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PREPARED DIRECT TESTIMONY
OF
ROBERT V. MCGARRAH
ON BEHALF OF
CENTRAL ILLINOIS LIGHT COMPANY
DOCKET NO. 01-0465

CHIEF CLERK'S OFFICE

1 Q1: Please state your name and business address.

2 A1: My name is Robert V. McGarrah, and my business address is 300 Liberty St.,
3 Peoria, IL 61602.

4

5 Q2: What is your current position at Central Illinois Light Company?

6 A2: I am employed by Central Illinois Light Company ("CILCO") as a Staff System
7 Planning Engineer.

8

9 Q3: What is your educational background and work experience?

10 A3: I was graduated from Bradley University in 1976 with a Bachelor of Science
11 degree in Electrical Engineering Technology. In 1984, I obtained my Professional
12 Engineer license in the state of Wisconsin. I began my employment at Central
13 Illinois Light Company in 1976. I have worked in various positions in the
14 Transmission, Distribution, and Substation Departments and have been in the
15 System Planning Department since 1981. My primary job responsibility is to
16 insure that the CILCO transmission system is designed, constructed, and operated
17 in a reliable and economic manner. I perform computer-based power flow
18 analysis in order to complete both planning and operating studies. Other

19 responsibilities include ensuring compliance with the NERC Planning Standards
20 and MAIN Operating Guides. I am presently a member of the MAIN Planning
21 Committee and regularly participate on the Transmission Task Force,
22 Transmission Assessment Study Group, Future Systems Study Group, and Data
23 Bank Group. I have been involved in compliance issues associated with the
24 FERC open access orders and I represent CILCO on various Midwest
25 Independent System Operator (“MISO”) committees and working groups.

26

27 Q4: Please explain the purpose of your testimony.

28 A4: The purpose of my testimony is to explain CILCO’s delineation of its
29 transmission and local distribution assets and how the delineation was
30 accomplished and the rules applied.

31

32 Q5: Are you familiar with CILCO’s electrical transmission and distribution system?

33 A5: Yes. I am very familiar with the operations of CILCO’s electrical transmission
34 and distribution network and understand how our facilities are affected by the
35 flow of power through the system and to our customers.

36

37 Q6: Were you involved in the preparation of CILCO’s proposed delineation of its
38 transmission and local distribution system that is the subject of this proceeding?

39 A6: Yes, I was. I was involved in the development of our approach to delineate the
40 assets according to prior Commission Orders and involved in the analysis of

41 CILCO's system in determining how it functions. I participated in the
42 identification of the assets and how the asset should be classified according to the
43 FERC's Seven-Factor Test and the "White Paper Regarding General Guidelines
44 for Delineation of Transmission and Local Distribution Facilities" issued by the
45 Illinois electric utilities. CILCO Exhibit 1.1 is a copy of the White Paper.

46

47 Q7: What is CILCO seeking to have approved by the Illinois Commerce Commission
48 ("the Commission") in this proceeding?

49 A7: CILCO is requesting that the Commission approve CILCO's delineation of its
50 transmission and local distribution facilities, which is also referred to as the
51 "refunctionalization" of transmission and distribution. Assets, previously
52 identified as transmission assets, are being re-classified to be consistent with the
53 function performed by the asset. Historically, CILCO classified its assets
54 according to parameters such as the voltage level of the line.

55

56 Q8: Why refunctionalize the transmission assets?

57 A8: As a result of industry changes, refunctionalization to more accurately reflect the
58 function performed by the assets is necessary for determining which regulator has
59 jurisdiction over the assets -- the Commission versus FERC. Also, this
60 identification is necessary for the prudent recovery of costs. Another reason for
61 refunctionalizing the cost is to assist in the dividing the integrated utility into
62 separate more efficient business units as CILCO has done. Assets related to the

63 production of energy have been separated and re-assigned to the generation
64 function. Assets related to the transmission function have been identified so that
65 the appropriate cost components have been segregated for the Midwest
66 Independent System Operator ("MISO") agreement for proper recovery of costs
67 from the association of CILCO with that institution. It is also appropriate to
68 classify the costs in a manner that ensures there is not an over- or under-recovery
69 of costs. CILCO plans to file revisions to its Open Access Transmission Tariff to
70 reflect the re-classification of assets and related costs after the Commission has
71 approved the refunctionalization of the assets and before the MISO becomes
72 operational.

73

74 Q9: Why is CILCO seeking to refunctionalize its assets at this time?

75 A9: As a member of the MISO, CILCO must identify which transmission facilities
76 will be assigned to operate under the MISO's tariffs. CILCO will file residential
77 delivery service rates in 2001, and it is important to classify the assets in a manner
78 consistent with the asset classification for FERC.

79

80 Q10: Have you conducted power flow studies to analyze the assignment of assets?

81 A10: CILCO's facilities can be accurately classified through the application of good
82 engineering judgment, which is based on years of first-hand experience. An
83 inspection of one-line circuit diagrams makes the functionality of CILCO's
84 electric system readily apparent. Power flow studies, which entail a detailed

85 distribution factor analysis of individual circuits, would not be a productive use of
86 resources and would not result in significantly different conclusions.

87

88 Q11: How did CILCO analyze its electric facilities to determine asset assignment?

89 A11: To comply with FERC Order 888, CILCO analyzed its electric facilities using
90 seven factors identified in the Order to determine which assets should be classified
91 as transmission and which should be classified as local distribution. The seven
92 FERC indications take into account both the technical and functional
93 characteristics of the transaction involved. The seven factors are:

- 94 1. Local distribution facilities are normally in close proximity to retail
95 customers.
- 96 2. Local distribution facilities are primarily radial in character.
- 97 3. Power flows into local distribution systems; it rarely, if ever, flows out.
- 98 4. When power enters a local distribution system, it is not reconsigned or
99 transported on to some other market.
- 100 5. Power entering a local distribution system is consumed in a comparatively
101 restricted geographical area.
- 102 6. Meters are based at the transmission/local distribution interface to measure
103 flows into the local distribution system.
- 104 7. Local distribution systems will be of reduced voltage.

105 In addition, CILCO utilized the white paper entitled "General Guidelines For
106 Delineation of Transmission and Local Distribution Facilities," which was

107 prepared in 1998 by the Illinois Jurisdictional Utilities Seven-Factor Test Task
108 Force.

109

110 Q12: What are the major components of CILCO's electric system?

111 A12: The CILCO service territory is composed of two geographically separate areas,
112 the larger one being in central Illinois, which includes the cities of Peoria,
113 Lincoln, and Springfield, and a smaller service area in east-central Illinois
114 (between Decatur, Champaign and Danville) which includes the towns of
115 Homer and Bement.

116

117 CILCO has twelve interconnection points with four adjacent utilities. Specifically
118 they are, Commonwealth Edison (two at 345 kV, one at 138 kV), Ameren (one at
119 345 kV), Illinois Power (four at 138 kV, one at 69 kV, and two at 34.5 kV), and
120 City Water, Light and Power (one at 138 kV).

121

122 The Homer and Bement service areas are fed radially from a single 69 kV
123 interconnection (Glover substation near St. Joseph, Illinois) and two 34.5 kV
124 interconnections (Bement and Hammond substations) with Illinois Power. These
125 facilities clearly meet FERC criteria 2, 3, and 7 for being distribution circuits.

126

127 The Lincoln and Springfield areas are primarily served by a central hub and radial
128 spoke arrangement from the 138 kV transmission system. At these locations the

129 power is transformed from 138 kV to 34.5 kV (Mason substation near San Jose,
130 Kickapoo substation in Lincoln, and East Springfield substation in Springfield).
131 These step-down facilities all distribute power radially to customer loads. Again,
132 by inspection, the facilities below 138 kV clearly meet FERC criteria 2 and 3 for
133 being distribution circuits. There is also a single 138 kV radial line (1325) in
134 Lincoln which serves two 138/13 kV substations (McGrath and Limit). Using
135 FERC criteria 2 and 3 these facilities should also be classified as distribution
136 circuits. Finally, two of the radial 34.5 kV lines that originate at Kickapoo
137 Substation in Lincoln are partially constructed for 138 kV but operated at 34.5 kV.
138 These lines were previously considered to be transmission but should now be
139 classified as distribution.

140

141 The remaining service territory encompasses the greater Peoria area and consists
142 of both looped and radial 345 kV, 138 kV, and 69 kV facilities. CILCO 345 kV
143 and 138 kV facilities, with the exception of one 138 kV radial line, primarily serve
144 to integrate generating resources with customer loads and to interconnect with
145 other utilities in the State of Illinois. The 345 kV facilities connect to the 138 kV
146 facilities through two transformers at Tazewell substation. The power flow on
147 these transformers can be in either direction depending on the amount of CILCO
148 load and generation dispatch. Consequently, they do not meet FERC criteria 3 and
149 4 and should be classified as transmission.

150

151 The purpose of the looped 138 kV transmission network is twofold. First, it
152 allows power to be transported to five bulk power substations (Fargo, Hallock,
153 Hines, R. S. Wallace, and Tazewell) where the voltage is stepped down to 69 kV
154 for distribution to customers. The looped nature of the 138 kV system enhances
155 reliability in this instance. Secondly, the 138 kV system provides a path for
156 power to be sold into the interconnected grid through our ties to neighboring
157 utilities. The looped 138 kV facilities do not meet FERC criteria 4 and 7 and
158 should be classified as transmission circuits.

159

160 There is a single 138 kV radial line (1354) in the Peoria area that originates at
161 Tazewell substation and terminates into a 138/69 kV transformer located at
162 Eastern substation. The purpose of this facility is clearly distribution in nature as
163 described in FERC criteria 2 and 3.

164

165 The Peoria area 69 kV distribution system consists of a western loop, which
166 includes the town of Farmington, an eastern loop, which includes the town of
167 Henry, and several loops within the cities of Peoria and Pekin. The primary
168 purpose of all CILCO 69 kV facilities is to distribute power to our customers
169 through either 69/13 kV or 69/4 kV transformation. CILCO 69 kV facilities and
170 those lines with lower voltages are intentionally routed as close to retail customers
171 as possible and, in fact, connect to individual customers. Although the 69 kV
172 facilities are primarily looped in nature, this is done for the purpose of increasing

173 reliability. Power does not normally flow back into the 138 kV network from any
174 of CILCO's 138/69 kV step down facilities. The power entering the 69 kV
175 facilities is not re-consigned or transported on to other markets. These
176 characteristics fit within FERC criteria 1, 4 and 7 for distribution circuits.

177

178 Q13: Please describe CILCO's generating station terminals and how they have been
179 classified?

180 A13: The substations located at the CILCO-owned generating stations were evaluated
181 to determine how the generators are interconnected into the system and how
182 power flows through the substations into the network. CILCO's generation
183 facilities are connected to ring busses where the power flows through the
184 substation regardless of the operation of the generator. The current use of these
185 facilities (primarily generator step-up transformers and breakers) is solely for the
186 benefit of power production. These facilities connect CILCO's generation to the
187 345 kV, 138 kV and 69 kV networks. In the past these facilities were classified as
188 transmission, however CILCO is re-classifying these facilities as production as
189 provided for in prior Commission Orders.

190

191 Q14: How does CILCO propose to classify its electric facilities under FERC Order
192 888?

193 A14: CILCO proposes to classify its electric facilities as summarized below:

194 1. Facilities operated at 138 kV and above, except radial 138 kV

195 lines, should be classified as transmission facilities.

196 2. Facilities operated at less than 138 kV and radial 138 kV lines
197 should be classified as distribution facilities. This includes
198 facilities designed for 138 kV but presently operated at voltages
199 less than 138 kV. Distribution facilities also include 138/69 kV
200 and 138/13 kV transformers.

201 3. Generation related facilities should be classified as production.

202 These facilities consist primarily of four step-up transformers
203 and associated circuit breakers at our two major power plants,
204 Duck Creek and Edwards. Following Commission precedent,
205 production facilities would be defined as those components
206 through which power flows only when the generator is
207 operating.

208

209 Q15: Are there any clarifications you would like to make regarding CILCO's electric
210 facility asset classification?

211 A15: Yes. There are transmission lines, CILCO identified lines 1394 (one segment of
212 the line) and 1345 (in its entirety), which are looped transmission service that will
213 continue to be classified as transmission. The justification for retaining these lines
214 as transmission service is that power flows through this segment of the loop
215 regardless of whether the customer's load is present.

216

217 CILCO identified distribution line 6923 is a 69 kV circuit from Edwards Power
218 Plant to the R. S. Wallace substation. Although it is not tapped for any
219 distribution substations, line 6923 serves as an express distribution feeder. At the
220 Wallace 69 kV substation bus it is tied to five other 69 kV lines that all distribute
221 power to customer load serving substations. Because the normal direction of
222 power flow through the Wallace substation 138/69 kV transformers (and all
223 similar CILCO facilities) is from the 138 kV system to the 69 kV system this line
224 qualifies as a distribution circuit and meets FERC factors 3 & 7.

225

226 Q16: Would you please summarize the results of your study?

227 A16: I have summarized the results of CILCO's proposed refunctionalization in the
228 following tables:

229

230

231

Power Flow Substations	Prior to Refunctionalization	After Refunctionalization
Function	345, 138, & 69 kV	345, 138, & 69 kV
Transmission	21	19
Distribution	89	91
Total	110	110

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233
234

Lines (circuit miles)	Prior to Refunctionalization			After Refunctionalization		
	138 kV	69 kV	34.5 kV	138 kV	69 kV	34.5 kV
Transmission	285	0	12	267	0	0
Distribution	0	478	206	18	478	218
Total	285	478	218	285	478	218

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Q17: Does this conclude your prepared direct testimony?
A17: Yes it does.