

**STATE OF MINNESOTA  
BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION**

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Chair  
Commissioner  
Commissioner  
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Commissioner

In the Matter of Establishing Generic Standards for Utility Tariffs for Interconnection and Operation of Distributed Generation Facilities under Minnesota Laws 2001, Chapter 212

DOCKET No.: E999/CI-01-1023

July 15, 2003

**RE: The DG Coalition Additional Comments on the ‘DG Interconnection Technical Requirements’ Document**

The DG Coalition would like to take this opportunity to commend the Minnesota Public Utilities Commission (Commission) for its careful observation and appropriate action to address concerns raised in regard to potential conflicts between the proposed Minnesota DG Interconnections Technical Requirements and recently approved IEEE-P1547 Interconnection Standards.

The DG Coalition has reviewed the comments of Cummins Power Generation (Cummins) and recognizes that they have concerns as brought forward to these proceedings (CPG comments, June 27, 2003). However, we wish to remind the Commission that the DG Interconnection Technical Requirements document developed to date resulted from a collaborative process including environmental groups, customers, developers, and consultants as well as utilities.

The proposed Minnesota DG Interconnection Technical Requirements were drafted earlier this year (DG Final Report by the Department of Commerce, February 18, 2003), and it was further revised as part of the completed proposed standards (Attachment 2 in

Phase II Report of the Department of Commerce, May 22, 2003). Both of these dates preceded the approval of the IEEE – P1547 national interconnection standards. Although the proposed Minnesota draft incorporates most of the draft IEEE and FERC requirements, both by reference and by repeating selected sections, it does not claim to adhere to any final specific standards since both IEEE and FERC documents were still in draft forms at that time and their approval timeline was unclear. At this time the IEEE requirements still remain unfinished as stated by IEEE in 1547. The unfinished standards include IEEE P1589, P1608, and P1614. Furthermore, many of the requirements in IEEE 1547, such as protective relaying, are quite vague and leave much to the discretion of the local utilities. Additionally, the IEEE-P1547 is a framework into which much utility discretion can be interpreted. Our draft resolutions are intended to remove unfair utility discretion that may arise out of its interpretation.

With the recent approval of the IEEE-P1547 standards by its workgroup, the DG Coalition respectfully recommends that the Commission continue to ensure that the proposed Minnesota DG Interconnection Technical Requirements are not inconsistent with IEEE-P1547.

It is important to emphasize that the IEEE-P1547 is one of a series of standards. The scope of IEEE-P1547 approved draft deals only with establishing criteria and requirements for interconnection of distributed resources with electric power system. However, the IEEE-P1547 standards that deal with conformance test procedures for equipment interconnecting resources (IEEE P1589), application guide for IEEE Std. 1547 standard (IEEE P1608), and guide for monitoring, information exchange and control of distributed resources (IEEE P1614) are still in draft phase and have not been finalized for the approval. With an uncertainty of the timeline in IEEE proceedings, it is not prudent for Minnesota to delay the approval of its proposed DG Interconnection Standards. However, the approved Minnesota standards should fall within the national standards being developed. This way, Minnesota will be in a position to remove any conflict with the national standards with little modification once these final standards are approved.

Specifically, the DG Group has the following comments with respect to Cummins’s suggested changes:

Forward:	The forward does emphasize reliability for all customers. It states the third issue is reliability; the generation system must be designed and interconnected such that the reliability and the service quality for all customers of the electrical power systems are not compromised. This applies to all electrical systems not just the Area EPS. However, we have no problem with Cummins recommendation.
Forward Par. 7:	In order to ease the requirements for smaller systems, it is essential to base requirements on size. The treatment of smaller units can be streamlined without compromising safety, economics and reliability. This will help the smaller DG customers.
1. Introduction, Par. 2.	The draft Minnesota language does not preclude DG installations on networks. It merely warns that network installations typically have special requirements.
1. Introduction, Par. 3:	We agree that if the area EPS operator limits the maximum DG size, it must be done on a reasonable basis and, if feasible, should show ways to minimize any constraints.
1. Introduction, B):	Since the IEEE standards are not yet complete and since site specifics may require special consideration, the draft requirements should continue to be minimum with a burden of proof on utility to justify any additional requirements.
1. Introduction, D):	We agree that any changes should be reasonable. A

	dispute resolution process is included with the draft regulations.
1. Introduction E):	This is simply a recommendation to the customer that additional studies and equipment will be needed to protect the DG equipment separate from the EPS.
1. Introduction F):	This paragraph is also a reminder of proper inspections and permits as required by state law. It does not detract from the technical standards.
2. References	A set of references is appropriate to avoid searching both Minnesota standards and IEEE-1547. Periodic review of Minnesota Standards will keep references up to date.
3. Types...B) i,ii	The DG Coalition feels that any load served by a DG which is otherwise served by the utility should be covered.
3. Types...B) iii	It is absolutely incorrect to broadly state that a quick transfer does not require synchronizing capability. Lack of synchronizing may destroy equipment, cause fires and impair safety unless the DG unit is asynchronous (such as an induction generator)
3. Types...B) v	We feel that the current draft language should remain unchanged.
4. I&T ...A	IEEE language is vague in certain areas. feel that the current draft language should remain unchanged.
4. I&T ...A) iii	We disagree here. Each generator has a performance curve for leading power factor operation. The DG should be operated within this performance curve.
4. I&T ...A) iv	We feel that Cummins makes a valid point here.
4. I&T ...A) v	We feel that the current draft language should remain unchanged.
4. I&T ...B) i	We agree that it's okay to modify language but only by

	removing “any”.
4. I&T ...B) ii	We feel that the current draft language should remain unchanged.
4. I&T ...B) iii, iv	We agree with Cummins on this point
4. I&T ...B) v	We feel that the current draft language should remain unchanged.
4. I&T ...B) v, 3	We feel that the current draft language should remain unchanged. IEEE 1547 needs supplemental interpretation here.
4. I&T ...B) vi	We feel that the current draft language should remain unchanged.
5. GMM&C...	We feel that regulations with regard to SKADA metering and other monitoring should be considered maximum in this case. Utility should have the burden of proof regarding metering and monitoring.
Table 5	We feel that regulations with regard to SKADA metering and other monitoring should be considered maximum in this case. Utility should have the burden of proof regarding metering and monitoring.
5. GMM&C ...A)	We agree with Cummins on this point.
5. GMM&C ...B)	This should be a maximum requirement with burden of proof on utility.
6. Protection	IEEE does not cover details of protective relaying. Relaying is becoming less and less expensive. Our existing language is okay, except we may wish to encourage utilities to standardize on manufacturers.
Table 6A	We feel that the current draft language should remain

	unchanged.
7. Agreement	We feel that the current draft language should remain unchanged.
8. Testing...A)	We feel that the current draft language should remain unchanged. IEEE P1547 is incomplete with respect to testing.
8. Testing...B)	IEEE P1547 is too basic and leaves much detail to be filled in. We feel that the current draft language should remain unchanged.
Figure 1	We previously stated our position with respect to open transfer and that it should be included. Avoiding inclusion leaves too much discretion to utility.
Figure 2	We previously stated our position with respect to open transfer and that it should be included. Avoiding inclusion leaves too much discretion to utility.
Figure 3	We feel that the current draft language should remain unchanged. Relaying is not addressed in detail in IEEE 1547. These relaying requirements should be included.
Figure 4	We feel that the current draft language should remain unchanged. Relaying is not addressed in detail in IEEE 1547. These relaying requirements should be included.
Figure 5	We feel that the current draft language should remain unchanged. Relaying is not addressed in detail in IEEE 1547. These relaying requirements should be included.

The DG Coalition appreciates the opportunity for the additional comments. If you or your staffs have any questions regarding these comments, please contact: Rafi Sohail for CenterPoint Energy Minnegasco (612) 321-4779; Larry Schedin for Hennepin County (612) 370-1319; John Bailey for Institute for Local Self-Reliance (612) 379-3815; Adam Sokolski for Izaak Walton League of America – Midwest Office (651) 646-1446; Stephen Korstad for Korridor Capital Investments LLC (651) 765-0300; Laura Bordelon for Minnesota Chamber of Commerce (651) 292-4682; John Jaffray for Prairie Gen (612) 334-9643; Carl Nelson for the Minnesota Project (651) 645-6159.

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