

ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
NATURAL GAS-FIRED, PEAK-LOAD) R01-10
ELECTRICAL POWER GENERATING)
FACILITIES (PEAKER PLANTS))

Testimony on Behalf of
Commonwealth Edison Company

Arlene A. Juracek, P.E.
Vice President, Regulatory and Legislative Services
Commonwealth Edison Company

Steven T. Naumann, P.E.
Transmission Services Vice President
Commonwealth Edison Company

August 16, 2000

1 This testimony is submitted on behalf of Commonwealth Edison Company
2 (“ComEd”) by Arlene A. Juracek and Steven T. Naumann.

3 I, Arlene A. Juracek, am ComEd’s Vice President, Regulatory and Legislative
4 Services. I hold a Bachelor of Science in Mechanics/Mechanical and Aerospace
5 Engineering from Illinois Institute of Technology and a Masters of Management
6 from Northwestern University. I am a Registered Professional Engineer in the State
7 of Illinois. I have been employed by ComEd since 1972. During my employment, I
8 have held positions in nuclear station engineering, sales, division administration,
9 rates, market research, load forecasting and analysis and strategic analysis. I am
10 an officer of both ComEd and Unicom Corporation, ComEd’s parent company, and
11 I serve on the Unicom executive strategic advisory team.

12 My major duties are to provide executive oversight and direction of the
13 Distribution Pricing Department and the development and implementation of retail
14 open access in ComEd’s service territory, as well as state regulatory and legislative
15 activity. I am responsible for the development of ComEd’s retail regulated prices
16 and tariffs, including its delivery services tariffs, and for the development of the
17 business processes required to make open access work, including ComEd’s open
18 access implementation plan.

19 Apart from my ComEd duties, I serve as Chairperson of the Mount Prospect
20 Zoning Board of Appeals.

21 I, Steven T. Naumann, am Transmission Services Vice President of ComEd. I
22 hold a Bachelor of Science degree in Electric Power Engineering and a Master of
23 Engineering degree in Electric Power Engineering, both from Rensselaer
24 Polytechnic Institute in Troy, New York, and a J.D. degree from Chicago-Kent

25 College of Law. I am a Registered Professional Engineer in the State of Illinois. I
26 am also an attorney licensed to practice law in the State of Illinois.

27 After I received my Master's degree in 1972, I served as an engineering
28 officer in the United States Air Force, assigned as the Base Electrical Engineer at
29 Reese Air Force Base, Texas. Upon leaving active duty in 1975, I joined ComEd
30 and have been continuously employed by ComEd since that time. At ComEd, I
31 have held positions in the System Planning Department, Interconnection Planning
32 Section, Wholesale Marketing Department, and Transmission and Distribution
33 (T&D) Regulatory Services Department. I have held temporary assignments with
34 the Mid-America Interconnected Network (MAIN), the regional reliability council
35 responsible for much of the Midwest, first as Assistant Systems Power Coordinator
36 and later as Systems Power Coordinator.

37 My responsibilities include managing the Transmission Services Group, as
38 well as serving on industry committees and task forces such as the Market
39 Interface Committee of the North American Electric Reliability Council and the
40 MAIN Dispute Resolution Committee. My area is responsible for all filings with the
41 Federal Energy Regulatory Commission, or FERC, administration of ComEd's Open
42 Access Transmission Tariff, interfacing with independent power producers
43 regarding interconnection with ComEd's system, training of ComEd personnel on
44 the Standards of Conduct implementing FERC Order No. 889 and implementation
45 of restructuring at the federal level, such as the implementation of a multi-utility
46 regional transmission organization.

47 We are submitting this testimony jointly as a panel. While we are both
48 knowledgeable about many of the details of ComEd's role in the restructured
49 electric industry, appearing together allows us to pool our knowledge of the issues

50 and efficiently respond to any questions that might be raised. We appreciate the
51 opportunity to present this background information on how peaking plants fit into
52 the restructured electric industry.

53 **Background on Electric Power and ComEd**

54 Electric power is not readily stored, and is transmitted through the network
55 of wires from generator to end user essentially instantaneously. When a customer
56 turns on an electric light or appliance, sufficient power for that device must be
57 generated somewhere on the grid at that moment. Electric power, whether the
58 amount needed to run one appliance, or the total amount of power demanded by
59 ComEd's customers at a given moment, is measured in watts. Where the quantity
60 is large, we use the term megawatts, or millions of watts. We refer to the aggregate
61 demand of all of ComEd's customers at a particular moment as the load at that
62 time.

63 The aggregate load of customers in ComEd's service territory varies
64 considerably over the course of a day and over the course of a year. The lowest
65 continuous load observed over the course a year is known as the base load; the
66 highest load observed during a period of time is the peak load for that period. In
67 ComEd's service territory in modern times, the peak load for a year is always
68 during the summer, due to heavy air conditioning use. ComEd's all-time summer
69 peak load was 21,243 megawatts on July 30, 1999 between 2:00 p.m. and 3:00
70 p.m. central time. By contrast, ComEd's all-time peak load during a winter month
71 was 14,484 megawatts on December 20, 1999 between 5:00 p.m. and 6:00 p.m.
72 central time.

73 Base load generating plants are designed to operate more or less year round,
74 supplying an amount of electricity that is used even during periods of relatively

75 light load. Base load plants typically have high fixed costs and low operating costs
76 relative to other plants. It would be costly and inefficient to install base load
77 capacity able to produce 21,243 megawatts of electricity throughout the year in
78 ComEd's territory, because in fact that peak amount of demand is only present for
79 one hour of the year. A peak load plant, or peaker, can be started relatively
80 quickly, and is designed to produce power only during times of heavy demand,
81 ranging from seasonal to hourly. Peakers have high hourly operating costs, but
82 low capital costs compared to base load plants. Because of this cost structure, it is
83 economical to supply peak load, in the relatively few hours required, using this
84 type of plant. To meet summer peak demand levels ComEd uses a combination of
85 power produced by base load plants and peakers, some owned and operated by
86 ComEd, some by merchant generators within ComEd's territory, and some outside
87 ComEd's territory, but connected to the interstate transmission grid.

88 ComEd is a public utility regulated by the Illinois Commerce Commission
89 under the Public Utilities Act. It is responsible for providing adequate, reliable, and
90 efficient electric service to nearly 3.5 million customers throughout northern
91 Illinois. ComEd currently owns and operates a fleet of five nuclear base load power
92 plants that are capable of producing, altogether, about 9,500 megawatts of power
93 at any one time. ComEd also owns and operates a network of high voltage
94 transmission lines and substations, which transfer power from generating stations
95 or from other networks to local areas of load and to other networks. ComEd also
96 owns and operates a system of local distribution lines and substations that carry
97 power to ComEd's customers. Attachment A to our testimony is a map of ComEd's
98 transmission system, along with the major power plants located in ComEd's area.
99 Attachment B is a map produced by the Illinois Commerce Commission showing

100 the major transmission lines, power plants, and utility service territories in Illinois.
101 Attachment C is a map showing the major transmission lines, substations, and
102 power plants in the neighboring area that interconnects with ComEd's system.

103 **Restructuring of the Electric Industry**

104 We will refer throughout our testimony to the “restructuring” of the electric
105 industry. In the traditional electric industry, before this restructuring, electric
106 power was generated, transmitted, and distributed to customers as a single
107 bundled product by a regulated, vertically integrated monopoly, at rates approved
108 by a state commission based on the utility's cost of providing the service. In the
109 restructured industry, a customer's generation, transmission and distribution may
110 be supplied by different companies. Generation, in particular, is becoming a
111 competitive industry, and market forces — supply and demand — will set energy
112 rates. Companies other than utilities may sell power at retail to customers, who
113 will be able to choose among several suppliers. In almost all cases, however,
114 ComEd will continue to deliver the electricity to the customers in its territory, using
115 its network of transmission lines and distribution facilities.

116 **Federal Aspects of Restructuring**

117 The federal aspects of restructuring have, of course, focussed on the
118 interstate aspects of the new power markets. In its landmark Order No. 888, the
119 FERC required transmission owners to open their networks on a nondiscriminatory
120 basis to wholesale transactions using the transmission system. Promoting
121 Wholesale Competition Through Open Access Non-discriminatory Transmission
122 Services by Public Utilities and Recovery of Stranded Costs by Public Utilities and
123 Transmitting Utilities, Order No. 888 (“Order 888”), FERC Statutes and
124 Regulations, Regulations Preambles January 1991 – June 1996 ¶ 31,036 (1996),

125 *order on reh'g*, Order No. 888-A, III FERC Statutes and Regulations, Regulations,
126 Preambles ¶ 31,048 (1997), *order on reh'g*, Order No. 888-B, 81 F.E.R.C. ¶ 61,248
127 (1997), *order on reh'g*, Order No. 888-C, 82 F.E.R.C. ¶ 61,046 (1998).
128 Transmission owners like ComEd have filed open-access transmission tariffs that
129 allow interstate transmission of power by wholesale sellers, including operators of
130 merchant power plants. FERC has held that interconnection service is a type of
131 transmission service covered by Order 888 and thus, ComEd is required to make
132 reasonable efforts to interconnect its transmission and distribution systems with
133 new generation sources.

134 Accordingly, ComEd has pursued a policy of nondiscriminatory cooperation
135 with independent power producers wishing to locate in Northern Illinois and
136 interconnect with ComEd's system. Because one project may, if successfully
137 brought on line, affect the plans of future projects, ComEd maintains a queue
138 primarily based on the date of the developer's initial interconnection request to
139 ComEd.¹ ComEd works with each interested developer to design an efficient and
140 reliable interconnection with ComEd's grid.

141 Once the generation plant is interconnected and operational, ComEd's
142 OASIS electronic bulletin board allows market participants to request the delivery
143 component of transmission service on ComEd's network, which, if available,
144 enables the generator's electric power to move onto the regional grid.

¹ These rules are set forth in ComEd's Open Access Transmission Tariff, Attachment K, and are regulated by the FERC under federal law. ComEd's current queue of independent power producer projects is published at <http://www.comedtransmission.com/ipp.services/ipp.queue.html>.

145 **Illinois Restructuring**

146 In 1997, the Illinois General Assembly recognized that restructuring could
147 benefit Illinois' electric customers, saying:

148 Competitive forces are affecting the market for electricity as a result of
149 recent federal regulatory and statutory changes and the activities of
150 other states. Competition in the electric services market may create
151 opportunities for new products and services for customers and lower
152 costs for users of electricity. Long standing regulatory relationships
153 need to be altered to accommodate the competition that could
154 fundamentally alter the structure of the electric services market.

155 (HB 362, p. 2, lines 108-116). The legislature passed the Electric Service Customer
156 Choice and Rate Relief Law of 1997 (the "Illinois Restructuring Legislation"), which
157 set the course for electric restructuring in Illinois. By May 2002, all customers will
158 be free to select the vendor of their electricity. The transition to customer choice is
159 already under way; some non-residential customers have been able to choose their
160 electric provider since October 1 of last year. The electric utilities, however, must
161 continue to offer to deliver the power, from whatever source and whatever vendor,
162 to retail customers in their service territories. This delivery service and the rates
163 charged for it continue to be regulated by the Illinois Commerce Commission.
164 ComEd, like other Illinois utilities, has established, with Commerce Commission
165 approval, tariffs and rates for electric delivery service.

166 Under the Illinois Restructuring Legislation, it is not incumbent on public
167 utilities to build new generating plants. In fact, the legislature took away from the
168 Commerce Commission the authority to order a utility to build a new plant. As
169 electric load in Illinois grows, market forces — that is, increased prices for
170 wholesale power — will encourage the new generation necessary to provide
171 sufficient energy to all that need it. By the same token, abundant generation will
172 cause lower prices, ultimately signaling the market that there is enough

173 generation. In the restructured industry, the financial risk of new generation
174 projects is on private investors, not public utilities and their customers. ComEd's
175 role with respect to new independent plants is to work with the developers to
176 interconnect them with ComEd's grid, making the power available to customers in
177 the region. Since the effective date of the Illinois Restructuring Legislation, ComEd
178 has worked with numerous developers to design interconnections with ComEd's
179 grid.

180 Before restructuring, there were two primary regulatory schemes affecting
181 the construction of a new plant. The first was at the Commerce Commission,
182 which would decide whether the new plant was necessary to providing adequate,
183 efficient, and reliable service at the least cost. The second was the environmental
184 agencies, such as the Illinois Environmental Protection Agency, which would
185 decide whether to issue the necessary permits covering issues such as air
186 pollution. (In the case of nuclear plants, the federal Nuclear Regulatory
187 Commission also played an important role.) Local input was limited, because a
188 state Certificate of Public Convenience and Necessity generally preempts local
189 ordinances such as zoning, and regional public utility power plants and
190 transmission lines are considered matters of statewide, not local interest.

191 In the restructured industry, in which generation is built by private
192 companies based on market factors and ratepayers do not bear the cost or risk of
193 new plants, the Commerce Commission does not examine the need for the project.
194 It can be assumed that the project would not be proposed if electrical demand was
195 not sufficient to make the expensive new plant profitable. The environmental
196 regulation is unchanged, and private companies must meet the same standards as
197 a public utility would. However, the local counties and municipalities now have a

198 significant role to play, using zoning and other land use regulation to direct new
199 plants to suitable locations. As Ms. Juracek is aware based on her zoning board
200 experience in Mount Prospect, local municipalities are acutely interested in the
201 location of new privately owned facilities.

202 **ComEd's Position on Restructuring and New Generation**

203 ComEd fully supports electric restructuring and believes that the
204 installation of new generation in response to market forces will increase
205 competition, while maintaining system reliability. ComEd believes that the optimal
206 situation is for Northern Illinois to have a local generation portfolio owned by a
207 number of different electric suppliers with market incentives to construct new
208 generating capacity, which together with resources from other utilities, would meet
209 the area's increasing needs over time. All customers in the ComEd service
210 territory, whether they continue to purchase their electricity from ComEd or choose
211 an alternate supplier, will benefit from this new generation. New generation in the
212 ComEd service territory will increase the reliability of service overall, especially
213 during times of high demand for electricity, by having more generation available.
214 Having this new generation be within ComEd's transmission "control area" — the
215 portion of the Midwestern electrical grid operated by ComEd — is particularly
216 advantageous because delivery of the energy from these plants does not depend on
217 the availability of transmission from others. The further away from a load a
218 generating source is located, the more transmission systems are impacted by flows
219 from the plant and the more chance there is of flow from the plant to the load being
220 restricted by constraints on the transmission system. For example, transmission
221 constraints have occurred nearly daily this summer between generation in the
222 northern states and loads in the southeast and southwest.

223 To help promote an efficient generation market, ComEd has taken two steps
224 that would have seemed radical or even unthinkable in the electric industry of only
225 a few years ago. First, ComEd sold its own fossil-fuel powered generating stations
226 to a private company, Midwest Generation EME. ComEd has agreed to purchase
227 power from Midwest Generation EME for several years to supply ComEd's
228 customers. Second, ComEd has encouraged independent power producers to
229 locate in Northern Illinois. Independent power producers typically are not building
230 the coal-fired or nuclear generating plants of past decades, but rather gas-fired,
231 often smaller, peak load units. Encouragement of new independent power
232 producers means that the electric supply of this region will become more diversified
233 and more geographically dispersed.

234 One of the principal ways in which ComEd has sought to encourage power
235 production by independent producers is by studying its transmission system to
236 determine the most convenient and, from an electrical system standpoint,
237 beneficial locations for new generation. ComEd did this because ComEd's
238 transmission system has developed over many decades to move power from
239 ComEd's own generating units to customers in Northern Illinois, and to
240 interconnect ComEd's facilities with those of its neighbors. As with any such
241 system, there are sites where interconnection with new generation is comparatively
242 more beneficial from the standpoint of the electrical operation of the transmission
243 system. ComEd analyzed the intricate network of its transmission system and
244 identified locations where a new generating facility could connect to the system in a
245 manner that maximized power delivery from the facility while minimizing
246 modifications that would have to be made to the existing transmission network to
247 accommodate that generation.

248 In June 1998, ComEd published a list of 14 preferred sites for the
249 interconnection of new facilities. A copy is attached as Attachment D to this
250 testimony. This list was based solely on electrical requirements and the ability of
251 the electrical system in a particular area to accept the inflow of power from a
252 generator without major new upgrades or expansions. It does not reflect any
253 judgment about land use issues or the availability of fuel at a particular location.

254 **Effect of Stringent New Regulation of Peaking Plants**

255 With the federal and Illinois laws currently in effect, there is strong interest
256 among new merchant generators to locate in Illinois. Even so, not all of the
257 proposed plants have been successfully completed. Some projects have failed to
258 obtain the requisite financial backing. Others have failed to obtain local siting
259 approval. There is no indication that the current regulatory scheme is thrusting
260 too much generation on Illinois.

261 Heightened legal restrictions, such as new siting or environmental standards
262 stricter than those applicable in other states, or new layers of regulation of non-
263 utility generation projects, could reduce interest in building new generation in
264 Illinois. A reduction in new generation could fundamentally alter the wholesale
265 market for electricity. A critical concern would be that the wholesale price of
266 electricity could rise dramatically. In Illinois and elsewhere, there have been
267 wholesale price “spikes” in recent years when electrical energy has cost utilities in
268 excess of \$5 per kilowatt-hour. (Last year, ComEd sold electric power to end users
269 for, on average, \$0.074 per kilowatt-hour.) These skyrocketing prices have
270 occurred when very high demand was coupled with constrained generation and
271 transmission supply.

272 Similarly, other states — notably California — have been facing shortages of
273 electricity this summer, because the demand levels are approaching the total local
274 generation capacity plus the transmission import capacity. Unlike Illinois, in
275 which the market for electric energy is a primary factor in determining whether
276 more generation will be built, in California, the state retains a pervasive regulatory
277 role in evaluating and approving new generation. California also regulates the
278 wholesale prices of power, rather than allowing the free market to set the price. As
279 a result, California has seen very little new generation built since it began its
280 restructuring, and the existing generation may not be sufficient to meet growing
281 demand. This summer California customers have experienced high prices and
282 curtailments as demand has approached capacity. Illinois currently stands ahead
283 of many other states in protecting its electric customers from this sort of
284 instability. The availability of sufficient peaker plants should smooth out price
285 spikes, to the benefit of all.

286 **Additional Environmental Regulation**

287 The Governor's inquiry to this Board questioned whether additional air
288 pollution regulation of peaker plants is necessary. As the Board is aware, Illinois
289 law requires the Illinois Environmental Protection Agency ("IEPA") to assure that
290 any proposed source of air pollution will meet or exceed all applicable federal and
291 state air pollution control requirements before IEPA may issue an air pollution
292 permit to the source. These requirements include all applicable emission
293 standards, the stringent federal New Source Review and Prevention of Significant
294 Deterioration requirements and New Source Performance Standards.

295 In its June 15, 2000 letter to IEPA, USEPA confirmed that the IEPA is
296 appropriately applying federal air pollution control requirements during IEPA's

297 review of proposed peaker plants. Further, USEPA emphasized that IEPA's
298 permitting of peaker projects assures protection of health based National Ambient
299 Air Quality Standards through the imposition of suitable short term, including
300 hourly, emission limits. IEPA was commended for requiring dispersion modeling
301 for even those proposed peaker plants that qualify as "minor sources." This
302 practice is even more stringent than that applied for other types of non-major
303 sources of air pollution.

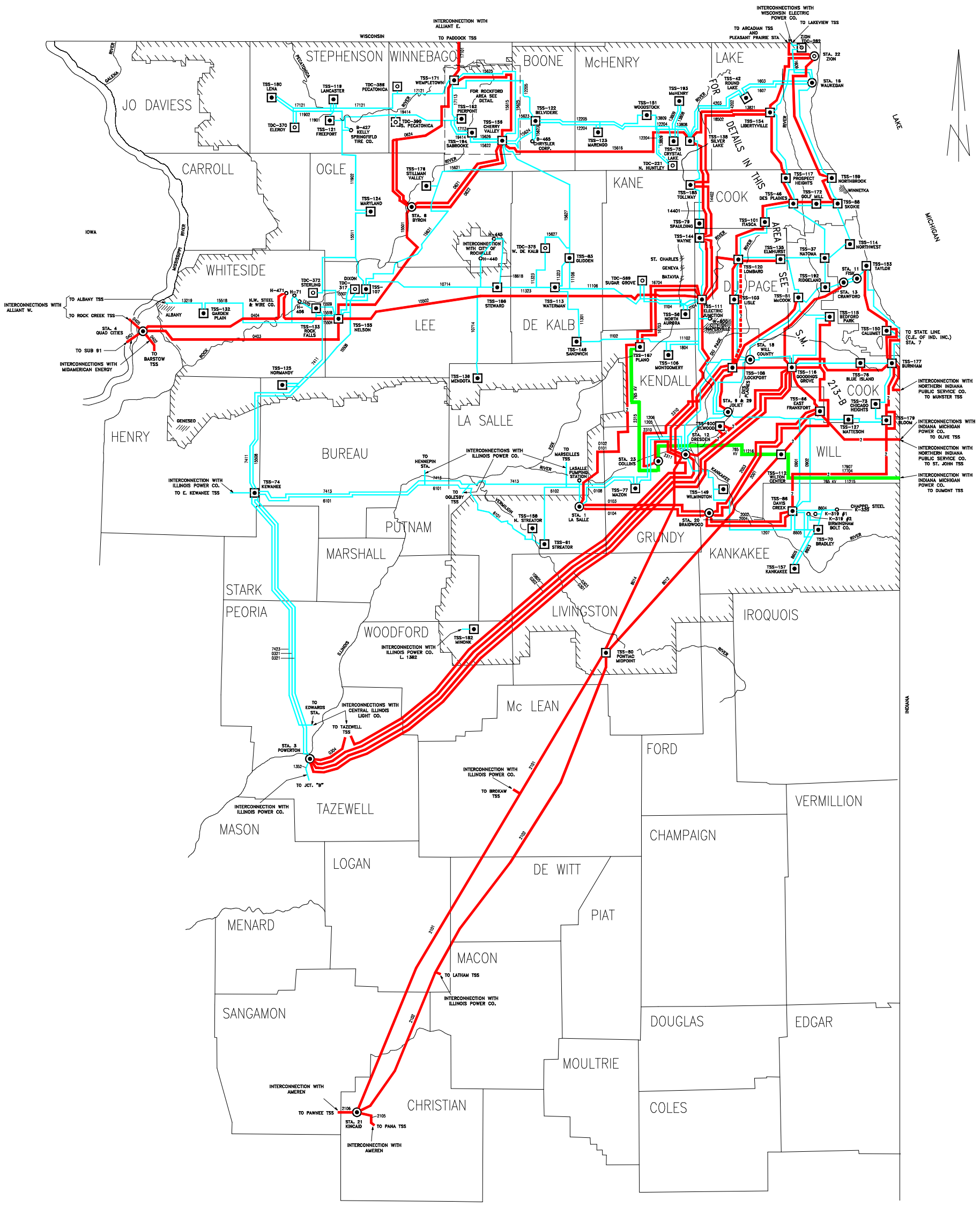
304 As confirmed by USEPA and IEPA, under existing laws, regulations and
305 procedures, plans for proposed peaker plants are already being carefully
306 scrutinized. Through its air permitting process, IEPA assures that neither local,
307 state nor national air quality is being threatened or compromised by the addition of
308 any peaker plants. And, like other generating facilities, peaker plants of significant
309 size will be subject to the evolving air pollution standards set by the Board through
310 Illinois' State Implementation Plan.

311 Further, as the owners and operators of any existing or proposed peaker
312 plant can well describe, there is extensive analysis of potential noise and water
313 impacts during the planning stages of any peaker plant. These plants have been
314 designed to meet and, in many cases, exceed the applicable noise standards so as
315 to prevent any potential disturbance to surrounding neighbors. Water impacts,
316 including with regard to any potential contamination and water supply, are also
317 carefully assessed during the planning and development of any peaker plant.
318 Stringent state requirements regulate the discharge of contaminants while local
319 authorities often directly oversee issues of water supply. In addition, the impact of
320 peaker plants and other facilities on water resources and usage will be closely
321 examined by Governor Ryan's newly appointed Water Resources Advisory

322 Committee, which will present its recommendations to the Governor by December
323 2000.

324 **Conclusion**

325 ComEd supports the restructuring of the electric industry as crafted by the
326 Illinois Legislature and the Federal Energy Regulatory Commission. A critical
327 feature of restructuring is the availability of new privately developed electric
328 generation to meet the State's increasing demand for power. The regulatory
329 scheme currently in effect applies established state and federal standards for air,
330 water, and noise pollution, while local governments control the siting process using
331 traditional zoning authority. New or more stringent regulation is not warranted,
332 and would likely have a negative effect on the State's generation capacity.

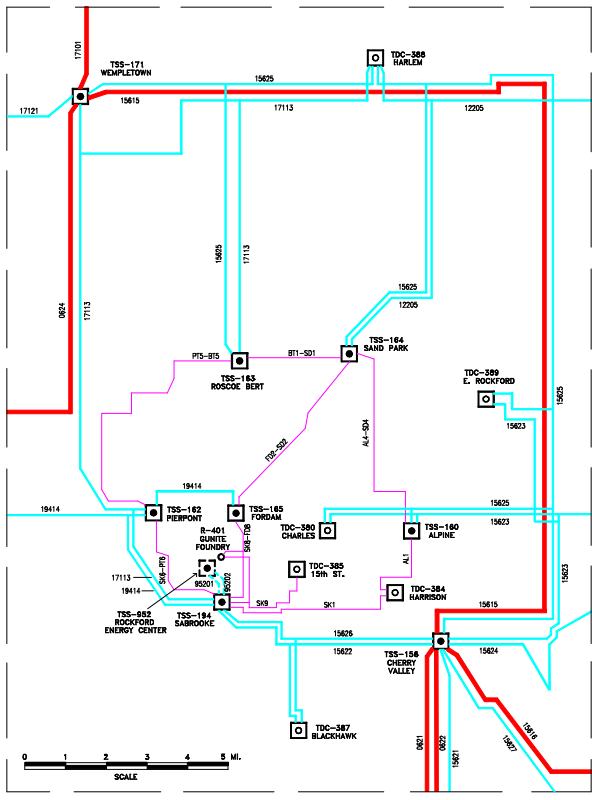
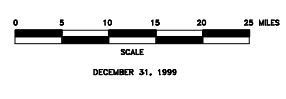


NOTE
 ACTUAL POSITIONS OF LINES ON MULTI-CIRCUIT RIGHTS-OF-WAY
 MAY VARY FROM THOSE SHOWN. REFER TO SM 16 MAPS FOR THIS
 INFORMATION.

COMMONWEALTH EDISON COMPANY OUTER TRANSMISSION SYSTEM

- LEGEND
- IN SERVICE**
- 765 KV LINE
 - 345 KV LINE
 - 138 KV LINE
 - 69 KV LINE
- PROJECTS TO BE COMPLETED IN 2000**
- 345 KV LINE
 - 138 KV LINE

- NUMERAL IN LINE INDICATES NUMBER OF LINES BETWEEN COMMON POINTS
- ⊙ GENERATING STATION
 - ⊙ SYNCHRONOUS GENERATOR STATION
 - ⊠ TRANSMISSION SUBSTATION—765,345,138 OR 69 KV
 - ⊡ TRANSMISSION DISTRIBUTION CENTER
 - ELECTRIC SERVICE STATION—345,138 OR 69 KV
 - ⊞ MUNICIPALITY SUPPLYING ELECTRIC SERVICE
 - ▬ TERRITORIAL BOUNDARY
 - CIRCUIT BREAKER



ROCKFORD
 AREA DETAIL

SYSTEM AS OF 12-31-99

2-18-99 ANNUAL REVISION	JRW
5-15-99 ANNUAL REVISION	HL
2-19-99 ANNUAL REVISION	HL
2-19-99 ANNUAL REVISION	HL
DATE	REVISION

ComEd Commonwealth Edison Co.
 Chicago, Illinois

TRANSMISSION POLICY, PLANNING & SERVICES

S.M. 213-A

**OUTER
 TRANSMISSION SYSTEM**

SCALE: AS SHOWN DATE: 2-1-97

TRANSMISSION PLANNING MANAGER