

STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

CHIEF CLERK'S OFFICE

IN RE:)
)
MIDAMERICAN ENERGY COMPANY)
)
Petition for Declaratory Ruling determining)
that an additional Certificate of Public)
Convenience and Necessity pursuant to)
Section 8-406 of the Illinois Public)
Utilities Act is not necessary to add a)
161,000 volt electric transmission circuit)
to existing facilities in Rock Island County,)
Illinois.)

DOCKET NO. 05- 0642

DIRECT TESTIMONY
OF
KAREN S. PEDERSEN

- 1 Q. Please state your name and business address.
- 2 A. My name is Karen S. Pedersen. My business address is 106 East Second Street,
3 Davenport, Iowa 52801.
- 4 Q. By whom are you employed and in what capacity?
- 5 A. I am employed by MidAmerican Energy Company (MidAmerican). I am a
6 Senior Engineer in the Electric System Planning Department.
- 7 Q. What is your educational and employment experience?
- 8 A. I received a Bachelor of Science in Electrical Engineering in 1977 from Iowa
9 State University. In 1989, I received a Master of Business Administration degree

10 from Bentley College, Waltham, Massachusetts. I have been employed by
11 MidAmerican since 1998 and its predecessor company, Iowa Power and Light
12 Company, from graduation to 1984. I was employed by Boston Edison Company
13 from 1984 to 1998. My duties included working as an engineer in Electric
14 System Planning for Iowa Power and Light Company. My duties at Boston
15 Edison Company included Senior Research Engineer in Rates, Senior Engineer in
16 Electric System Planning and Principal Engineer in Marketing. I am a licensed
17 Professional Engineer in Iowa, Illinois and Massachusetts.

18 Q. Do you belong to any professional associations?

19 A. I am a member of the Institute of Electrical and Electronics Engineers (IEEE) and
20 have served as Chair of the Executive Committee of the IEEE's Iowa-Illinois
21 Section. I am also a member of the National Society of Professional Engineers
22 (NSPE) and served one year on the Executive Committee of NSPE as Vice
23 President representing Professional Engineers in Industry (PEI) and two years on
24 the Board of Directors of NSPE as Vice President representing the North Central
25 Region. I now serve as a trustee on the Educational Foundation.

26 Q. What is the purpose of your prepared direct testimony in this proceeding?

27 A. The purpose of my testimony is to discuss the need for the double-circuit 161 kV
28 line connecting between MidAmerican's existing Substation 18 in Rock Island,
29 Illinois and the new Oak Grove substation to be constructed in rural Rock Island
30 County, Illinois.

31 Q. What are your responsibilities with regard to this project?

32 A. I am responsible for the planning study and general configuration for the
33 Oak Grove Substation and the transmission lines connecting to the Oak Grove
34 Substation.

35 Q. Please discuss the need for the double-circuit 161 kV line.

36 A. MidAmerican is proposing to build a new 345-161 kV substation called
37 Oak Grove Substation in rural Rock Island County, Illinois. The Oak Grove
38 Substation would be built on land owned by MidAmerican under and immediately
39 adjacent to MidAmerican's Substation 39 – Substation 93 (Louisa) 345 kV
40 transmission line. The existing 345 kV line would be bisected and two 345 kV
41 line terminals would connect the line to the Oak Grove Substation. The existing
42 Substation 18 – Galesburg 161 kV line would be bisected and connected to the
43 Oak Grove Substation. A 345-161 kV transformer would be installed to create a
44 path for power to flow from the 345 kV system to the 161 kV system. In
45 conducting studies to analyze the effect of the Oak Grove Substation on the
46 Quad Cities area electric system, it was noted that the existing power-carrying
47 capability of the existing conductor on the 161 kV line connecting between
48 Oak Grove Substation and Substation18 was not sufficient to carry the expected
49 power flows. It is, therefore, necessary to construct two 161 kV transmission
50 lines between the Oak Grove Substation and Substation18.

51 Q. Why is it necessary to build two 161 kV transmission lines from Oak Grove
52 Substation to Substation 18?

53 A. MidAmerican's criteria is to plan for the outage of at least one transmission
54 facility at peak load with firm energy transactions accounted for. The electric

55 system should be able to operate within its capability with any one facility out of
56 service. Consideration is also given to conditions in which two facilities are out
57 of service at the same time. In the case of the Oak Grove Substation, if there was
58 only one 161 kV line from the Oak Grove Substation to Substation 18 and that
59 line was taken out of service for maintenance or otherwise outaged, the
60 Oak Grove Substation would be isolated from the Quad Cities area 161 kV
61 system, thereby failing the Oak Grove Substation's intended primary design
62 function of reducing loading on other Quad Cities area 345-161 kV transformers.
63 Two 161 kV transmission lines are needed between the Oak Grove Substation and
64 Substation 18 for the new Oak Grove Substation to perform adequately according
65 to its intended purpose.

66 Q. Does this conclude your prepared direct testimony?

67 A. Yes, it does.