

Proposed Effort To Develop Standard Interconnection Requirements For PJM Non-Jurisdictional Small Generators In The Mid-Atlantic States

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Background

Historically, each utility has developed its own interconnection requirements for distributed resources connecting to its transmission and distribution facilities. While utility concerns regarding interconnection are often similar, i.e. protection of utility personnel, equipment and system coordination, technical interconnection standards and requirements can be quite different from utility to utility. This often creates difficulties for manufacturers of distributed resources who must become knowledgeable about each utilities interconnection requirements and custom design their equipment to meet these requirements.

This problem becomes particularly acute for small generation systems that are 10 megawatts or less. In this size range, developers cannot afford a great deal of customized engineering and rely on standardization to keep costs down.

Several years ago, IEEE began to address the problems created by the lack of consistent interconnection requirements and initiated an effort to develop a national interconnection standard for distributed generation units of 10 MW or less. This effort resulted in the adoption in July of 2003 of the IEEE 1547 Standard for Interconnection Distributed Resources with Electric Power Systems. While IEEE 1547 represented a significant step forward in defining uniform interconnection requirements, there is no requirement that utilities and manufacturers implements IEEE 1547 as the technical basis for interconnection requirements.

In January of 2004, PJM established a Small Generator Interconnection Working Group as part of an effort to develop more standardized interconnection requirements for small generators (<2 MW) throughout the PJM area¹. FERC currently requires interconnection agreements for any generator that participates in PJM's markets. The Working Group's efforts are limited to these "PJM jurisdictional generators" and are focused towards two goals:

1. Standardization of interconnection technical requirements for small generation resources, less than 2 MW – based on IEEE 1547 for adoption by all utilities operating within the PJM control area
2. Development of a equipment pre-certification program for small generators less than 2 MW for utilization within the entire PJM control area – to ensure that

¹ The Working Group developed a definition of small generator as being 2MW or less based on a similar definition used by FERC in its proposed rules for the "Standardization of Small Generator Interconnection Agreements and Procedures" issued August 19, 2003.

interconnection equipment proposed to be used within the PJM control area complies with IEEE 1547

As one of its early efforts, the PJM Working Group reviewed the interconnection requirements currently being used by nine PJM member transmission owners. This effort revealed that existing interconnection specifications are not generally transparent or consistent with the criteria specified by IEEE 1547. The Working Group addressed these issues by establishing a separate sub-committee comprised of system protection and interconnection specialists representing the transmission owners to see if a consensus could be developed for a developing a new PJM small generator interconnection standard based on IEEE 1547 that could be applied throughout the PJM footprint.

The sub-committee has been successful in its efforts and as of late August is close to finalizing new small generator technical requirements and testing program that largely mirror those contained in IEEE 1547.

Proposed Interconnection Activity

The purpose of the proposed activity is to initiate an effort to have Maryland, DC, Pennsylvania, Delaware and New Jersey adopt the PJM small generator requirements as interconnection requirements for utilities within their states. This would ensure that manufacturers and developers would be looking at a consistent interconnection requirement for both PJM jurisdictional and non-jurisdictional equipment in a five state region. Eventually, it is hoped that these requirements would also be adopted by other states in the expanding PJM footprint.

The implementation of consistent interconnection requirements that are based on the IEEE 1547 standard by both PJM and the states would help drive down the costs of interconnecting small generation systems, reduce the time it takes to obtain an interconnection agreement and remove much of the uncertainty concerning what interconnection standards will be applied. This would remove a large market barrier and help make distributed resources more competitive with central station generation.

Task Structure

The proposed activity will be developed around the following tasks:

Task 1:

Conduct a workshop with state commission staff to provide an overview of the IEEE 1547 interconnection standard and the related IEEE standards that are currently under development (1547.1, 1547.2, 1547.3, 1547.4). Also, provide an overview of the proposed PJM small generator interconnection standard and discuss the desirability of expanding it to include non-PJM jurisdictional projects.

Task 2:

Work with each state's commission staff to identify issues that need to be addressed to conform existing interconnection requirements to the PJM small generator interconnection requirements. Help commission staff develop a work plan and a schedule for making necessary changes.

Task 3:

Help facilitate meetings in each state between commission staff and the utilities they regulate to identify and resolve any issues related to conforming individual utility requirements to the PJM small generator interconnection requirements -- for non-PJM jurisdictional distributed resources.

Task 4:

Ensure that individual state activities are coordinated so that the interconnection requirements developed for individual states are consistent throughout the five state region.