

FILE

14

**BEFORE THE  
PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of	)	
The Cincinnati Gas & Electric	)	Case No. 01-1228-GA-AIR
Company for an Increase in Rates	)	

In the Matter of the Application of	)	
The Cincinnati Gas & Electric	)	Case No. 01-1539-GA-AAM
Company for Approval to Change	)	
Accounting Methods	)	

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**DIRECT TESTIMONY OF  
GARY J. HEBBELER  
ON BEHALF OF  
THE CINCINNATI GAS & ELECTRIC COMPANY**

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- ☒ Management policies, practices, and organization
- ☐ Operating income
- ☐ Rate base
- ☐ Allocations
- ☐ Rate of return
- ☐ Rates and tariffs
- ☒ Other (Cast Iron/Bare Steel Main Replacement Program)

February 8, 2005

**DIRECT TESTIMONY OF**

**GARY J. HEBBELER**

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1                                   **DIRECT TESTIMONY OF GARY J. HEBBELER**

2                                   **I.     INTRODUCTION AND PURPOSE**

3   **Q.     PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

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

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

7   A.     I am employed by Cinergy Services, Inc. (Cinergy Services), an affiliate of The  
8           Cincinnati Gas & Electric Company (CG&E), as a Manager, Gas Engineering.

9   **Q.     WHAT DUTIES AND RESPONSIBILITIES DO YOU HAVE IN YOUR**  
10       **CURRENT POSITION?**

11  A.     As a Manager, Gas Engineering, I manage the engineering activities and the  
12           capital expenditures for Gas Operations in the Cinergy gas system.

13  **Q.     PLEASE OUTLINE YOUR EDUCATIONAL BACKGROUND.**

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

18  **Q.     PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE.**

19  A.     I began working for CG&E in 1987 as an engineer in the Gas Engineering  
20           Department. My experience includes acting as project engineer. In that capacity  
21           I have analyzed plans, designed gas mains and water lines; coordinated projects  
22           with governmental agencies and consulting firms; monitored pipe calculations;  
23           stress calculations on buried pipes; evaluation of stresses on exposed pipelines

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1 and company paving standards and designs. I worked for CG&E, and later for  
2 Cinergy Services through 1998. I worked as Vice President for Michels Concrete  
3 Construction, Inc. during 1998 and returned to Cinergy's Gas Engineering  
4 Department in 1999. In 2000, I was promoted to Manager of Contractor  
5 Construction. My experience includes managing the construction activities for  
6 the replacement of cast iron/bare steel program, street improvements and a portion  
7 of gas only main extensions in the Cinergy gas system. In 2002, I was promoted  
8 to my current position of Manager of Gas Engineering.

9 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**  
10 **PROCEEDING?**

11 **A.** The purpose of my testimony is to explain the construction and management  
12 practices of CG&E as they relate to the Accelerated Main Replacement Program  
13 (AMRP) for construction activity during calendar year 2004.

14 **II. DESCRIPTION OF AMRP**

15 **Q. PLEASE GENERALLY DESCRIBE THE AMRP.**

16 **A.** The AMRP is designed to replace the cast iron and bare steel mains and metallic  
17 service lines on CG&E's distribution system on an accelerated basis. CG&E  
18 initiated this program in mid-2001. Cast iron and bare steel pipe is more  
19 susceptible to leaks and breaks than other types of pipe. Prior to this program,  
20 CG&E was replacing these mains on a schedule that would have taken CG&E  
21 over 70 years to complete. The service lines were customer-owned and customers  
22 generally only replaced the services when they leaked. Under the AMRP, CG&E  
23 will replace the mains in less than 20 years, and CG&E will also replace metallic

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1 service lines. In an Opinion and Order dated May 30, 2002 in this proceeding, the  
2 Commission approved an annually-adjusted cost recovery mechanism for the  
3 AMRP costs, known as Rider AMRP, Sheet No. 65.

4 **Q. PLEASE DESCRIBE THE PROGRESS CG&E HAS MADE IN**  
5 **INSTALLING NEW MAIN AND SERVICE LINES SINCE INITIATING**  
6 **THE AMRP.**

7 A. Prior to commencing the AMRP, CG&E had approximately 1,200 miles of cast  
8 iron and bare steel main in service. Under the AMRP, CG&E has replaced  
9 approximately 365.6 miles of main through the end of 2004.

10 **Q. PLEASE EXPLAIN HOW CG&E SELECTS WHICH MAINS TO**  
11 **REPLACE THROUGH THE AMRP.**

12 A. CG&E selects which mains to replace by using three general methodologies: (1)  
13 Cast Iron and Bare Steel Main Replacement module work; (2) the Cast Iron  
14 Maintenance Optimization System (CIMOS)® and Bare Steel Maintenance  
15 Optimization System (BSMOS)®; and (3) the street improvement program.

16 **Q. PLEASE EXPLAIN HOW CG&E SELECTS WHICH MAINS TO**  
17 **REPLACE FOR CAST IRON AND BARE STEEL MAIN REPLACEMENT**  
18 **MODULE WORK.**

19 A. Based on the operating history of the various types of cast iron and bare steel  
20 pipe, CG&E established the following prioritization for replacing the cast iron and  
21 bare steel mains: (1) cast iron intermediate pressure main with mechanical joints,  
22 installed after 1947; (2) bare steel standard pressure main; (3) cast iron  
23 intermediate pressure main with mechanical joints, installed in or before 1947; (4)

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1 cast iron medium pressure main; (5) bare steel intermediate pressure, medium  
2 pressure and 60-pound pressure main and feeder lines; (6) cast iron intermediate  
3 pressure main with bell and spigot joints, installed after 1947; (7) cast iron  
4 intermediate pressure main with bell and spigot joints, installed in or before 1947;  
5 (8) cast iron standard pressure main with mechanical joints; and (9) cast iron  
6 standard pressure main with bell and spigot joints. In the Cast Iron and Bare Steel  
7 Main Replacement module work, CG&E uses these replacement priorities to  
8 design a "module," which is a grouping of cast iron and/or bare steel main  
9 between two and five miles in total length, and located within the same  
10 geographic area. Approximately 84% of the cast iron and bare steel main that  
11 CG&E replaced under the AMRP in 2004 was done through such module work.

12 There are two principal benefits to using this module approach. First,  
13 CG&E is able to replace the cast iron and bare steel mains in a systematic manner  
14 where the specific types of main with the highest propensity for breaks and leaks  
15 are replaced at the earliest point in time. Second, this approach tends to keep  
16 costs low by capturing economies of scale, by using lower-cost directional drilling  
17 techniques and by avoiding frequent and costly re-mobilizing of construction  
18 equipment and work crews.

19 **Q. PLEASE EXPLAIN HOW CG&E SELECTS WHICH MAINS TO**  
20 **REPLACE USING THE CAST IRON MAINTENANCE OPTIMIZATION**  
21 **SYSTEM (CIMOS)® AND BARE STEEL MAINTENANCE**  
22 **OPTIMIZATION SYSTEM (BSMOS)® METHODOLOGIES.**

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1 A. CIMOS® and BSMOS® are two computer software programs that CG&E utilizes  
2 to help determine whether a specific segment of cast iron or bare steel main  
3 should be replaced, based on the probability that future leaks will occur on that  
4 segment of main. The models use a variety of factors to determine the probability  
5 of future leaks, such as break history, pending leaks, type of material, year  
6 installed, pipe diameter, operating pressure, earth loading and soil type.

7 In 2004, approximately 10% of the AMRP work was identified using the  
8 CIMOS® and BSMOS® programs. The benefit of using this approach is that it  
9 enables CG&E to replace individual segments of cast iron and bare steel main that  
10 have a high propensity for future breaks and leaks, based on consideration of  
11 numerous factors relating to the particular circumstances under which the main  
12 was originally installed and is currently operating.

13 **Q. PLEASE EXPLAIN HOW CG&E SELECTS WHICH MAINS TO**  
14 **REPLACE USING THE STREET IMPROVEMENT PROGRAM.**

15 A. At various times during the year, local governments will notify CG&E that they  
16 intend to perform street improvements that require CG&E to re-locate its gas  
17 mains. When this occurs and when the main is cast iron or bare steel, CG&E will  
18 replace the main. In 2004, approximately 6% of the AMRP work was performed  
19 through street improvement projects. The benefit of using this approach is that it  
20 avoids duplicating costs that CG&E would otherwise incur if CG&E were to  
21 simply re-locate the existing main to accommodate the current street improvement  
22 project, then return at a later date to replace the main.

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1   **Q.   DID CG&E CONDUCT THE AMRP CONSTRUCTION IN 2004 AT A**  
2       **REASONABLE COST?**

3   **A.**   Yes. The management policies that CG&E followed to select which mains to  
4       replace, as discussed above, allowed CG&E to perform the work at a reasonable  
5       cost, based on the costs incurred for the program in 2004, which are only  
6       available on a preliminary basis. CG&E will provide the full twelve months  
7       actual cost information through the end of 2004 in its filing in February.

8   **Q   DID THE AMRP PRODUCE ANY SIGNIFICANT BENEFITS FOR**  
9       **CUSTOMERS IN 2004?**

10   **A.**   Yes. CG&E has replaced a significant amount of cast iron and bare steel main as  
11       a result of the program, as discussed above. The leak rate for cast iron and bare  
12       steel main is approximately 1.3 leaks per mile versus a leak rate of approximately  
13       0.05 leaks per mile for plastic and coated steel main. CG&E prioritized the  
14       replacement projects so as to replace mains that had the greatest potential for  
15       resulting in reportable incidents. This has resulted in a lower incidence of leaks.  
16       This lower number of leaks results not only in maintenance savings but also in  
17       less gas purchased by CG&E customers than would have occurred without the  
18       AMRP. CG&E passes through the maintenance savings to customers via a net  
19       reduction in approved maintenance costs in the AMRP's annual revenue  
20       requirement mechanism, as discussed in more detail in the testimony of CG&E  
21       witness Mr. William Don Wathen, Jr. Reductions in gas purchases are  
22       automatically passed on to customers through the GCR mechanism (for sales

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1 customers) or through reduced gross-up of city-gate deliveries (for transportation  
2 customers).

3 **III. ITEMS FROM 2004 AMRP STIPULATION**

4 **Q. AT PARAGRAPH 6 OF THE 2004 AMRP STIPULATION, CG&E**  
5 **AGREED TO COMPETITIVELY BID AT LEAST 80% OF THE WORK**  
6 **FOR THE AMRP PROGRAM. HOW MUCH OF THE WORK WAS**  
7 **COMPETITIVELY BID IN 2004?**

8 **A.** Of the work performed by contractors, over 99% was competitively bid based on  
9 construction costs incurred through December 31, 2004.

10 **Q. AT PARAGRAPH 7 OF THE 2004 AMRP STIPULATION, CG&E**  
11 **COMMITTED TO USE UNIT-BASED PRICES FOR THE AMRP**  
12 **PROGRAM, EXCEPT IN SITUATIONS OUTLINED IN THE**  
13 **STIPULATION. DID CG&E FOLLOW THIS PRACTICE IN 2004?**

14 **A.** Yes, CG&E used unit-based prices for the contracts and paid contractors the unit-  
15 based prices specified in the contracts, except for the types of situations outlined  
16 in stipulation: (a.) in the case of unanticipated conditions, such as unusual field  
17 conditions not contemplated by the parties; (b.) where a governmental entity  
18 imposed additional construction requirements for work within the right-of-way;  
19 (c.) where a greater number of units was required for the actual work versus the  
20 number of units contemplated in the plan drawings; or (d.) for certain types of  
21 construction activities where CG&E determined that it would result in lower costs  
22 for the contractor to perform the work under other price methods such as on a  
23 time and materials basis.

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1 Q. CG&E STATED AT PARAGRAPH 8 OF THE 2004 AMRP STIPULATION  
2 THAT IT WOULD ONLY AWARD AMRP WORK TO ANY AFFILIATE  
3 IF IT WAS ECONOMIC TO DO SO, AND THAT IT WOULD REPORT  
4 THE FOLLOWING INFORMATION ON ANY CG&E-AFFILIATED  
5 AMRP CONTRACTOR: THE NAME OF THE CONTRACTOR; THE  
6 COSTS PAID TO THE AFFILIATE AND AN EXPLANATION WHY  
7 SUCH WORK WAS AWARDED TO THE AFFILIATE. WHAT  
8 INFORMATION DOES CG&E HAVE TO REPORT FOR THE 2004  
9 AMRP?

10 A. Miller Pipeline Corporation (Miller Pipeline) is an affiliate of CG&E and was  
11 awarded AMRP construction work in 2004. All jobs awarded to Miller Pipeline  
12 for 2004 were competitively bid. In 2004, for the 2004 AMRP Construction  
13 Program, CG&E paid Miller Pipeline \$8,449,751.89. Miller Pipeline was  
14 awarded these jobs because they were the lowest and best bidder. In addition,  
15 Reliant Services, LLC (Reliant Services) is an affiliate of CG&E that provided  
16 locating services related to the AMRP in 2004. Reliant Services provides these  
17 services to CG&E at cost pursuant to the terms of the utility-non-utility service  
18 agreement, as approved by the SEC, FERC and the Commission. In 2004, for the  
19 2004 AMRP Construction Program, CG&E paid Reliant Services \$103,136.11.

20 Q. AT PARAGRAPH 9 OF THE 2004 AMRP STIPULATION, CG&E  
21 AGREED TO REPORT THE NUMBER OF CUSTOMER SERVICE  
22 LINES REPLACED, INCLUDING THE NUMBER OF SERVICE LINES

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1       **REPLACED OVER 70-FEET LONG. WHAT INFORMATION DOES**  
2       **CG&E HAVE TO REPORT FOR THE 2004 AMRP?**

3     A.    In 2004, 9,299 customer service lines were replaced, which includes 505 customer  
4       service lines over 70 feet long.

5     **Q.    AT PARAGRAPH 11 OF THE 2004 AMRP STIPULATION, CG&E**  
6       **AGREED TO EXPLAIN WHY IT SELECTED THE AREAS SCHEDULED**  
7       **FOR MODULE WORK UNDER THE AMRP IN 2004, INCLUDING THE**  
8       **REASONS WHY CG&E SELECTED EACH AREA, BASED ON SAFETY,**  
9       **RELIABILITY AND PERMITTING CONSIDERATIONS. PLEASE**  
10       **EXPLAIN HOW CG&E SELECTED THE MODULES FOR THE AMRP**  
11       **FOR 2004 BASED ON THESE CONSIDERATIONS.**

12    A.    The module work is divided into nine categories ranked from the highest potential  
13       for reportable incidents first. We also consider system integrity, permit  
14       requirements, and public safety. System integrity is taken into account when a  
15       large portion of a system is under construction. We evaluate system integrity  
16       factors such as location of tie-ins, flow, system pressures and the time of year the  
17       tie-ins will be performed. Permitting agencies require an orderly construction  
18       methodology so an entire municipality will not be directly affected causing  
19       hardship throughout for municipal residents and employees. Finally, flow of  
20       traffic must be considered for the traveling public. Nineteen of the modules  
21       constructed in 2004 were in the priority one category. Six of the modules were  
22       constructed as a result of street improvements, where scheduling with the  
23       communities ahead of the road work was essential. The remaining modules were

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1 in the priority three, four or five category, which spread the work over more of the  
2 system to reduce the hardship on particular communities. This enabled CG&E to  
3 address safety considerations, maintain system integrity, abide by permitting  
4 requirements and maintain safety to the traveling public for all construction  
5 activities

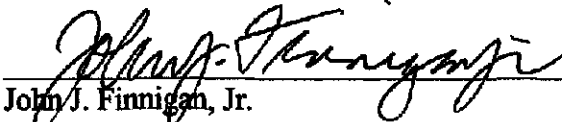
6 **Q. DOES THIS COMPLETE YOUR DIRECT PRE-FILED TESTIMONY?**

7 **A. Yes.**

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CERTIFICATE OF SERVICE

I, the undersigned, hereby certify that a copy of the foregoing Direct Testimony of Gary J. Hebbeler was served on the following parties of record by first class, U.S. mail, postage prepaid this 7<sup>th</sup> day of February, 2005.

  
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