

ILLINOIS COMMERCE COMMISSION

IAWC EXHIBIT 1.0

**DIRECT TESTIMONY OF
FREDERICK L. RUCKMAN**

ILLINOIS-AMERICAN WATER COMPANY

(Docket No. 07-0425)

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DIRECT TESTIMONY
OF
FREDERICK L. RUCKMAN

I. WITNESS IDENTIFICATION AND BACKGROUND

1
2 **Q1. Please state your name.**

3 **A.** Frederick L. Ruckman.

4 **Q2. Please state your business address.**

5 **A.** 100 North Water Works Drive, Belleville, Illinois 62223.

6 **Q3. By whom are you employed and in what capacity?**

7 **A.** I am employed by Illinois-American Water Company ("IAWC" or "Company") as
8 General Manager-Network.

9 **Q4. Please summarize your education and employment history.**

10 **A.** I earned a Bachelor of Science degree, with a major in Accounting, from Eastern
11 Illinois University in 1971. I was employed by Northern Illinois Water Corporation
12 ("NIWC"), a predecessor of Illinois-American, beginning April, 1972, as a Staff
13 Accountant. In April, 1980, I was promoted to Comptroller and elected Secretary
14 of NIWC. In 1994, I was elected to NIWC's Board of Directors, and in 1996, I
15 was promoted to the position of Vice President. On January 1, 2000, I became
16 Vice President and Treasurer of Illinois-American. In 2001, I became an
17 employee of the Service Company, and in 2002, I also became Comptroller of
18 Illinois-American. I assumed my current position on July 1, 2004.

21 **Q5. Please summarize your responsibilities as General Manager-Network for**
22 **IAWC.**

23 **A.** I am responsible for the oversight of the day to day management and operation
24 of the Company's Network water and wastewater operations in Illinois. Network
25 operations include all traditional distribution work such as valve, hydrant, water
26 main and water service line maintenance and operation; meter reading, meter
27 maintenance and replacement activity; and customer turn on/shut off and field
28 customer service activities. I am responsible for the development, supervision
29 and control of Network operating and capital expenditures as authorized by the
30 Board of Directors; and for the development of employee relations and
31 negotiations of local labor agreements in Illinois. In connection with my
32 responsibilities, I have had extensive experience in all aspects of water utility
33 operations.

34 **Q6. Have you testified before this Commission in other proceedings?**

35 **A.** Yes. I have testified in many cases involving both NIWC and IAWC, including all
36 rate cases filed by NIWC from 1980 through 1999, and the three IAWC rate
37 cases filed since 2000 including its pending rate case, Docket No. 07-0507.

38 **Q7. As General Manager-Network, are you generally familiar with the business,**
39 **facilities, and operations of the Company in each of its divisions?**

40 **A.** Yes.

41 **II. PURPOSE OF TESTIMONY**

42 **Q8. What is the purpose of your testimony?**

43 **A.** My testimony describes the circumstances leading to the Company's filing in this
44 docket of proposed tariff revisions for recovery of unaccounted-for water ("UFW")

45 in areas subject to the Purchased Water Surcharge Rider. I also discuss a
46 revision of the Company's proposal that has been discussed with Commission
47 Staff and the Illinois Office of the Attorney General.

48
49 **III. PROPOSED MAXIMUM PERCENTAGES OF UNACCOUNTED-FOR WATER**

50 **Q9. Did IAWC file tariffs setting out the maximum percentage of UFW for each**
51 **of its service districts in accordance with 220 ILCS 5/8-306(m)?**

52 **A.** Yes. In 2006, the Company filed Original Sheet No. 53.1, which established
53 maximum percentages of UFW costs recoverable under the Purchased Water
54 Surcharge Rider. On December 28, 2006, the Company filed tariffs establishing
55 a maximum percentage of UFW to be considered in the determination of rates
56 for all service areas not subject to the tariff affecting Purchased Water Rider
57 areas. The December 28, 2006 tariff filing also included a revised tariff for the
58 Purchased Water Rider areas, which contained the same maximum percentages
59 for UFW as the tariff filed earlier in 2006. On June 27, 2007, the Company filed
60 tariffs to revise, for certain Purchased Water Rider areas, the maximum
61 percentage of UFW provided in the tariffs filed in December 2006.

62 **Q10. How do the Company's tariffs define UFW?**

63 **A.** The tariffs define UFW as the amount of water that enters the Company's
64 distribution system and is not used for sales to customers or for other known
65 purposes as determined by meter measurement or, where no meter reading is
66 available, by reasonable estimation procedures.

67

68

69 **Q11. Please further explain the definition of UFW.**

70 **A.** Non-revenue water (“NRW”) is the overall difference between the quantity of
71 water delivered to the distribution system (system delivery) and the quantity of
72 water sold to customers from which revenue is derived (sales). NRW includes
73 both water uses that can be identified and accounted for (including water used by
74 the utility for main flushing and within its own facilities, as well as water used by
75 municipalities for fire fighting, street cleaning and sewer main flushing), and
76 water uses that cannot be accounted for, such as leakage or main breaks. The
77 subset of NRW that cannot be identified and accounted for as usage for a
78 positive purpose is UFW – the measure of water produced that does not reach
79 customers and is not otherwise accounted for.

80 **Q12. Is there a specific percentage level of UFW that is generally deemed**
81 **acceptable within the industry?**

82 **A.** An acceptable level of UFW depends on specific system conditions, but 15 to 20
83 percent is a commonly-accepted rule of thumb for acceptable levels of UFW. For
84 example, the Pennsylvania Public Utility Commission has adopted a Statement
85 of Policy on water conservation that provides as follows: “Levels of
86 unaccounted-for water should be kept within reasonable amounts. Levels above
87 20% have been considered by the Commission to be excessive.” 52 Pa. C.S. §
88 65.20. Similarly, the Public Utilities Commission of Ohio requires a utility to
89 report quarterly on the amount of its UFW (which is defined to exclude “water
90 usage for fire fighting, flushings, and plant usage”), but to propose remedial

91 actions only when UFW is 15% or above. Ohio Admin. Code § 4901:1-15-
92 20(C)(5).

93 **Q13. What are the levels of UFW specified in the Company's existing tariffs?**

94 The Company's existing tariffs, filed in December 2006, provide for maximum
95 levels of UFW in Purchased Water Rider areas ranging between 12% and 14%.
96 The current maximum level of UFW for all non-Purchased Water Rider areas is
97 15%.

98 **Q14. Subsequent to the filing of the December 2006 UFW tariffs, has the**
99 **Company taken additional steps to address levels of UFW?**

100 **A.** Yes. Pursuant to a Stipulation entered between the Company and the Illinois
101 Attorney General in Docket No. 05-0681, which was approved by the
102 Commission in Docket Nos. 06-0681/06-0094/06-0095 (consol.), the Company
103 agreed to prepare a system analysis of UFW within six months after entry of an
104 Order in that Docket to determine whether UFW percentages different that those
105 filed on December 28, 2006 should be implemented and to identify approaches
106 for reduction of UFW where economically justified. The Company agreed to first
107 complete the analyses for those areas subject to the Purchased Water Rider,
108 and to discuss its proposal for those areas with the Attorney General during the
109 second quarter of 2007. After those discussions, in accordance with the
110 Stipulation, IAWC filed during the second quarter a proposal to implement UFW
111 maximums based on consideration of the analysis for the Purchased Water Rider
112 areas.

113

114 **Q15. Did the Company perform a system analysis of UFW?**

115 **A.** Yes. During the first quarter of 2007, the Company retained Earth Tech to
116 perform an economic analysis of UFW for all IAWC operating districts. The
117 scope of the analysis was to review UFW for all districts, determine the
118 appropriate long-term level of UFW, and suggest the best course of action to
119 mitigate water losses. Earth Tech has completed its analyses. IAWC Exhibit
120 FLR 1.1 is a report prepared by the Company titled *Illinois-American Water*
121 *Company's Report Regarding Purchased Water Area Maximum Tariff Limits for*
122 *UFW*, which summarizes the Earth Tech reports for the Purchased Water areas.
123 The Earth Tech reports for each rate area and each operating district (within a
124 rate area) are as follows:

<u>REPORT</u>	<u>IAWC EXHIBIT</u>
Alpine Heights	FLR 1.2
Chicago Suburban	FLR 1.3
Fernway	FLR 1.4
Santa Fe Rate Rider Area	FLR 1.5
West Suburban District	FLR 1.6
Homer District	FLR 1.7
Moreland	FLR 1.8
DuPage Rate Rider Area	FLR 1.9
Arrowhead District	FLR 1.10
Country Club District	FLR 1.11
DuPage District	FLR 1.12
Liberty Ridge District	FLR 1.13

141	Liberty Ridge East District	FLR 1.14
142	Lombard District	FLR 1.15
143	Valley View District	FLR 1.16
144	Waycinden	FLR 1.17

145 **Q16. Please explain the methodology that Earth Tech used in its analysis.**

146 **A.** Earth Tech evaluated each Purchased Water Rider rate area to determine both
147 the current level of UFW and an ultimate target level of UFW. The current level
148 of UFW for each area is equal to the difference between system input volume
149 and authorized consumption. Because the Company has not historically tracked
150 all forms of authorized consumption, such as unbilled consumption for water
151 used for firefighting, street cleaning and main flushing, Earth Tech estimated
152 unbilled authorized consumption in accordance with the American Water Works
153 Association (“AWWA”) M36 Manual. The M36 Manual provides that, based upon
154 the findings of numerous water audits worldwide, a default value of 1.25% is a
155 reasonable estimate of unbilled authorized consumption. Earth Tech then
156 determined an ultimate target level of UFW based on the “economic level of
157 leakage” for each area. As leakage increases, the cost of water loss also
158 increases. If more stringent forms of active leakage control are implemented,
159 both the volume and cost of leakage decrease. Implementing active leakage
160 control, however, involves a cost. Adding the cost of lost water and the cost of
161 implementing active leakage control results in a total cost curve. The minimum
162 point on the curve represents the economic level of leakage – the level of
163 leakage with the lowest overall annual cost.

164 **Q17. Based on the Earth Tech analysis, did the Company file revised tariffs for**
165 **the Purchased Water Rider areas?**

166 **A.** Yes. IAWC filed revised tariffs in this Docket on June 27, 2007, for the
167 Purchased Water Rider areas. The Commission issued an order suspending
168 these tariffs on July 25, 2007.

169 **Q18. Please describe the changes originally proposed for the maximum UFW**
170 **levels for the Purchased Water Rider areas.**

171 **A.** The tariffs filed on June 27, 2007 proposed to retain the current levels, except for
172 three areas. The Company proposed to increase the maximum percentage of
173 UFW for the DuPage rate area from 12.43% to 15.5%. For the Waycinden rate
174 area, the Company proposed to adjust the maximum percentage of UFW from
175 14% to 18%. IAWC also proposed that the tariff maximum for the Moreland rate
176 rider area be adjusted from the current level of 12% to 13.5%.

177 **Q19. What changes does the Company now propose to make to maximum UFW**
178 **levels for the Purchased Water Rider areas?**

179 **A.** Based on discussions with Staff and the Illinois Attorney General, the Company
180 proposes to retain the maximum percentage of UFW specified in the tariffs filed
181 in December 2006 for all areas (including Waycinden and Moreland), except
182 DuPage. For DuPage, the Company proposes to increase the maximum
183 percentage of UFW from 12.43% to 14%. A revised tariff reflecting this change is
184 included in my testimony as IAWC Exhibit FLR 1.18.

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187 **Q20. What is the rationale for the increase in the maximum percentage of UFW**
188 **for the DuPage area?**

189 **A.** The Earth Tech analysis for the DuPage rate area (IAWC Exhibit FLR 1.9)
190 demonstrates that the current level of UFW is 14.5% and the economic level is
191 18.2%. The existing tariffs provide for a maximum percentage of 12.43%.
192 Pursuant to 220 ILCS 5/8-306(m), “The rates or surcharges approved for a water
193 public utility shall not include charges for unaccounted-for water in excess of this
194 maximum percentage without well-documented support and justification. . . .”
195 Because the economic level of UFW in the DuPage area is 18.2%, the Company
196 does not feel that it would be appropriate to expend funds for leak surveying,
197 pipeline repair and/or replacement to reduce UFW. Additionally, if the current
198 tariff level of 12.43% were achieved, the Earth Tech report demonstrates that it
199 would be uneconomic to engage in active leakage control to maintain UFW at
200 this level. The Company should not incur a rate penalty (or alternatively,
201 customers should not incur a rate increase) that would result in the expenditure
202 of funds to decrease and then maintain UFW at the current tariff level of 12.43%.
203 Therefore, the proposed tariff revision for the DuPage area is necessary to
204 enable the Company to recover costs associated with a reasonable level of UFW
205 for this area.

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210 **IV. ILLINOIS DEPARTMENT OF NATURAL RESOURCES**

211 **Q21. What is the source of supply for the DuPage rate area?**

212 **A.** The DuPage area is supplied by purchased water from Lake Michigan.

213 **Q22. Does the Illinois Department of Natural Resources (“IDNR”) monitor usage**
214 **of Lake Michigan water?**

215 **A.** Yes. IDNR controls the allocation of Lake Michigan water and monitors the use
216 of this resource through an annual reporting process. IDNR requires each public
217 water supply having an allocation of Lake Michigan water to complete a report
218 called Annual Water Use Audit Form (“LMO-2 Form”). The LMO-2 Form reports
219 a public water supply’s purchase of Lake Michigan water, sales to end users, and
220 estimates of unmetered uses and unavoidable leakages for a given year. The
221 end result is a calculated “Percentage of Total Unaccounted for Flow to Net
222 Annual Pumpage” (“UFF”) for that reporting year. This calculation applies only to
223 operating districts in which the source of supply is Lake Michigan water.

224 **Q23. How does the IDNR define and calculate UFF?**

225 **A.** 17 Ill. Admin. Code Section 3730.102 defines UFF as “that amount of water
226 supplied to a system (including the components of transmission, distribution,
227 storage, and pumping) which is lost from the system prior to delivery to the end
228 user, but not including unavoidable leakage.” UFF is calculated “by taking the
229 net annual pumpage of the system and subtracting from that figure the amount of
230 water used for residential, commercial, industrial, municipal, hydrant, other
231 identified uses, and unavoidable leakage. The remainder shall be the
232 ‘unaccounted-for flow’.”

233

234 **Q24. How does the IDNR define and calculate unavoidable leakage?**

235 **A.** “Unavoidable leakage” is defined in IDNR regulations (17 Ill. Admin. Code
236 Section 3730.102) as “that amount of water lost from a well maintained water
237 system.” Unavoidable leakage is determined through estimation which takes into
238 consideration “the age, size and type of pipe and joints, ground conditions
239 surrounding the pipes, the number of service connections, the number of valves
240 and hydrants, and system pressures.”

241 **Q25. Does IDNR have an expectation of an appropriate level of UFF for each
242 public water supply?**

243 **A.** Yes. IDNR expects a public water supply to maintain a UFF of 8% or less. If a
244 supplier’s UFF exceeds 8%, the IDNR requires the supplier to identify its plan to
245 improve UFF.

246 **Q26. Are the levels of UFF for the operating districts that purchase Lake
247 Michigan water consistent with the levels of UFF expected by IDNR?**

248 **A.** Yes. For 2006, the reported UFF filed by IAWC for each operating district (a UFF
249 report is not filed by rate area), with one exception, indicated a level of UFF
250 below 8%. For the Valley View operating district in the DuPage rate area, UFF in
251 2006 was determined to be 13.7% due to a main break that was located by
252 IAWC and repaired. Because the main break was repaired, IDNR did not require
253 the filing of a remediation plan for Valley View. IDNR indicated, however, that a
254 remediation plan could be required for Valley View if future UFF levels are above
255 8%. Due to the main break repair, IAWC does not anticipate that this will occur.

256 **Q27. Has the Company “accounted for” unavoidable leakage in its UFW**
257 **calculations filed in this proceeding?**

258 **A.** No. In the calculations, the Company accounted only for metered sales and
259 authorized consumption. However, in future UFW calculations, the Company will
260 include an allowance to “account for” unavoidable loss.

261 **Q28. Does this conclude your testimony?**

262 **A.** Yes.