

STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

COMMONWEALTH EDISON COMPANY :
: Application of Commonwealth Edison Company :
: for a Certificate of Public Convenience and :
: Necessity, under Section 8-406 of the Illinois Public : No. 00-0660
: Utilities Act to construct, operate and maintain a :
: new electric transmission line in Kankakee County, :
: Illinois. :

Direct Testimony of
NEIL F. KAUP, P.E.
Project Engineer
Transmission Engineering Department
Commonwealth Edison Company

OFFICIAL FILE

I.C.C. DOCKET NO. 00-0660
ComEd Exhibit No. 5
Witness _____
Date 12/01 Reporter [Signature]

1 Q. What is your name and business address?

2 A. Neil F. Kaup, 500 Joliet Road, Willowbrook, Illinois 60521.

3 Q. What is the purpose of your direct testimony?

4 A. Mark Lorenz, whose direct testimony was pre-filed in this docket, is no longer with
5 ComEd. I will be testifying on the subjects that Mr. Lorenz was going to cover,
6 specifically, the engineering of the proposed transmission line.

7 Q. What is your position at ComEd?

8 A. I am a Project Engineer in the Transmission Engineering Department.

9 Q. What are your duties in that position?

10 A. I am responsible for the structural and electrical design of overhead transmission lines.
11 As the project engineer for a particular project, I have primary responsibility for all
12 design elements.

13 Q. How long have you been a Project Engineer at ComEd?

14 A. Since 1992.

15 Q. What other work experience do you have?

16 A. I was at Stone & Webster Engineering Corporation in Denver from 1990 to 1992. I held
17 the positions of Project Engineer and Senior Transmission Engineer in the Civil/Structural
18 Division.

19 From 1988 to 1990, I was with Lee Wan & Associates in Golden, Colorado,
20 where I was Group Leader and Senior Engineer in the Transmission Line Design Section.

21 From 1987 to 1988 I worked at R.W. Beck & Associates in Denver as a
22 Supervising Engineer in the Central Design Division.

23 From 1985 to 1987 I worked at Jersey Central Power & Light Company in
24 Morristown, New Jersey. I was a Project Engineer in the Transmission Lines
25 Department.

26 From 1981 to 1985, I was a Design Engineer in the Transmission Line Electrical
27 Branch in the Department of Energy's Western Area Power Administration.

28 Altogether, I have over twenty years of experience encompassing all aspects of
29 the design of overhead transmission lines, ranging from 34.5 kV to 345 kV, and including
30 new construction, additions to existing facilities, voltage upgrading, and reconductoring.

31 Q. Have you worked on other projects similar to this one, involving a new overhead 138 kV
32 transmission line?

33 A. Yes. I have worked on approximately twenty such projects as a project engineer or
34 design engineer.

35 Q. Please describe your professional education.

36 A. I have a Bachelor of Science in Civil Engineering from the University of Colorado at
37 Boulder. My emphasis was in Structural Analysis and Design.

38 Q. What professional designations do you hold?

39 A. I am a Registered Professional Engineer in the State of New Jersey.

40 Q. How have you become familiar with the Petition in this proceeding?

41 A. As ComEd's Project Engineer for this line, I have the responsibility for the design and
42 engineering of the line. I have also analyzed possible alternative designs and routes.

43 Q. To the best of your knowledge are the statements set forth in the Petition true and correct?

44 A. Yes, they are.

45 Q. What is the purpose of the Petition?

46 A. To obtain a Certificate of Public Convenience and Necessity authorizing ComEd to
47 construct, operate, and maintain a new 3.2 mile long 138 kilovolt ("kV") electric
48 transmission line (the "Line") from an existing ComEd transmission substation, Davis
49 Creek TSS 86, to new generating facilities at Kankakee Energy Center TSS 956.
50 TSS 956 will be the generating station being developed by an independent power
51 producer, an entity known as Duke Energy North America LLC. ("Duke").

52 Q. What is the purpose of your testimony in support of this Petition?

53 A. The purpose of my testimony is to describe the facilities which ComEd proposes to
54 construct; to describe the process by which ComEd selected the route for those facilities; to

55 explain why the proposed route and design should be approved; and to describe the process
56 of constructing the proposed facilities and the cost thereof.

57 Q. What does Exhibit A to the Petition show?

58 A. Exhibit A shows the proposed route for the Line, as well as the typical types of poles and
59 the proposed typical pole alignment on the right-of-way. It shows how the two new
60 circuits will be supported by double-circuit steel poles, supporting a total of six circuit
61 conductors and two static wires. While Exhibit A fairly represents the typical pole types
62 and alignments within the right-of-way, the design and location of individual poles may
63 vary, as required by final engineering and construction needs.

64 Exhibit A shows where the Line crosses over federal, state, and county highways
65 and other major streets. It also shows the location of railroad tracks, the name of the
66 railroad owning those tracks, the location of any pipelines and major power or
67 communication lines to be crossed or paralleled within one-half mile of the line, and the
68 names of the utilities owning or operating such lines. As Mr. Dyslin testifies, additional
69 power and communication lines routinely associated with the local delivery of utility and
70 telecommunications services also exist within one-half mile of the proposed line and
71 substations, but are too numerous to show on Exhibit A.

72 Q. Please describe the route of the Line.

73 A. As described more fully in Exhibit B to the Petition, the Line begins at ComEd's existing
74 Davis Creek TSS 86 (labeled point "A" on Exhibit A), and continues due east for 3.2

75 miles to Duke Energy Center TSS 956, the proposed new substation (labeled point "C"
76 on Exhibit A).

77 Q. Please describe the circuit configuration and the type and design of the Line.

78 A. The Line will consist of two-circuit steel poles supporting two 138 kV circuits and two
79 static wires.

80 Q. Please describe the circuit conductors utilized on the line.

81 A. The circuits will each use three 2226 kcmil steel-reinforced aluminum ("ACSR") circuit
82 conductors, each consisting of a pair of 1113 kcmil ACSR sub-conductors, twisted together
83 with an equivalent diameter of 2.061 inches. The static wires, installed above the circuit
84 conductors for lightning protection, will each consist of seven grounded alumoweld
85 (aluminum-clad steel) strands. The 138 kV circuits will be three-phase, three wire. The
86 circuit conductors will be strung in a vertical phase configuration.

87 Q. Why is ComEd proposing to use the route specified on Exhibit A?

88 A. The proposed Line is parallel to and is within the same right-of-way as an existing
89 transmission line. This is the shortest and best route for adding an additional line, and will
90 allow ComEd to meet the customer's in-service date.

91 Q. Did ComEd seek alternative routes to the Line?

92 A. We did take a look, but there are no practical alternatives since we already have a right-of-
93 way extending in a straight line from the substation to the new plant. Any other route
94 would necessarily be longer, more costly, and more difficult to acquire.

95 Q. Will the proposed Line be constructed in accordance with all applicable federal and state
96 regulations and orders of the Illinois Commerce Commission?

97 A. Yes. The Line will be constructed in accordance with all applicable regulations and orders
98 of the Illinois Commerce Commission, including 83 Ill. Admin. Code Part 305, and the
99 National Electric Safety Code.

100 Q. Will the proposed Line produce a magnetic field?

101 A. Yes, all electrical lines do.

102 Q. Is it anticipated that any problems of inductive interference will result from the line?

103 A. No.

104 Q. How will the construction of the Line be managed?

105 A. The Line will be installed by both ComEd forces and by contractors supervised by ComEd.
106 The contracts involved will be managed and field inspection and construction review
107 provided by ComEd's Project and Contract Management Organization (formerly known as
108 the Contract Services Department). This organization has many years of experience in
109 managing this type of work and is adequately staffed to assure all work is done per
110 specifications in a complete workmanlike manner. The majority of ComEd's over five
111 thousand miles of transmission circuits have been installed by outside contractors under
112 direction of this organization and its predecessors.

113 Q. What is the estimated cost of the construction of the proposed transmission Line?

114 A. The estimated direct cost of the Line is \$5.690 million in 2002 dollars.

115 Q. How long will it take to build the line?

116 A. Making reasonable assumptions about weather, it will take about four months to build
117 the line.

118 Q. Does this conclude your testimony?

119 A. Yes.