Ohio replaces associated service lines as part of the AMRP.

Q. DOES DUKE ENERGY OHIO REPLACE ANY PLASTIC PIPE UNDER THE AMRP?

A. Yes. Under the AMRP, Duke Energy Ohio replaces plastic main-to-curb services and short segments of plastic mains that the Company encounters while replacing the cast iron and bare steel mains.

Q. WHY DOES DUKE ENERGY OHIO REPLACE THIS PLASTIC PIPE AS PART OF THE AMRP?

A. Duke Energy Ohio has installed short segments of plastic mains and plastic main-to-curb services to repair leaks in cast iron or bare steel pipe. This occurred both before Duke Energy Ohio implemented the AMRP and, after implementing the AMRP, when a leak developed in the cast iron or bare steel pipe prior to scheduled replacement under the AMRP. When the Company replaces a large section of cast iron or bare steel main under the AMRP, it is more economical to replace the existing plastic main-to-curb services, and the short sections of plastic pipe, rather than to try to re-use them.

Q. DOES DUKE ENERGY OHIO REQUEST THAT THE COMMISSION TAKE ANY ACTION REGARDING HOW THESE PLASTIC MAIN-TO-CURB SERVICES AND SHORT SEGMENTS OF PLASTIC PIPE ARE TREATED UNDER RIDER AMRP?

A. Yes. If the Commission reapproves Rider AMRP, Duke Energy Ohio requests that the Commission again include language in its order that explicitly allows the Company to recover costs for plastic main-to-curb services and short segments of plastic pipe that it replaces as part of the AMRP. This will eliminate any possible confusion regarding whether these costs are recoverable under Rider AMRP.

Q. IS DUKE ENERGY OHIO PROPOSING TO INCLUDE ANY ADDITIONAL ACTIVITIES UNDER THE AMRP?

A. Yes. Under the AMRP, Duke Energy Ohio is proposing, where applicable and permissible, to relocate natural gas meters that are currently situated inside a building to a suitable external location. The meters to be relocated under this proposal are those associated with the services being replaced during the remainder of the AMRP.

Q. WHY IS DUKE ENERGY OHIO PROPOSING, AS PART OF THE AMRP, TO RELOCATE NATURAL GAS METERS THAT ARE CURRENTLY SITUATED INSIDE A BUILDING TO A SUITABLE EXTERNAL LOCATION?

A. In 1987, Duke Energy Ohio developed its own version of a distribution integrity management program in order to address its aging distribution infrastructure. This program was enhanced in 2000 through the implementation of the AMRP. The AMRP was a direct result of analyzing information, identifying threats, and prioritizing risks. The successful execution has reduced risk, increased safety, and increased system reliability while providing savings to customers.

Current federal natural gas safety regulations, including but not limited to the new Distribution Integrity Management Program (DIMP) rules, will require more stringent documentation and detailed data analysis to prioritize risks and analyze threats to Duke Energy Ohio's natural gas distribution system. The information gathered through the DIMP, along with circumstances occurring in natural gas systems across the country, may result in the implementation of remediation activities intended to enhance safe operating systems for natural gas delivery. By starting to relocate natural gas meters from inside a building to an acceptable outside location, Duke Energy Ohio will be positioned to avoid some costs associated with the operation and maintenance of inside meters and to reduce the costs of compliance with the mandatory inspections and surveys of such meters. In addition, relocating meters to an external location will substantially reduce customer inconvenience 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 intended to mitigate additional costs to customers. Finally, this proposed addition to the AMRP will allow Duke Energy Ohio to administer the program consistent with the proposed Accelerated Service Replacement Program (ASRP) that I discuss below.

Q. DOES DUKE ENERGY OHIO REQUEST THAT THE COMMISSION TAKE ANY ACTION REGARDING HOW THESE METER

RELOCATIONS FROM INSIDE A BUILDING TO A SUITABLE OUTSIDE LOCATION ARE TREATED UNDER RIDER AMRP?

A. Yes. If the Commission reapproves Rider AMRP, Duke Energy Ohio requests that the Commission include language in its order that explicitly allows the Company to recover costs for relocating the natural gas meters, where applicable and permissible, currently situated inside a building to a suitable external location for those services being replaced during the remainder of the AMRP. This will eliminate any possible confusion regarding whether these costs are recoverable under Rider AMRP.

Q. HOW MANY MILES OF CAST IRON AND BARE STEEL MAIN DOES DUKE ENERGY OHIO PLAN TO REPLACE UNDER THE AMRP DURING THE REMAINDER OF THE AMRP, AND WHAT IS THE PROJECTED COST?

A. From April 1, 2012, through December 31, 2015, Duke Energy Ohio plans to replace 215 miles of cast iron and bare steel mains, as well as main-to-curb and curb-to-meter services, at an estimated cost of $214 million, based on the 2012 average cost per mile. The costs associated with relocating the natural gas meters currently situated inside a building to a suitable external location, for those services being replaced during the remainder of the AMRP, have been included in this estimate. The additional cost related to the RRP will be discussed later in my testimony. Based upon the estimate submitted in February 2012 in Case No. 11-5809-GA-RDR, *et al.*, the 15-year project is expected to be completed below its overall, projected cost.

III. RISER REPLACEMENT

Q. PLEASE DISCUSS DUKE ENERGY OHIO'S REPLACEMENT OF GAS RISERS.

A. Duke Energy Ohio developed the Riser Optimization Program in 2004, to replace certain types of flexible risers. The flexible riser is a fitting that connects the service line to the meter assembly and this type of riser fitting is used for outside meters. One type of flexible riser fitting, the service head adapter (SHA) style riser, was determined to have a high propensity for leaks. In 2008, Duke Energy Ohio implemented the RRP to complete the replacement of all SHA risers by 2012. Based upon the original average cost to replace a riser under the RRP, the 4.5-year project is expected to be completed below overall, projected cost.

Q. PLEASE EXPLAIN THE RISER OPTIMIZATION PROGRAM.

A. The Riser Optimization Program is similar to the CIMOS® and the in-house program in that these programs identify criteria associated with past activities to develop a replacement program. In fact, some of the criteria, such as operating pressure, type of pipe material, and year of installation, are the same for all of the programs. Under the Riser Optimization Program, Duke Energy Ohio annually evaluates the activities associated with SHA risers to determine the number to be replaced. Duke Energy Ohio selects for replacement those risers that have similar factors to risers associated with a high incidence of leaks. The RRP is designed to methodically replace all field-assembled SHA risers in a designated location, thereby allowing the Company to coordinate the work of its outside contractors

and schedule the work more efficiently. This reduces the overall costs of the RRP and minimizes disruption and outages for customers.

Q. HOW MANY RISERS HAS DUKE ENERGY OHIO REPLACED UNDER THE RRP?

A. Duke Energy Ohio has replaced approximately 96,075 SHA risers since 2005. The Company anticipates that all such risers will be replaced by October 1, 2012, which is ahead of the scheduled requirement.

Q. WHAT APPROVALS DOES DUKE ENERGY OHIO REQUEST FROM THE COMMISSION RELATING TO RISER REPLACEMENT?

A. Duke Energy Ohio requests approval to recover the balance of riser replacement costs through Rider AMRP, to the extent not recovered through this rate case. The balance of the capital expense left to recover is estimated to be approximately $1 million.

IV. ACCELERATED SERVICE REPLACEMENT PROGRAM

Q. PLEASE EXPLAIN DUKE ENERGY OHIO'S PROPOSAL TO COMMENCE A NEW, ACCELERATED SERVICE REPLACEMENT PROGRAM.

A. As discussed above, the AMRP has been an extremely effective program, providing substantial improvements to the quality of service the Company is able to provide to its customers. Indeed, based on Duke Energy Ohio's historical incidents and leak trends over the last 12 years, it is undeniable that the AMRP has worked well to reduce incidents and main leaks repaired. Duke Energy Ohio correctly identified cast iron and bare steel mains as a threat and, since the

program's implementation in 2001, the main leaks over time have generally decreased. However, leaks on service lines have not similarly declined. Thus, in evaluating its distribution system, it has become apparent to Duke Energy Ohio that certain service lines should be similarly updated, on an accelerated basis, through the proposed ASRP.

Throughout its history, the natural gas industry has been primarily reactive. But, under new federal regulations, specifically the DIMP, the federal government is mandating that operators become more knowledgeable about their natural gas distribution systems and, then, prioritize and mitigate the risks in their systems. Metallic services are identified as a risk in Duke Energy Ohio's DIMP and, to mitigate this risk, Duke Energy Ohio needs to replace the pre-1971 coated steel service lines and unprotected metallic service lines on its distribution system. The AMRP has allowed the Company to start this necessary work. Under the AMRP, the Company has, to date, replaced approximately 91,200 service lines and it is replacing approximately 7,100 service lines per year. Currently, approximately 73,000 unprotected metallic service lines remain on the Duke Energy Ohio system. But the AMRP will not allow for the replacement of all of these remaining service lines and, upon completion of the AMRP in 2015, it is estimated that about 58,000 unprotected metallic service lines, or 14 percent of the system, would still have to be replaced. If Duke Energy Ohio were to continue with its current rate of replacement for service lines not captured by the AMRP, it would take over 100 years to replace these remaining 58,000 service lines, because replacements customarily occur only after reported leaks.

Consequently, absent other preemptive action, Duke Energy Ohio expects that the number of leaks on service lines will begin to increase upon completion of the AMRP.

Q. DOES DUKE ENERGY OHIO SEEK COMMISSION APPROVAL FOR RIDER ASRP?

A. Yes. To mitigate the threat of the metallic services, as identified in the DIMP, Duke Energy Ohio is proposing the ASRP. This program is similar to the Riser Optimization Program and the AMRP in that these programs similarly identify criteria associated with past activities in order to develop a replacement program. In fact, some of the criteria, such as operating pressure, type of material, and year of installation, are the same for all of the programs. The ASRP is designed to methodically replace unprotected metallic services in a designated location, thereby allowing the Company to coordinate work with its outside contractors and schedule work more efficiently. This coordination will reduce the overall costs of the ASRP and minimize disruption and outages for customers.

In prudently developing the scope of the ASRP, Duke Energy Ohio had to recognize two important factors. First, the Company could only consider, as reliable, main-to-curb data. This was because of the fact that, prior to the AMRP, Duke Energy Ohio did not own the curb-to-meter portions of the service lines. Thus, any data that the Company has on that portion of the lines would be incomplete and unreliable.

The second factor relates to regulations that protected steel piping. In 1971, regulations were promulgated to require all coated steel piping to be

cathodically protected. With reference to these regulations, the Company has reviewed the numbers of leaks on this type of pipe and has determined that cathodically protected service lines appear to be a low threat. And, because Duke Energy Ohio is not seeing a high enough leak rate on this category of piping, coated steel installed in or after 1971 is not encompassed by the ASRP.

Out of the Company's approximately 58,000 unprotected metallic service lines that will remain after the AMRP is complete, 75 percent of them are copper, 17 percent are coated steel (pre-1971), 6 percent are comprised of unknown material, and 2 percent are bare steel and cast iron. From the 1920s through the present, the Company has reported approximately 184,000 leaks on services, with approximately 144,000 of these leaks being on pre-1971 coated steel or unprotected metallic services. In other words, 78 percent of all leaks occurred on pre-1971 coated steel or unprotected metallic services. Of the reported leaks, 97 percent were on the main-to-curb portion or the curb-to-meter portion of the service line. In addition, Duke Energy Ohio has determined that 48 percent of the reported leaks were the result of corrosion, which affirms the need to replace metallic service lines that were not cathodically protected. The other causes for reportable leaks in Duke Energy Ohio's natural gas system were: other outside force damage (26 percent); material and welds (13 percent); excavation (6 percent); natural forces (5 percent); operations and other (1 percent); and equipment (less than 1 percent).

Due to the fact that leak rates are used as a comparison for the AMRP, the Company evaluated an annual leak rate for service lines, using the past five years

of data. With the AMRP, there was a leak rate of 1.3 leaks per mile for cast iron and bare steel mains and a leak rate of 0.05 leaks per mile for plastic and protected coated steel mains. Since service line leaks are different than main leaks, the Company evaluated the leak rates two different ways. The first methodology was to consider leaks per main mile, resulting in the concentration of leaks on service lines. This evaluation resulted in the following data:

Service Type	Leaks per Main Mile
Cast Iron	16.2
Bare Steel	9.4
Copper	2.9
Steel	2.6
Plastic	0.4

The second evaluation methodology was to look at leaks on service lines as leaks per service mile. In this approach, the Company assumed that service lines were all combined and determined the number of leaks that would be expected in a mile of this service. The following data was found:

Service Type	Leaks per Service Mile
Cast Iron	10.5
Bare Steel	6.1
Copper	1.9
Steel	1.7
Plastic	0.3

Given this information, it is apparent that the leaks per main mile on cast iron, bare steel, copper, and steel service lines are at least two times greater than the leak rates observed for main material at the start of the AMRP. In summary,

if implemented, the ASRP is expected to eliminate the potential for 78 percent of the Company's leaks by replacing 14 percent of the service lines.

Duke Energy Ohio has also evaluated the cost of the proposed ASRP in two different ways: comparing the ASRP to emergency repairs and to scheduled repairs. The first option calculated the cost to replace service lines under emergency conditions, concluding that it would cost the Company's customers approximately $361 million to replace all of the pre-1971 coated steel and unprotected metallic service lines. On the other hand, the total implementation cost for the ASRP would be $317 million, including a 20 percent contingency. Under the proposed ASRP, Duke Energy Ohio sees the potential to save customers $44 million.

Q. WILL DUKE ENERGY OHIO INCLUDE IN THE ASRP THE RELOCATION OF NATURAL GAS METERS CURRENTLY SITUATED INSIDE A BUILDING TO A SUITABLE EXTERNAL LOCATION?

A. Yes. Under the ASRP, Duke Energy Ohio is proposing, where applicable and permissible, to relocate natural gas meters currently situated inside a building to a suitable external location. The meters to be relocated under this proposal are those associated with the services being replaced under the ASRP.

Q. WHY DOES DUKE ENERGY OHIO PROPOSE TO RELOCATE NATURAL GAS METERS CURRENTLY SITUATED INSIDE A BUILDING TO A SUITABLE EXTERNAL LOCATION UNDER THE ASRP?

A. As I discussed above, Duke Energy Ohio developed its own version of a distribution integrity management program in 1987 to address its aging distribution infrastructure and that program was enhanced in 2000 through the implementation of the AMRP. As I also noted previously, current federal natural gas safety regulations, including but not limited to the new DIMP, will require more stringent documentation and detailed data analysis to prioritize risks and analyze threats in Duke Energy Ohio's natural gas distribution system. Relocation of these meters under the ASRP is critical for the same reasons I discussed with regard to relocation under the AMRP. In addition, continuing this effort under the ASRP will allow Duke Energy to administer this program in a manner consistent with the AMRP.

Q. DOES DUKE ENERGY OHIO REQUEST THAT THE COMMISSION TAKE ANY ACTION REGARDING HOW THESE METER RELOCATIONS FROM INSIDE A BUILDING TO A SUITABLE OUTSIDE LOCATION ARE TREATED UNDER RIDER ASRP?

A. Yes. If the Commission approves Rider ASRP, Duke Energy Ohio requests that the Commission include language in its order that explicitly allows the Company to recover costs for relocating the natural gas meters, where applicable and permissible, currently situated inside a building to a suitable external location for those services being replaced during the ASRP. This will eliminate any possible confusion regarding whether these costs are recoverable under Rider ASRP.

V. OTHER MAJOR INFRASTRUCTURE INVESTMENTS

Q. EXCLUDING THE AMRP, HAS DUKE ENERGY OHIO MADE ANY MAJOR INVESTMENTS IN INFRASTRUCTURE SINCE ITS LAST NATURAL GAS RATE CASE?

A. Yes. In 2008, Duke Energy Ohio completed the Bethel Project. This project involved the construction of a 17-mile, 12-inch diameter, 650-psig (pounds per square inch gauge) pipeline from Foster, Kentucky, to the east side of Bethel, Ohio. This pipeline is maintained, operated, and owned by Duke Energy Ohio and will be connected to the KO Transmission Company system. The Bethel Project pipeline was installed to replace the existing system crossing the Little Miami River, which, for safety and reliability reasons, needed to be taken out of service due to the changing course of the river. In addition, the existing natural gas pipelines could not meet the future projected demands within design parameters. Duke Energy Ohio required this system improvement in order to provide natural gas to meet customer demands.

VI. INTEGRITY MANAGEMENT PROGRAMS

Q. PLEASE EXPLAIN DUKE ENERGY OHIO'S INTEGRITY MANAGEMENT PROGRAMS.

A. Duke Energy Ohio developed its Transmission Integrity Management Program (TIMP) in response to federal legislation adopted in 2002 and accompanying regulations (Code of Federal Regulations 192.1001) issued by the U.S. DOT Office of Pipeline Safety. These regulations require operators of hazardous liquid pipelines and natural gas transmission pipelines to provide enhanced pipeline

safety inspection and testing activities for their facilities. The regulations require the hazardous liquid pipeline and natural gas transmission pipeline operators to develop a program to identify all heavily populated areas traversed by their pipelines, develop a baseline assessment plan, conduct periodic risk assessments, and implement certain maintenance procedures.

In response to the law and regulations, Duke Energy Ohio developed its TIMP in 2004, which is a comprehensive and systematic approach to maintain and improve safety of the Company's hazardous liquid and transmission pipeline system. The TIMP is comprised of five separate plans – Integrity Management Plan, Performance Plan, Communication Plan, Management of Change Plan, and Quality Control Plan – that provide the foundation for the program and include the processes and procedures necessary to comply with the 2002 law and regulations. The ongoing TIMP activities include: identifying high consequence areas; evaluating pipeline threats and conducting risk assessments for each covered pipeline segment; identifying and implementing additional preventive and mitigative measures; conducting integrity assessments through pressure testing or direct assessment methods; and remediating conditions found during integrity assessments.

Duke Energy Ohio developed its DIMP in 2011 in response to federal legislation adopted in 2010 and accompanying regulations (Code of Federal Regulations 192.1007) issued by the U.S. DOT Office of Pipeline Safety. These regulations require operators of natural gas distribution pipelines to develop and

implement an integrity management program that includes a written integrity management plan.

The DIMP, which became effective on August 2, 2011, is a comprehensive and systematic approach to maintain and improve the safety of the Company's distribution pipeline system. The DIMP is comprised of seven key elements: Knowledge of System; Indentify Threats; Evaluate and Rank Risks; Identify and Implement Measures to Address Risks; Measure Performance, Monitor Results, and Evaluate Effectiveness; Periodic Evaluation and Improvement; and Report Results. This information provides the foundation for the program and includes the processes and procedures necessary to comply with the laws and regulations. The ongoing DIMP activities for 2012 include: analyzing data; creating a Threat and Risk Matrix; evaluating pipeline threats; and submitting annual reports to document performance measures. The top six threats within DIMP remain corrosion on bare steel mains, graphitization on cast iron mains, corrosion on the metallic services associated with cast iron and bare steel mains, the field-assembled flexible riser, third-party damage associated with cross-bores, and pre-1971coated steel services and unprotected metallic services. Through the proposals that are made in these proceedings, Duke Energy Ohio is proactively addressing these primary threats.

VII. LINE EXTENSION MODIFICATIONS

Q. PLEASE DESCRIBE THE COMPANY'S CURRENT POLICIES WITH REGARD TO GAS LINE EXTENSIONS FOR INDIVIDUAL CUSTOMERS.

A. Under Duke Energy Ohio's tariff, Rider X, a line extension for an individual customer is provided without charge only where that extension is 100 feet or less. In situations where the extension would have to be longer than 100 feet, the Company may provide an extension without charge where the individual customer's monthly volume is anticipated to be in excess of the minimum use specified in the tariff under which service will be provided and the Company has existing adequate peak demand capabilities to serve the customer. If the applicable tariff does not contain a minimum use volume, then the monthly minimum bill (not including customer charges and the cost of purchased gas) must be 1.5 percent of the cost of the main extension. In addition, the customer must agree to receive service for a minimum term that will allow the Company to recover the cost of the extension.

Q. PLEASE EXPLAIN HOW THE COMPANY PROPOSES TO CHANGE THE EXISTING LINE EXTENSION POLICY.

A. For extensions of 100 feet or less, there would be no change. However, for extensions longer than 100 feet, Duke Energy Ohio proposes to allow an additional method by which the customer could receive a line extension at no charge. The new proposal is consistent with the approach currently available for customers located in New Joint Trench Subdivisions, whereby the Company will perform a net present value (NPV) analysis of the construction cost for an extension of the Company's approach and/or internal mains to serve the subdivision and the revenue to be received from each subdivision customer to be

connected to the new mains. Under the new proposal, a similar analysis would be applicable to an individual customer's extension.

Specifically, the Company is proposing to perform an NPV analysis of the construction cost to be incurred and the revenue to be received from an individual customer for a main extension in excess of 100 feet. If the NPV is positive, the Company will not charge the individual customer for the line extension. If the NPV is negative, the customer will be required to pay for the construction of the line extension in an amount equal to the negative NPV. Any payment made when the NPV is negative is eligible for refund due to subsequent connections under the existing plan.

For large commercial and industrial customers with process load (that is, load that is not related to space conditioning, lighting, service water heating, or ventilating of a building as it relates to human occupancy), Duke Energy Ohio may require a minimum customer usage commitment for a defined period of time not to exceed six years. This allows flexibility in offering minimum usage and contract duration terms to accommodate the differing usage capabilities and preferences of business customers, while maintaining a consistent cost recovery requirement based on a NPV analysis.

VIII. CONCLUSION

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.