

**ILLINOIS-AMERICAN WATER COMPANY**

**IAWC EXHIBIT 3.0**

**DIRECT TESTIMONY**

**OF**

**JOHN A. ZERBE**

**(Docket 05-0681/06-0094/06-0095 (consol.))**

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1 **DIRECT TESTIMONY**

2 **OF**

3 **JOHN A. ZERBE**

4 **I. Witness Identification and Background**

5 **Q1. Please state your name and business address.**

6 A. My name is John A. Zerbe. My business address is Two Commerce Square, Suite 2400,  
7 2001 Market Street, Philadelphia, PA 19103.

8 **Q2. By whom are you employed?**

9 A. I have been employed by Accenture and its precursor firms since 1984.

10 **Q3. What is the purpose of your testimony in this case?**

11 A. I will testify on behalf of Illinois-American Water Company ("IAWC") with regard to the  
12 billing and data system of American Water Works Company, Inc. ("American Water").

13 **Q4. Provide an overview of the issues that you will be addressing.**

14 A. My testimony focuses on two main areas. First, I will describe the billing systems  
15 implemented at American Water and IAWC, providing observations about the current  
16 operations of the systems. Second, I will respond to the specific issues Mr. Rubin raises  
17 concerning (or that seem to concern) the accuracy and reliability of IAWC's billing  
18 system. This area will involve discussing the following issues:

- 19
- 20 • Back billing;
  - 21 • Estimated bills;
  - 22 • Consecutive zero bills;
  - 23 • Data quality and reliability; and
  - 24 • Whether Mr. Rubin's allegations apply to American Water's billing system as a whole.

25 **Q5. Explain how your background and experience permit you to discuss American**  
26 **Water's billing system and respond to Mr. Rubin's direct testimony in this case.**

27 A. Since 2001, I have led a team that has provided support for American Water's billing  
28 system. In this role, I have gained significant familiarity with the capabilities and  
29 effectiveness of IAWC's billing system.

30 **II. Overview and Effectiveness of the Company's Billing System**

31 **Q6. Describe IAWC's billing system.**

32 A. IAWC's billing system is centrally operated. It serves IAWC and the other American  
33 Water utilities that American Water operates. The billing software, known as E-CIS, was  
34 licensed from a company called ORCOM (which was acquired by Alliance Data  
35 Systems). While American Water's overall billing system is operated centrally, each  
36 utility within the system uses its own copy of E-CIS, and each utility has its own  
37 customer database. Accordingly, to the extent a problem is identified within a given  
38 utility's copy of E-CIS (or with a utility's database), that problem would not necessarily  
39 affect the entire system.

40 **Q7. What are the core functions of a Utility Billing System?**

41 A. In my experience, the core functions of a utility billing system are to maintain individual  
42 customer information, post meter reads, calculate bills, post payments, maintain  
43 individual customer account balances, and support responding to customer questions.

44 **Q8. Does IAWC's billing system (E-CIS) perform the functions described in the**  
45 **preceding question?**

46 A. Yes.

47 **Q9. Are you familiar with the routine procedures IAWC undertakes to confirm the**  
48 **accuracy of its billing system? If so, please explain.**

49 A. Yes. American Water's policy requires that all changes to the system be tested prior to  
50 being placed in production. For small changes, this testing is limited to the affected area  
51 of the system. For larger changes, and any changes to billing, the testing is more  
52 extensive. Changes to billing, including the change to IAWC's supply charge in April  
53 2006, require the Rates Department at American Water to sign-off confirming that the  
54 system calculates bills as required by its tariffs. This is accomplished through the review  
55 of test bills against tariff requirements and confirming the calculations by hand. Testing  
56 activities are performed somewhere on the system every business day.

57 **Q10. Have you reviewed any data that address the accuracy of the Company's billing**  
58 **system? If so, what do they show?**

59 A. Yes. The Company provided me data on the accuracy of its bills. For the year ending  
60 2005, the data show that in both the American Water System and in Illinois, the  
61 Company is achieving a high level of accuracy of the bills submitted to customers. In  
62 fact, the accuracy rate in Illinois in 2005 was 99.64%, which is slightly better than the  
63 company-wide rate of 99.18%.

64 **Q11. What is the volume of data processed by American Water's billing system?**

65 A. American Water's billing system serves over 3 million customers system-wide, and it  
66 produces an average of over 100,000 bills each business night. In 2005, the system  
67 generated almost 30 million bills. American Water answers over 20 million customer  
68 calls each year at its call centers in Alton, Illinois and Pensacola, Florida. American  
69 Water also provides regulatory filings to large numbers of state, county, municipal and  
70 other government entities across the 17 states in which it operates. All of these activities  
71 are supported with the E-CIS system.

72 **Q12. In your experience, is the volume of data processed an indicator that the E-CIS**  
73 **system is accurate? If so, please explain.**

74 A. Yes. When a system processes a large volume of data, including millions of bills,  
75 payments, customer calls and filings with large numbers of government agencies, it  
76 increases the opportunity for system-wide issues to be discovered. If a function has an  
77 accuracy rate of 99.9% and it processes 1,000 transactions, the likelihood is that there  
78 will be 1 error. If the same accuracy rate is applied to 10,000,000 transactions, there are  
79 likely to be 10,000 errors. It is easier to discover 10,000 errors than 1 error.

80 **Q13. Are there functions and reports in the E-CIS system that American Water uses to**  
81 **confirm the accuracy of its billing process?**

82 A. Yes. Each time the billing process is run a series of exceptions are created and reports  
83 are produced that help confirm the accuracy and completeness of the billing process.

84 **Q14. Can you describe some of these functions and reports and their value to American**  
85 **Water?**

86 A. The main way that the E-CIS system confirms the accuracy of its billing process is  
87 through bill exceptions. These exceptions are generated on an account when it has been  
88 selected into a billing batch to be processed and meets specific exception criteria.  
89 Depending on the type of exception, the account may be prevented from billing until the  
90 account is corrected. There are a number of different scenarios which generate these  
91 exceptions, such as high bills, low bills, zero bills, etc. Exceptions are reviewed by the  
92 service and billing departments as appropriate.

93 In addition, the billing department runs a number of reports each day to look for  
94 scenarios which could cause inaccurate bills to be generated. Some of the situations that

95 these reports look for are commercial rates on residential accounts, or vice versa,  
96 incorrect service set-ups, or accounts that have an incorrect rate schedule associated with  
97 them.

98 Finally, periodic reports are run to verify that all active accounts have received a  
99 bill during the last billing cycle. Any issues identified on these reports are then assigned  
100 to the appropriate team.

101 **Q15. Mr. Rubin states on page 11, line 251 of his direct testimony that American Water's**  
102 **computer system is "so antiquated that it does not maintain the information in any**  
103 **type of useable form." Is this consistent with your observations?**

104 A. No. The version of E-CIS implemented at American Water was released in 1996, and the  
105 E-CIS system has been licensed by other utilities. In addition, as I testified earlier,  
106 American Water is processing hundreds of thousands of bills, payments and customer  
107 calls each day. American Water also complies with strict governmental filing  
108 requirements in each state in which it operates. All of these activities are supported by  
109 the E-CIS system. If the system did not "maintain the information in any type of useable  
110 form" these volumes would not be supportable.

111 **Q16. In summary, based on your knowledge and experience, does IAWC's billing system**  
112 **provide accurate bills to customers?**

113 A. Yes. While there are bills that contain problems and require corrections, the reports I  
114 have seen and the operations I have witnessed do not indicate system-wide problems with  
115 billing accuracy. The system adequately performs the functions discussed above.

116 **III. Specific Issues that Mr. Rubin Raised in His Direct Testimony**

117 **A. Back Billing**

118 **Q17. Have you reviewed Mr. Rubin's direct testimony in this case, which was provided on**  
119 **behalf of the Illinois Attorney General and Village of Homer Glen?**

120 A. Yes, I have.

121 **Q18. Mr. Rubin comments that the Company improperly issued back bills in**  
122 **extraordinary amounts to hundreds of customers in the Chicago metro area. How**  
123 **does this comment relate to the Company's E-CIS billing system?**

124 A. It does not. E-CIS' role is to process the data that it receives to produce bills. The system  
125 does not, on its own, generate back bills. A user has to tell the system to create a back  
126 bill and provide the information for that back billing. This information includes the date  
127 of the new reading and the catch-up meter read. The system will bill this consumption  
128 with the same programs, and the same accuracy, as it does with regular billing. Moreover,  
129 I refer to Mr. Ruckman's testimony and specifically that portion where he states that the  
130 back billing problems that Mr. Rubin discusses are related to data input that occurred in  
131 connection with a meter change program in Illinois American's Chicago Metro District.  
132 E-CIS processed the information that was input into the system for these back bills. The  
133 E-CIS system did not create the need for the corrective action that Mr. Ruckman  
134 discusses.

135 **B. Estimated Bills**

136 **Q19. Mr. Rubin's alleges that the Company has improperly issued estimated bills to**  
137 **hundreds, if not thousands, of customers in Illinois. How does this allegation relate**  
138 **to the Company's billing system?**

139 A. As with the previous topic of back billing, it doesn't. As was stated earlier, the E-CIS  
140 system processes bills based on the information that it receives. The system is designed  
141 to generate an estimated bill when it does not receive a meter read for an account that is  
142 scheduled to be billed. As Mr. Rubin has testified, this is a necessary practice in the  
143 utility industry. Moreover, as Mr. Ruckman explains in his direct testimony, the  
144 Company may issue consecutive estimates in a variety of circumstances. As a result,  
145 concerns about the volume or frequency of estimated bills are not an E-CIS system issue.

146 **C. Zero Consecutive Bills**

147 **Q20. Mr. Rubin states that the Company is not taking reasonable and prudent actions to**  
148 **track and investigate customers who receive bills that show zero consumption.**

149 **Please describe the role of E-CIS as it relates to zero consumption bills.**

150 A. The E-CIS system generates exception conditions that identify accounts that have zero  
151 usage during each billing run. This exception can be used by the company to identify  
152 accounts that require investigation to determine if this lack of consumption indicates a  
153 problem with the meter. As Mr. Ruckman discusses, zero consumption readings can be  
154 attributable to a variety of factors that do not indicate a problem.

155 **D. Data Quality and Reliability**

156 **Q21. On pages 8-10 of his direct testimony, Mr. Rubin suggests that the Company could**  
157 **not provide adequate and reliable data on a timely basis in response to his data**  
158 **requests. Do you have any relevant experience in situations like this?**

159 A. Yes. It is my experience that, when requests for information cannot be answered by  
160 using existing production reports, special queries must be programmed. In cases where  
161 the information being requested is not directly stored, these queries can become complex.

162 The data Mr. Rubin sought are not among the standard output of the E-CIS system. As a  
163 result, the Company had to compose special queries to obtain the data responsive to Mr.  
164 Rubin's data request. In this case, the steps involved in developing this query included  
165 developing a hypothesis for the accounts, writing a query to capture these accounts, and  
166 then reviewing selected accounts to verify whether the account falls into the scenario that  
167 has been requested. As accounts are reviewed and determined to be representative of the  
168 data requested, the query must be modified. Under such circumstances, it is common to  
169 go through multiple iterations of queries as the parameters of the queries are refined and  
170 the complexities and limitations of the data structure and storage are uncovered. It is  
171 common to run initial queries with criteria that will identify accounts that likely meet the  
172 goals of the request, then to refine the query based on the requestor's better understanding  
173 of the data. Therefore, the fact that information may require time-intensive querying is  
174 not indicative of poor or unreliable data.

175 **Q22. Mr. Rubin specifically alleges the Company provided him with a list of 474**  
176 **customers in the Homer Glen area who were back billed. Then, he continues, the**  
177 **Company later modified its response to indicate that those accounts "possibly"**  
178 **"received back bills." How does this clarification relate to the E-CIS system?**

179 A. It doesn't. As explained by Mr. Ruckman, IAWC was investigating the possibility of  
180 back bills. The source data for this analysis was meter exchange records, not data from  
181 the E-CIS system.

182 **Q23. On page 10, lines 243-250 of his direct testimony, Mr. Rubin discusses the**  
183 **Company's alleged inability to provide information about customers who received**  
184 **consecutive bills with zero consumption. He states that "all of American Water's**

185 **billing records are computerized and I cannot understand why it would take**  
186 **thousands of hours to query the billing database and obtain the information we**  
187 **requested." Do you have any experience with requests like this that take**  
188 **significantly longer than requestors expect to develop?**

189 A. Yes. The E-CIS system does not store a counter for consecutive bills with zero  
190 consumption. Therefore, as mentioned previously, producing such a list requires the  
191 development of a program that will provide the answer from the data that are stored.  
192 This program needs to be designed, programmed, and tested with an understanding of the  
193 data structure and its limitations. Even after those steps have been accomplished, the  
194 program would likely require additional refinement to account for exception conditions  
195 and complexities in the data. Therefore, developing this program most likely would  
196 require significant time and effort. In addition, once data has been produced, it can be  
197 misunderstood by the recipient. In Mr. Rubin's testimony, he raises concerns about the  
198 inclusion of accounts that appear to have a current bill for less than the previous bill.  
199 Upon reviewing the data, it appears that Mr. Rubin interpreted the "Previous Amount  
200 Due" as being equivalent to the previously billed amount. In some cases, such as when a  
201 customer has not paid their bill in full on a timely basis, this is an incorrect assumption.  
202 The development of queries, and the achievement of an accurate understanding of the  
203 results, can be difficult and very time consuming.

204 **Q24. In summary, based on your knowledge and experience, do you believe that E-CIS'**  
205 **alleged inability to provide Mr. Rubin with the data he requested in this proceeding**  
206 **suggests that E-CIS' "data quality" is poor, or that the data E-CIS produces are**  
207 **unreliable?**

208 A. No. Mr. Rubin was requesting data from the system that required the design,  
209 programming and testing of specialized queries and interpretation of the results. Any  
210 concerns about the outcome or accuracy of these queries are not a reflection of E-CIS'  
211 data quality or its ability to produce accurate bills.

212 **E. Applicability of Mr. Rubin's Allegations to American Water as a Whole**

213 **Q25. Based on the examples of data quality problems that Mr. Rubin discusses, he**  
214 **concludes on page 11, lines 266-272, that there are similar data quality problems in**  
215 **other jurisdictions by customers served by American Water. Based on your**  
216 **experience, is it appropriate to extrapolate concerns about alleged data quality**  
217 **problems in the Homer Glen area to other customers in and outside of Illinois?**

218 A. No. I have seen no evidence of wide spread data quality or billing problems.  
219 Additionally, the Company's reports indicate a high degree of billing accuracy, and the  
220 concerns about data quality appear to be complaints about the results of customized data  
221 queries needed to respond to the data requests served in this case. Likewise, as I stated  
222 earlier, the issues in Homer Glen were related to accounts that had problems with their  
223 meters. It is my experience that problems with meter reads create complications in  
224 customer accounts that make them non-representative of other accounts within a system  
225 that do not share the same meter problems. Therefore, it would be a mistake to  
226 generalize about other accounts that do not share these meter-specific problems. In  
227 addition, even if those problems did exist in the Illinois database, it would not necessarily  
228 indicate that the same problem existed in any of American Water's other utility databases  
229 because IAWC is supported from a separate copy of E-CIS and a separate database.

230 **IV. Conclusion**

231 **Q26. Do you have anything further to add?**

232 A. Yes. Mr. Rubin has requested that the Commission conduct a full-scale audit of the  
233 Company's billing and service records. As discussed earlier, American Water is able to  
234 satisfy the needs of millions of customers and a large number of governmental agencies  
235 on a routine basis. Its reports show a high degree of accuracy in billing, and the system is  
236 tested on a daily basis as part of normal maintenance activities. In addition, as Mr.  
237 Ruckman states in his direct testimony, the service problems alleged by Mr. Rubin are  
238 generally limited in scope—many of them only relate to IAWC's Chicago Metro District  
239 over a time period when specific types of meters were being changed out. I have not seen  
240 any evidence of, nor am I aware of, any system-wide issues that would lead me to believe  
241 that a full-scale audit of the Company's billing, metering, meter-reading and customer  
242 service operations is necessary.

243 **Q27. Does this end your testimony?**

244 A. Yes, it does.