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Subject: MidAmerican Energy Company Comments - NRC Docket Nos. 50-254 and 50-265

To the Nuclear Regulatory Commission:

Attached please find the submission of MidAmerican Energy Company in NRC Docket Nos. 50-254 and 50-265. Please refer any questions concerning the attached submission to me. Thank you.

11/13/03

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January 27, 2004

Chief Rules and Directives Branch
Division of Administrative Services
Office of Administration
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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Re: Quad Cities Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Comments Concerning Draft Plant-Specific Supplement 16 to the
Generic Environmental Impact Statement Regarding License
Renewal For Quad Cities Nuclear Power Station

Letter from Louis L. Wheeler (USNRC) to John Skolds (Exelon Generation
Company, LLC), "Request for Comments on the Draft Plant-Specific Supplement 16
to the Generic Environmental Impact Statement Regarding License Renewal for Quad
Cities Nuclear Power Station," dated November 4, 2003

This letter is being submitted in response to the NRC's request for comments concerning the
draft plant-specific Supplement 16 to NUREG-1437, "Generic Environmental Impact
Statement for License Renewal of Nuclear Plants," regarding the renewal of operating
licenses for Quad Cities Nuclear Power Station, Units 1 and 2, for an additional 20 years of
operation. MidAmerican Energy Company appreciates the opportunity to comment on draft
Supplement 16 to NUREG-1437. We agree that the adverse environmental impacts of
license renewal for Quad Cities Units 1 and 2 are not so great that preserving the option of
license renewal for energy-planning decision-makers would be unreasonable.

MidAmerican's response to the comments of Mr. Bennett Brown, regarding wind power as a
possible substitute for Quad Cities Units 1 and 2, is provided in Attachment 1. Mr. Brown's
comments were offered at the NRC's public comment hearing held on December 16, 2003.
His comments begin on page 77, line 6, of the official transcript of those proceedings.

Sincerely,

Attachments

ATTACHMENT 1

Comments in Response to the Statement of Mr. Bennett Brown

Regarding Wind Power

At the Hearing of December 16, 2003

Comments of MidAmerican Energy Company

By Thomas J. Budler, Wind Project Manager

Below are the comments of MidAmerican Energy Company in response to Mr. Bennett Brown's characterization of wind power beginning on page 77, line 6 of the official transcript of proceedings of the Nuclear Regulatory Commission, on December 16, 2003, concerning Exelon Generation Company's application for license renewal for Quad Cities Nuclear Power Station ("QCNPS"). MidAmerican possesses a 25% ownership share in QCNPS. MidAmerican is also currently developing a 310 MW wind generation project in Iowa, and is a participant in existing wind generation projects as well.

As an overall comment, MidAmerican would note that it is not opposed to wind-generated power as evidenced by our past and present participation in wind generation projects. However, MidAmerican sees wind-powered generation as a complement to, and not a viable substitute for, base load nuclear generation already in existence.

In his comments, Mr. Brown attempts to refute the four arguments against utilizing wind power that were advanced in the Plant Specific Environmental Impact Statement ("SEIS"). In summary, the four points Mr. Brown states he is refuting are as follows: (1) That the potential for wind power development, in Illinois, to replace QCNPS, is only "marginally present;" (2) That it is "enormously expensive" to develop wind resources; (3) That the land required for development of wind resources is "significant;" and (4) That wind-powered generation can provide only "intermittent power." MidAmerican addresses Mr. Brown's comments on each of these points, below.

1. Availability of Sufficient Wind Resources. The wind power capacity that would be necessary to replace the QCNPS is not available in Illinois. Mr. Brown recognizes that in his testimony, at pages 78-79 of the above-mentioned transcript, where he also touts Iowa as the location for substitute capacity. The SEIS noted that a capacity of 4,200 megawatts would be necessary to replace the capacity of QCNPS. In fact, the necessary capacity would probably be even greater. MidAmerican's experience has shown that MAPP, the NERC reliability council with which MidAmerican's wind generation is accredited, actually credits wind capacity at approximately 17% of rated nameplate. This means that to replace the generating capacity of the QCNPS some 10,729 megawatts of wind generation would actually have to be installed.

Mr. Brown also notes, at page 77 of the transcript, that 4,200 megawatts of wind generation would be about 1,000 megawatts of consistent power production throughout the year. In fact, during MidAmerican's research for development of its Iowa Wind Power Project, the Company discovered historical wind resource records showing that for approximately 10% of the available operating time there would be insufficient wind to produce any wind generation at all. Moreover, these historical records show that for approximately 37% of available operating time the wind generating facilities would be generating at less than 25% of

nameplate capacity. Therefore, for nearly 50% of the available operating time, a wind facility in Iowa would likely be operating at less than 25% of its rated capacity.

2. Costs of Wind Power. Mr. Brown notes that the NRC documents mention it is enormously expensive to develop wind resources. (Transcript, pp. 79 – 81) Mr. Brown attempts to refute this statement with second-hand information from an electric co-op representative who states that the co-op's wind generation production cost is 2.0 to 2.5 cents/kWh. MidAmerican's knowledge of the wind industry would suggest that approximately 5.0 cents/kWh is the more commonly accepted production cost figure for wind generation. That cost can be reduced through use of government subsidies (e.g., the federal Production Tax Credit and CO₂ credits), however, it is important to note that the federal Production Tax Credit expired on December 31, 2003, and has not yet been renewed by Congress. The federal Production Tax Credit is currently valued at 1.8 cent/kWh and the value of CO₂ credits is currently estimated at 0.4 cents/kWh, though there is still not a mature market for trading CO₂ credits.

In contrast, MidAmerican's existing coal units generate at an average cost of 2.1 cents/kWh, existing nuclear units generate at a cost of 2.7 cents/kWh, and combined cycle units generate at approximately 6.0 cents/kWh. However, it should be noted that all of these units are counted as reliable and dispatchable¹ for capacity during system peak. It should be noted that wind generation is neither reliable nor dispatchable in any given specific time of need for capacity or generation.

Mr. Brown asserts that it is inappropriate to compare the cost of wind generation with generation based on other fuels. MidAmerican would agree that wind generation cannot be compared to other dispatchable generation since wind is not dispatchable based on system load. Wind generation is only dispatchable when the wind resource is available. However, with the above-noted subsidies, and to the extent that wind is available, MidAmerican's wind facilities will displace all other generating units in the dispatch order. This utilization makes wind generation a very important part of MidAmerican's overall generation portfolio.

In his cost discussion, Mr. Brown also ignores the significant cost of transmission system impacts. (Mr. Brown appears to assert that his 2.0 to 2.5 cents/kWh does include outlet transmission costs, but then apparently ignores the costs of transmission system impacts.) As a member of MAPP, MidAmerican is required to meet MAPP's reliability criteria. A requirement of MAPP is that the transmission system must be sufficient such that the generation is able to deliver rated output for certain system conditions. As discussed in number 1, above, this means the transmission system would have to be upgraded sufficiently to address all impacts for the additional 10,729 megawatts of nameplate wind generation.

¹ "Dispatchable" as used herein means the ability to control generation output to match load and economics requirements.

This could be a very significant cost when taken in consideration with a wind project location and existing transmission system constraints.

3. Land Requirements for Wind Generation. Mr. Brown also comments (Transcript, pp. 81-82) on the NRC document noting the land use for a wind facility would be significant. Mr. Brown states that a two megawatt turbine required only a quarter of an acre of actual land use and that farmers are still able to utilize much of their land. This in fact is fairly consistent with what MidAmerican has seen with its wind project development. What Mr. Brown fails to account for is the necessary spacing for capture of the wind resource. Wind turbines must be sufficiently spaced apart to maximize capture of the available wind energy. If the turbines are too close together one turbine can impact the efficiency of another turbine. Based on MidAmerican's experience the appropriate spacing of wind turbines equates to approximately 72 acres per megawatt. This would mean the project footprint for 10,729 megawatts would entail over 772,000 acres. This is a more significant number than that cited by Mr. Brown.

4. Intermittent Power. Mr. Brown notes (Transcript, pp. 82-84) that the SEIS discusses the intermittent nature of wind. The lack of wind energy dispatchability is discussed in number one, above. Mr. Brown also discusses the short- and medium-term fluctuations in wind generation, noting that a penetration of 25% is viable with no change to the transmission grid. MidAmerican plans to install 310 MW of wind generation in the next three years, in Iowa. As of May 2003, this 310 MW represents approximately 7% of MidAmerican's nameplate generation. Transmission system impact studies note nineteen separate upgrades necessary to accommodate this generation. There would likely need to be significant changes and related investments in the transmission grid to accommodate an additional 18% penetration. To say that no changes would be required in the transmission grid and that Iowa could very easily accommodate a 25% penetration of wind energy is clearly not correct.

In his own discussion, Mr. Brown is not clear whether the 25% penetration he notes is nameplate capacity or actual generation. He does go on to discuss the need to increase generation capacity during peak periods. This is also the same discussion noted in number 1, above. As such, existing MAPP requirements would necessitate the building of 10,729 megawatts of wind generation to cover this peak capacity need.

Respectfully submitted by: Thomas J. Budler
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