UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Standardizing Generator Interconnection Agreements and Procedures	**)** **)**	**Docket No. RM02-1-000**

COMMENTS OF THE EDISON ELECTRIC INSTITUTE TRANSMISSION GROUP

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The Edison Electric Institute Transmission Group (EEI-TG) is pleased to submit these comments in response to the Federal Energy Regulatory Commission's ("FERC" or "Commission") Standardizing Generator Interconnection and Procedures Advanced Notice of Proposed Rulemaking ("ANOPR").[1] These comments represent the views of the EEI-member investor-owned transmission providers,[2] who participated extensively in the stakeholder collaborative process established pursuant to the ANOPR to develop a consensus standardized generation interconnection agreement and procedures on behalf of the industry.

EEI's U.S. members serve nearly 95 percent of the customers of the shareholder-owned segment of the industry and about 70 percent of all consumers of electricity in the United States. EEI's members generate almost 70 percent of the nation's electricity and own approximately 70 percent of the transmission facilities in our nation.

EEI has long supported a national, standard generator interconnection agreement and interconnection procedures in order to facilitate the development of new generation. Starting in July 2001, EEI's two business units – the Transmission Group and the Alliance of Energy Suppliers – worked to negotiate a Model EEI Generator Interconnection Procedures and

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[1] RM02-1-000 Standardizing Generator Interconnection Agreements and Procedures, Advance Notice of Proposed Rulemaking, 97 FERC ¶ 61,009 (October 25, 2001) (ANOPR).

[2] These comments reflect the consensus views of EEI-TG members but do not necessarily represent the views of individual EEI-TG members.

Interconnection Agreement (Model IP/IA). EEI sought input from the Electric Power Supply Association, the American Public Power Association, and the National Rural Electric Cooperative Association and held an all-day collaborative. The Model IP/IA was filed with the Commission on October 22, 2001. The Model IP/IA was a substantial start on a negotiated standard interconnection agreement and procedures that balanced the interests of generation developers, transmission providers, and other users of the transmission system. Because of the short time frame, EEI was unable to obtain the substantial stakeholder input necessary to achieve full industry consensus. However, the Commission wisely undertook that stakeholder process as part of this docket.

EEI-TG focuses its comments here on the ANOPR, the collaborative process, and the consensus Standard Generator Interconnection Procedures and Interconnection Agreement filed on January 11, 2002 (January 11 Filing).

I. Executive Summary

EEI-TG commends the Commission for forging a new approach to rulemaking by issuing an ANOPR that required industry participants not only to comment on a straw proposal, but also to develop a consensus document to be filed in this docket. Because the consensus elements of the January 11 Filing reflect the tremendous hard work and negotiated compromise of the participants who have a stake in the outcome, those provisions of the January 11 Filing on which the drafting negotiators achieved consensus deserve to be incorporated as drafted into the NOPR. Of course, EEI-TG also recommends that the Commission adopt the transmission provider version where the drafting negotiators were unable to reach consensus and filed alternative provisions, while giving appropriate weight to written comments.

Numerous parties have discussed the possibility of continuing to negotiate various elements of an overall Standard Generation IP and IA that were not completed by January 11,

2002. While EEI-TG cannot foresee whether any major party will in fact undertake further negotiations or will urge the Commission to call for further negotiations under the auspices of the NOPR, EEI-TG recommends that the Commission welcome any such initiatives.

The ANOPR launched a two phase process to standardize generator interconnections: terms and conditions would be dealt with under the ANOPR and "cost responsibility and pricing [would] be addressed in a subsequent rulemaking."[3] Anticipating that the Commission will want to incorporate the pricing phase in the forthcoming NOPR, EEI-TG urges the Commission to adhere to the fundamental direct assignbment pricing policy assumption of the ANOPR.[4] Maintaining the direct assignment policy inherent in Appendix B in any national standard is sound public policy. Recovering the costs of new interconnection facilities and network upgrades from the generators who create the need for them and who benefit from them: (1) protects retail ratepayers in states where the generation is produced for export to other states from subsidizing other states' ratepayers for new generation from which they may never benefit; (2) sends generators the correct price market signals with regard to the efficient location of generating facilities by providing the maximum information to the best decision-maker; and (3) preserves the current balance between incumbent and new generation.

Moreover, the Commission risks nullifying much of the consensus emerging from the Commission-directed stakeholder collaborative process if it changes course at this stage. To the extent that the Commission is committed to consensus negotiations for this kind of endeavor –

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[3] ANOPR at 6.

[4] ANOPR, Attachment B at 15. EEI-TG notes, as will be discussed in more detail below, that Transmission Providers stipulated in the January 11 Filing that credits for network upgrades would be subject to the outcome of the upcoming rulemaking. January 11 Filing, Article 11.4 Transmission Credits at 48. EEI-TG notes that there are many pricing and cost allocation issues to be resolved in the upcoming NOPR in addition to the issue of credits for network upgrades (which the Commission is applying differently to RTOs/ISOs differently than to transmission providers (*see* Consumers 96 FERC ¶ 61,132 (2001) and PJM 87 FERC ¶ 61,299 at 62,204 (1999)). These include: cost responsibilities associated with the various interconnection product options, generator-provided services and obligations, liquidated damages, and termination costs, among others.

and EEI-TG supports that notion – the Commission would be hard pressed not to mandate another round of negotiations over terms and conditions incorporating the newly proposed pricing policy.

With respect to the issue of generator responsibility for taxes associated with its payments to fund interconnection facilities, the Commission must also allow transmission providers to charge a gross up – and recover that gross up – until the IRS rules that contributions by generators to transmission providers in connection with interconnection facility construction are non-taxable transactions.

The Commission should limit its interconnection policy to transmission-level voltages. Most small generators will be connected to the distribution system, not the transmission grid. Since interconnection to distribution raises myriad different issues than interconnection to transmission, and since the Small Generators Caucus proposals in Section 14 of the Interconnection Procedures draft leaves no role for distribution utilities and the state and local agencies that regulate them, the Commission should reject the Small Generators Caucus proposals. Instead, the Commission should accept the Transmission Owners proposed Section 14, which recognizes the clear role state and local regulatory agencies and distribution utilities must play in distribution interconnection.

II. Comments

A. EEI-TG Commends the Commission's Use of a Stakeholder Process to Develop a Consensus on Generator Interconnection and Recommends Further Use of Such a Process

EEI-TG commends the Commission for forging a new approach to rulemaking by issuing an ANOPR that required industry participants not only to comment on a straw proposal, but also to develop a consensus document to be filed in this docket. Given the technical complexity of the exercise and the industry's acknowledged expertise, we believe the Commission's course of

action has led to a much better outcome for all concerned than if the Commission had simply issued a NOPR. Documents such as a generation interconnection agreement are inherently negotiated commercial instruments that must embody the agreement of the parties with financial and other interests in the outcome.

1. EEI-TG Fully Supports the Consensus Provisions of the January 11 Filing

Because the consensus elements of the January 11 Filing reflect the tremendous hard work and negotiated compromise of the participants who have a stake in the outcome, those provisions of the January 11 Filing on which the drafting negotiators achieved consensus deserve to be incorporated as drafted into the NOPR. Of course, EEI-TG also recommends that the Commission adopt the transmission provider version where the drafting negotiators were unable to reach consensus and filed alternative provisions, as well as give appropriate consideration to filed comments.

To the extent that the January 11 Filing departs from the strawman proposal issued in the ANOPR (based on the ERCOT model), EEI-TG supports the January 11 Filing over the ANOPR strawman. First, the consensus document reflects the best negotiated outcomes possible at this time. Second, where the parties identified different positions (aside from those justified by regional or other relevant difference), the Commission should strive to craft the best balance between the positions taken by the parties and not substitute any ERCOT option. Finally, and most importantly, in the forthcoming NOPR, if the Commission does address pricing, the Commission should not depart from the direct assignment pricing provisions mandated in the ANOPR in Appendix B that are a foundation for the consensus provisions of the January 11 Filing. EEI supports the consensus provision of transmission providers that credits for network upgrades should be subject to the outcome of the pricing rulemaking.

2. The Commission Should Welcome Any Additional Negotiation Initiatives

Numerous participants have discussed the possibility of continuing to negotiate various elements of an overall Standard Generation IP and IA that were not completed by January 11, 2002. While EEI-TG cannot foresee whether any major party will in fact undertake further negotiations or will urge the Commission to call for further negotiations under the auspices of the NOPR, EEI-TG recommends that the Commission welcome any such initiatives. These initiatives could occur before the NOPR is issued or could be undertaken either at Commission request or on a parallel track.

More work could be done. Various provisions could benefit from drafting clean up.[5] Some Interconnection Agreement topics could be addressed that weren't.[6] Some areas where alternative provisions were posted could be harmonized.[7]

B. EEI-TG Urges The Commission To Maintain its Current Direct Assignment Cost Allocation and Cost Recovery Policies in the Upcoming NOPR

In the Removing Obstacles Order, the Commission announced its intention to reverse current cost allocation for interconnection.[8] The Commission proposed shifting from the current policy that directly assigns the "but for" interconnection costs and rolls in network upgrades to a policy that fully rolls in such costs. The Commission did not adopt its proposal on rehearing,[9]

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[5] For example, there appears to be a conflict in Article 7 of the consensus IA wherein Section 7.1 provides that the transmission provider owns, operates, tests, and maintains the metering equipment at the point of interconnection, yet Section 7.5 states that the metered data provided by the generator shall normally be used as the official measurement of the amount of energy provided by the facility.

[6] For example, articles not discussed among the participants in the IA Drafting Committee include: Coordination with Affected Systems; Article 7, Metering; Article 8, Communications; Article 12, Invoice; Article 13, Insurance; Article 17, Force Majeure; Article 18, Default; Article 19, Indemnity; Article 20, Assignment; Article 21, Severability; Article 22, Comparability; Article 23, Confidentiality; Article 24, Environmental Releases; Article 25, Information Requirements; Article 26, Information Access and Audit Rights; Article 27, Subcontractors; Article 28, Disputes; Article 29, Representations, Warranties, and Covenants; and Article 30, Operating Committee.

[7] For example, the near-consensus "Interconnection Products and Services" document, which both drafting committees believed would be addressed by the other, as the January 17 and 19 Plenary Sessions revealed.

[8] Removing Obstacles to Increased Generation and Natural Gas Supply in the Western United States, 94 FERC ¶ 61,272 (2001) (Removing Obstacles Order).

[9] Order On Requests for Clarification and Rehearing on Further Order On Removing Obstacles to Increased Generation and Natural Gas Supply in the Western United States, 96 FERC ¶ 61,155 (2001).

but indicated during Commission meeting discussions that it would revisit the issue in the context of future cases, including this NOPR process.

Should the Commission decide to roll in the pricing issue into its NOPR in this proceeding, EEI-TG recommends that the Commission continue to adhere to its current interconnection direct assignment policies, for two reasons. One is that the Commission's current policy is good policy and makes sense in the current regulatory context.[10] The second reflects the reality that the Commission mandated incorporating the Appendix A version of that policy into the extensive negotiating process required in this ANOPR docket and the January 11 Filing incorporates and addresses that predicate. To overturn the policy embedded in the negotiated consensus document would vitiate all the extensive work and effort since October 24, 2001 that many industry participants undertook. To the extent that the Commission is committed to consensus negotiations for this kind of product – and EEI-TG supports that – the Commission would be hard pressed not to mandate another round of negotiations based on the new pricing policy. These two arguments are explored below.

1. Political, Regulatory, and Economic Considerations Support Retention of the Commission's Existing Interconnecting Cost Allocation Policy at This Time

EEI-TG believes that the Commission should retain its traditional interconnection pricing policy. That policy – that costs are paid by those who benefit – is sound, has supported substantial investment in generation nationwide in the last few years, is consistent with numerous state policies, supports sound siting principles, and maintains a level playing field.

a. Direct Assignment Has Not Hindered Generator Interconnection (Arguments to the Contrary Notwithstanding); Much Generation Has and Will Be Built

[10] Indeed, Appendix A varies from current policy in that several ISOs/RTOs have developed, using stakeholder processes similar to the one being used here, and implemented, standard procedures appropriate to their particular market designs and integrated tariff provisions that have been approved by the Commission. *See, supra*, note 4.

Proponents of roll-in overstate the case that interconnection costs should be lowered in order to speed the much-needed investment in new generation. It is no longer the case, at this time – with some exceptions – that generation needs to be built at emergency speed. As has frequently been pointed out recently, the first wave of competitive generation has been built and the problem is more one of over- rather than under-supply. Except in certain areas, of course.

Myriad factors influence new generation construction at this time, including the investment community's views on capital outlays of generators, changes in environmental law and regulation, the rate of economic growth in the economy (national and regional), whether new generation should be built in rate base or competitively, among them. Moreover, because interconnection costs are a fraction of the total costs of generation plant investment, in light of the other powerful decisional factors, building decisions do not hinge on interconnection cost allocation alone.

To ascertain the amount of generation construction, EEI-TG surveyed its member companies – who own approximately 70% of the transmission facilities in the nation – to develop a picture of generation interconnected or planned to be interconnected in the near past and future around the nation. And while it has proven impossible to get a complete picture, 47 member companies, 65% of EEI-TG members, responded that they were planning to interconnect over 94,000 MW of generation between 2000 and 2005. This represents a substantial investment by generators, under current pricing allocation policies and belies the claim that interconnection barriers are hampering generation development.

b. Rate Caps and State Reluctance to Subsidize Out-of-State Ratepayers Militate Against Rolling In Interconnection Costs

As many parties in the Removing Obstacles proceeding brought out, state policies with regard to recovery of any rolled in interconnection costs could strand those costs.[11] First, a number of states have imposed rate caps that would prevent recovery of rolled in interconnection costs. Second, states look unfavorably at being asked to roll in costs to be paid by in-state ratepayers for generation interconnections built to benefit export markets. The problem of subsidizing generation that may solely serve out-of-state load is particularly severe in states with relatively light electricity consumption and that have significant transmission ties with surrounding states, such as Idaho, Kentucky, and Mississippi, among others.

c. Direct Assignment of Interconnection Costs Supports Optimal Siting Decisions

The Commission supported its goal in this rulemaking of "promoting competition and economic efficiency," by stating that the interconnection process must be designed to promote efficient generator siting.[12] Virtually all parties can agree on that principle. The Commission sought comment on how to achieve that objective, but also provided in Attachment A of the ANOPR that transmission providers need to post on their web site optimal and sub-optimal sites for locating prospective generating facilities and to identify areas where siting would require minimal network upgrades.[13] This is one solution, but not a good or stable one.

Regardless of state policies relating to generator and interconnection siting, directly assigning interconnection costs is the only certain and efficient way to assure that the most informed decision maker makes the decision relative to siting, by taking all costs into account.

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[11] *See, e.g.*, Comments of Idaho Power Company, Removing Obstacles to Increased Electric Generation and Natural Gas Supply in the Western United States, Docket No. EL01-47-000, March 30, 2001.
[12] ANOPR at 6.
[13] ANOPR at 13, Attachment A.

Asking transmission providers to identify good generation sites, including on the basis of minimizing network upgrades, will undoubtedly trigger criticisms that the transmission providers are only identifying sites that are costly to generators but not costly to themselves. It is an unstable solution, for all parties. Asking RTOs or state regulators to propose or identify locations for generator siting on the basis of various costs or impacts is also likely to lead to conflict and delay as all parties seek to minimize their own – partial – costs.[14]

There is no substitute for the fully informed decision maker to make the decision. The generators know their own financial and commercial objectives and tolerances; they know the capital and operating costs of fuel transport; because they will pay for network upgrades (even thought current policy outside of RTOs/ISOs dictates that they be credited back) they know those costs. No other decision maker – not the transmission provider, the state regulator, the RTO managers, or any other entity – is at the nexus of all of those decision elements. If generators also know and pay for the interconnection costs, they will be able to make the best locational decision, factoring in all decisional elements. No other entity's self interest will skew the decision.

If interconnection costs are rolled in, generators will have no incentive to site plants in areas requiring minimal network upgrades or fuel and electricity transport. Instead, they will minimize all transport costs and thus site the plant to reduce those costs it sees, namely the fuel transport cost, and maximize those costs it doesn't see, namely interconnection costs. This will lead to substantial overbuilding of interconnection leads.[15] Accordingly, the Commission should

[14] Clearly, trust is much likely to be higher where generation sites emerge as a result of analyses of locational marginal pricing data and congestion. That still, however, does not address the generation siting, but only the point of interconnection.

[15] FERC Order No. 2000 at pp. 642-3, stating that "[m]arket designs that base prices on the averaging or socialization of costs may distort consumption, production and investment decisions and ultimately lead to economically inefficient outcomes."

continue to adhere to its existing pricing policy, which complements its "Best Practices" notion of ensuring that generation is sited in a location that minimizes the need for network upgrades.

d. Keeping a Level Playing Field Dictates That All New Generation Continue a 20-Year Policy of Direct Assignment

Proponents of rolling in the costs incorrectly argue that to maintain parity between incumbents and new entrants, because interconnection costs have always been rolled in by vertically integrated companies, new generation should also be rolled in. In fact, interconnection costs for independent and affiliated power producers (IPPs) and (APPs), for the last 20 years, have been directly assigned. Thus, at best, the playing field of incumbent generators presents a mixed comparison. Indeed, some incumbent IPPs and APPs may not want new entrants to avoid those costs. Because the playing field is not level, no real comparability can be assured. In this circumstance, the decision should be made on the basis of sound economics and public policy.

2. Reversal of The Commission's Current Direct Assignment Policy and the ANOPR Presumptions in the NOPR Risks Undercutting Much of the Consensus Emerging from the Commission-directed Stakeholder Collaborative Process

As mandated in the ANOPR, the consensus negotiations were premised on the Appendix B pricing principles.[16] This policy dictated that generators would be directly assigned and would fund the costs of interconnection facilities and that network upgrades would be credited back.[17] Accordingly, the terms and conditions of the January 11 Filing embody and address those pricing principles, modified by the recommendation of transmission providers that the issue of credits be dealt with in the pricing NOPR.[18]

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[16] ANOPR Appendix A at 15.

[17] *Id.* As noted above, transmission providers stipulated in the January 11 Filing that regional ISO and RTO interconnection procedures and agreements that have been approved by the Commission that do not provide network credits (because, *inter alia*, the generator is not the transmission customer and credits could not be recovered) should control until modified by the Commission. January 11 Filing, Section 35.15.

[18] January 11 Filing, Section 11.4.

Many of the provisions of the January 11 Filing, particularly in the Interconnection Procedures, rely on the Appendix B direct assignment policy. These include Section 4.1., Queue Position; Section 6.4., Re-Study; Section 8.2., Scope of Facilities Study; and Section 8.3., Facilities Study Procedures. The Commission needs to be aware that these sections are both grounded on the Appendix B direct assignment pricing assumption and are highly interdependent as to timing and scope of studies and as to obligations and responsibilities of the parties involved and were agreed upon as a package.

Many elements of the Interconnection Agreement are also grounded in the direct assignment pricing assumption. See, for example, Section 2.2; Section 5.16-5.16.6; Section 10.5; Section 11.1- 11.5.

The Commission should not underestimate the impact that a departure from the Appendix B direct assignment policy would have. The bulk of the work embodied in the January 11 Filing would be nullified. Confidence in the Commission's decisional stability would be open to question. And, if the Commission believes that stakeholder consensus processes are worthwhile – and EEI-TG believes they are – then that process would arguably have to be started all over under the auspices of the NOPR.

C. The Commission Must Allow Transmission Providers to Charge a Gross Up – and Recover that Gross Up – Until The IRS Rules That Contributions by Generators to Transmission Providers in Connection with Interconnection Facility Construction are Non-Taxable Transactions

EEI-TG members remain willing to work with Generators to structure payments or property transfers for Interconnection Facilities (including Transmission Interconnection Facilities and Network Upgrades) to reduce the cost of these assets for Generators provided that the tax risk remains with the generator. One way to reduce the tax cost is by structuring the payments or contributions of property by the Generator to the Transmission Provider as non-taxable contributions to the capital of the Transmission Provider by a non-shareholder. The IRS

has issued favorable guidance to taxpayers in Notice 88-129 and Notice 2001-82 on the taxation of such transactions.[19] That guidance provides the circumstances under which the IRS will consider interconnection payments and transfers of property to be non-taxable contributions to capital.

Prior to issuing Notice 2001-82, the IRS took the position that transactions outside of the scope of Notice 88-129 may or may not be taxable. The IRS should be expected to review closely transactions that go beyond the scope of Notice 2001-82, and the IRS position on such transactions at this time is uncertain. In Notice 2001-82, the IRS has also indicated a willingness to review transactions outside of the scope of that notice under the IRS private letter ruling program. This includes, for example, transactions that were entered into before the effective date of Notice 2001-82 that otherwise meet the terms of that Notice.

One important area that is not covered by the IRS notices is the provision of transmission credits for Network Upgrade costs.[20] The tax impact of including transmission credits in an interconnection agreement that deals with payments or transfers of property for both the Transmission Interconnection Facilities and the Network Upgrade Facilities is uncertain. Transmission credits could result in the entire transaction being taxable even though the transaction otherwise conforms to the safe harbor provisions of Notice 2001-82. Additional uncertainty is added by the circumstance that FERC has neither promulgated a rule requiring these credits nor rules governing the use of transmission credits. The IRS may be willing to expand the scope of its current notices to address the rules ultimately adopted by FERC.[21]

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[19] It is important to note that the IRS Notices do not cover transactions between a Generator and a non-corporate Transmission Provider .

[20] Another important issue is raised by the fact that some EEI-TG members are not corporations and the IRS Notices do not cover transactions between a Generator and a non-corporate Transmission Provider .

[21] This comment is not intended to support issuance of any such rules, but rather to point out that until the rules are understood it is uncertain how the IRS will view the transaction. It is the position of EEI-TG members that transmission credits and the tax issues related to transmission credits should be addressed in a subsequent rulemaking. *See* Section 11.4 of the Model Interconnection Agreement. Furthermore, while the promulgation of rules is needed to eliminate the tax uncertainty, there is no assurance that the IRS will eliminate that uncertainty by

Generators and not EEI-TG members should accept the tax risk on payments or transfers of property under the Model Interconnection Agreement. A risk of taxation exists on payments and transfers of property whenever the terms and conditions of the IRS notices are not satisfied. One way to minimize this risk is for the Transmission Provider to obtain a private letter ruling.[22] A Generator should provide adequate assurances that it will continue to comply with the terms and conditions of the notices or the private letter ruling. EEI-TG members are justified in requiring a tax gross-up on the amount of money and/or property received in any interconnection transaction that is not covered by the applicable IRS notices or private letter ruling. If during the pendency of a PLR, the Transmission Provider elects not to gross up, the generator should provide security in case a favorable PLR is not obtained. Any PLR will be based on certain representations made by the generator. If the generator breaches those representations, the PLR will not be binding. In that event, the Transmission Provider should be able to demand an indemnity payment. There should be security (e.g. parental guarantee, letter of credit of other security acceptable to the Transmission Provider) to ensure that the generator will be able to make the demanded indemnity payment. To the extent that a transmission owner accepts a form of financial security, in lieu of an up-front payment, the Commission should make it clear that transmission owners will be held harmless in the rate making process to the extent the security proves inadequate.

D. The Commission Should Limit Its Interconnection Policy to Transmission-level Voltages

These comments were developed with the assistance of the EEI DG Task Force, which is comprised of a multidisciplinary group of EEI distribution companies and distributed generation

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the issuance of further guidance or that the uncertainty will be eliminated with the adoption of an IRS position that is favorable to taxpayers.

[22] EEI-TG members do not oppose use of the private letter ruling program to gain some certainty in this area under rules that impose the cost of the process on the Generator who will obtain the benefit of the IRS guidance.

developers. On page 12 of the ANOPR, within the document entitled "Best Practices," the Commission proposes to exempt, "[s]mall Generators (20 MW and below), including those owned by Transmission Providers or their affiliates, … from paying for interconnection studies or network upgrades."[23] In response, the Transmission Owners and the Small Generators Caucus offered differing options in the Interconnection Procedures document, Section 14; the Generation Owners Caucus offered no language to this section.

1. If Installed And Operated Safely, New Distributed Generation Technologies Could Be Beneficial

EEI-TG supports the emergence of distributed generation technologies ("DG"). We believe that DG offers electricity consumers new options that have never before been available for improving the efficiency of their energy consumption and the reliability of their energy supply. DG could be part of the solution to a problem that has vexed all of the competitive electricity markets in the United States: the inability of end-use customers to alter their anticipated demand, ahead of dispatch, in response to high or volatile prices in the spot market.

Distribution utilities have a long history of interconnecting in a stand-by mode with distributed generators, thousands of which are installed at hospitals, prisons, sewage treatment plants, and other facilities providing vital public services that can never be allowed to go dark. These power plants are used in emergencies and adhere to well-established operational protocols ensuring that the plant energizes only the facility, and not the surrounding grid. These protocols are necessary to protect the public from the physical dangers inherent in electricity and to ensure that utility line technicians responding to an emergency are not in harm's way by the phenomenon, know as "islanding," which could result when DG power energizes the neighboring grid during outages.

However, EEI-TG members as the taxpayer potentially receiving taxable income must control that process, but participation by the Generator as the party who will potentially incur the tax cost is warranted.

What has changed is the desire to use distributed generators in parallel with the local utility in non-emergencies, sometimes with the intention of sending power onto the grid. Operation of these facilities will depend on the underlying economic conditions in electricity and fuel markets, as well as the needs of the electric consumer installing the DG. Interconnection in these new circumstances will require the distribution utility to establish new operational protocols and to upgrade the systems to affect bi-directional power flows.

Determining what changes are needed requires study; the study may be minimal for small DG installations, such as for residential solar panels, but necessary in every case. These studies are for the protection of the general public and the generator itself, as well as the distribution utility. Also for utility worker and public safety, DG installations must have protection and control features designed to turn the DG off during utility outages, thereby avoiding an islanding situation. To ensure these and other systems work properly, utilities may need to test them in the field.

At present, most DG technologies have yet to achieve the fuel-use efficiency and economic price per kilowatt of the most efficient base load generation. However, DG could be very attractive for supplying energy during peak periods, in situations requiring super levels of reliability, or for other niche applications. Moreover, the efficiency of DG improves considerably when combined with industrial heating or cooling processes. While stand-alone DG could ultimately be competitive in broader circumstances, there are still cost and efficiency gaps that prevent widespread application today.

These gaps are best narrowed with continued research and development, much of which is being funded by the United States Department of Energy, the Electric Power Research

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[23] Currently PJM small generation procedures are limited to units under 10 MW. ISO-NE has small generator procedures for units under 5 MW each or a cluster of under 10 MW.

Institute, and private research laboratories. The growing competitiveness of electricity markets should also stimulate the development of DG.

2. Small Generators Must Honor All Local And Regional Safety And Reliability Standards And Procedures

Against this competitive and technological backdrop, the Small Generators Caucus has offered its proposals for Section 14 in the Interconnection Procedures document. Notwithstanding the fact that DG interconnections to distribution for purposes other than emergencies raise new issues, the Small Generators Caucus proposal leaves no role either for state and local officials or for distribution utilities to ensure that these interconnections will not erode local safety and reliability.

Moreover, the Small Generators Caucus proposals do not reflect the unbundled utility industry in many parts of the country, where transmission and distribution are in structurally separate companies, some of which are not affiliated with one another. The transmitting utility may have no ability to impose interconnection on a distribution utility.

Of particular concern is proposed Section 14.6, which would require interconnection, with only limited review, for two classes of small generators, so-called Small Packaged Generators and Micro Generators, which are defined as "new generation resources … pre-certified for interconnected operation," with the former being 250 kW to 2 MW, and the latter being smaller than 250 kW. While a transmitting utility might be able to interconnect such generators after only limited review, these generators will rarely be connected to transmission. Rather, they will be connected to the local distribution utility, which must conduct studies for all but the smallest of generators.

The proposals by the Small Generators Caucus provide no role for the distribution utility to review interconnection, and no requirement for the generator to pay for the cost of studies the distribution utility must perform. While not paying for the necessary interconnection costs will

narrow some of the technological and efficiency gaps that currently prevent DG from widespread usage, no costs are actually avoided; they are merely shifted to others.

Set against the Small Generators Caucus proposals are the options for Section 14 of the Interconnection Procedures document proposed by Transmission Owners, who recognize the need for distribution utility and state involvement in decisions that are inherently local in nature. EEI-TG supports the Transmission Owners' options, since they acknowledge that safe and reliable interconnection with small generators will require input from distribution utilities and state and local regulators.

Also registering concern with the Small Generators Caucus proposals are the State Commissions, who "do not agree with a provision … for national pre-certification and technical standards that have not been established nor for interconnection to distribution facilities [state commissions] regulate." Indeed, the Small Generators Caucus does not make its proposals in a vacuum. The Institute for Electrical and Electronic Engineers (IEEE) is developing standards, and several states have already adopted standards.

The next sections will explain how transmission and distribution differ functionally and technically, thereby requiring interconnection policies that differ from one another. They explain how the Section 14 options advanced by the Small Generators Caucus would result in subsidies and a reduction of reliability and safety.

3. Distribution Is Functionally And Technically Different From Transmission, Requiring Different Interconnection Standards

Transmission is a network of finite nodes designed to move power in many directions. Generation connected to the transmission system is natural; the transmission system is built as a multi-sourced/networked system specifically intended to connect with geographically dispersed generators. Because of its small size, DG connected to the transmission grid could have a negligible impact on power flows on the grid.

Distribution facilities are quite different. In most cases power flows essentially in one direction from the substation to the end user. To affect one-way flows, distribution lines have voltage level and over-current protection devices, such as fuses and line circuit breakers. Other devices, such as voltage regulators on long distribution lines may not operate properly with the addition of DG. The widespread use of fixed capacitance for voltage support might be incompatible with DG operations in parallel. Under the distribution network's current architecture, generation connection is unnatural; the system simply wasn't designed to accommodate it easily.

Transmission and distribution networks also differ from one another in architecture and operation, which result in differing impacts when generation is attached. These differing impacts require utilities to undertake different studies when analyzing the impact of generation interconnection to distribution than they would when analyzing generation interconnected to transmission. For example, to interconnect generation on transmission lines, the transmitting utility needs to look at stability impacts, congestion patterns, loop flows, and other attributes. These issues rarely factor into radial distribution interconnection and typically do not require study in the context of DG interconnection.

To interconnect very small DG on distribution lines, the distribution utility may need to consider the impact of single phased DG on load balancing on distribution feeders, a problem never encountered with transmission interconnection. Similarly, the impact of DG on available fault current is rarely an issue to transmission. Every generator increases the fault current of the distribution system, which effects customer equipment. If a DG seeks to interconnect where the prevailing fault current on the distribution grid is already high, the utility needs to ensure that even higher levels of fault current remain within levels necessary to leave other customers

harmless and to avoid overloading distribution equipment. This problem does not generally arise in the interconnection to transmission.

Technically speaking, for most utilities 12.5 kV distribution feeders are rated at 10 MW or less; 25 kV distribution feeders are rated between 10 and 22 MW. A DG rated at 20 MW on a 12.5 kV system would present a very significant impact on the distribution grid. It may, indeed, be technically impossible to connect the 20 MW generator that the ANOPR suggests would be exempt from paying for studies and upgrades. On a larger, 25 kV system, a DG rated at 20 MW system would still present a significant impact on the distribution system. Even if the distribution feeder has sufficient capacity to accommodate the DG, the surrounding load might be too small to absorb all of the DG's energy in an islanding situation that may arise if the utility has an outage while the DG continues operating. By contrast, a 20 MW generator on a transmission system greater than 60 kV might not present much of an impact at all.

4. Sections 14.1-14.3 Proposed By The Transmission Owners Caucus Are Preferable To The Proposals by the Small Generators Caucus

In proposed Section 14.1, the Transmission Owners Caucus appropriately recognizes that "[b]est practices may require recognition of state and regional differences." It also acknowledges the reality that small generators may be connected to "facilities classified as distribution," and specifies that this Commission's Interconnection Procedures will not "preempt state and local legal requirements and/or applicable reliability and safety criteria of the distribution company necessary for the interconnection to the local distribution system." The Small Generators Caucus has no corresponding language to deal with the obvious distribution utility concerns.

In Section 14.2, the Transmission Owners Caucus and Small Generators Caucus agree to waive the deposit for interconnection study, while requiring the small generator to pay the costs when the studies are completed, and provide for expedited procedures. However, in the areas of

expedited procedures, the Transmission Owners sensibly recognize that, ultimately, the availability of expedited procedures in many circumstances must be congruent with "good utility practice … state and local requirements and safety and reliability requirements of the local distribution system… ." The likely need to coordinate with the local distribution utility is enshrined in proposed Section 14.3, which requires a small generator interconnecting at the distribution utility to "apply to such local utility for interconnection."

The Small Generators Caucus is silent on the need for the interconnection to meet state, local, and distribution utility requirements, and does not offer a corresponding Section 14.3.

5. The Options Supported By The Small Generators Caucus In Proposed Sections 14.4-14.6 And The Proposed Appendix Will Jeopardize the Safety And Reliability of the Distribution Grid, Are Vague in Many Critical Respects, And Are Unworkable to the Detriment of DG

At the outset, the Transmission Owners offer no corresponding Sections 14.4-14.6 to those proposed by the Small Generators Caucus. The Transmission Owners Caucus recognizes that interconnection at these voltages will be on the distribution grid, which raises the obvious jurisdictional problems noted by the State Commission Caucus. Jurisdictional questions aside, unbundling in the electric industry raises practical problems. Namely, the transmission owners might be unaffiliated with, or might be structurally separated from, the distribution utilities that would have to do implement these sections. While there is no jurisdictional hook on which to impose these standards, there might not even be a corporate connection either.

The need to understand the differences between distribution and transmission becomes apparent when reviewing the proposals by the Small Generators Caucus in proposed Sections 14.4-14.6. Many statements in Sections 14.5 and 14.6 might be true for DG connected to transmission, but are false for DG connected to distribution. For example, the statement from proposed section 14.5.1, "Generally small generation additions will have very limited and isolated impacts on system facilities," may be true for 20 MW generators connected to certain

transmission lines, but is likely to be false for nearly all 20 MW generators seeking connection on distribution lines, especially if several distributed generators are already connected on the same feeder. Since the presumption underlying Section 14.5.1 is false on the distribution system where most DG will be interconnected, expediting the Feasibility Study, as called for in this section, might not be possible for distribution interconnections.

Similarly, the statement in Section 14.5.2, "In most cases, the addition of small generation resources will improve local deliverability margins and will have no impact on generation deliverability in an area," might be true for certain transmission, but is plainly false for distribution, where over current protection devices and voltage regulators could be greatly impacted. Since this presumption underlying Section 14.5.2 is false on the distribution system where most DG will be interconnected, expediting the Facilities Study, as proposed Section in 14.5.2, might not be possible.

Ironically, as the Small Generators Caucus suggests in the above quoted language from proposed Section 14.5.2, there might indeed be improvements or other benefits from installing DG at certain locations on the grid. To determine whether a DG installation will provide benefits that are greater than the costs, the utility must conduct the sorts of studies the Small Generators Caucus wants expedited or waived.

However, the Commission should not assume that there are any benefits to the distribution utility from DG installations. Distribution utilities experienced with interconnecting DG have found these benefits to be rare and unique to each installation. For example, a utility in the Midwest recounted how it aggressively sought to use DG in the hopes of avoiding costly distribution upgrades. After considering several options, the utility concluded that DG installation would not defer any distribution costs and discarded the idea.

As applied to Small Packaged Generators and Micro Generators, which are defined as "new generation resources … pre-certified for interconnected operation," with the former being 250 kW to 2 MW, and the latter being smaller than 250 kW, Section 14.6 states the presumption explicitly: "The inherent assumptions justifying the greater degree of expedition in these procedures are that such resources will only be connected in situations where no transmission upgrades are required. (emphasis in original)" While this statement is likely to be true for generators 2 MW and smaller, such plants are unlikely to be attached to transmission. The Small Generators Caucus is silent on the negative impacts on distribution, which are likely to be pervasive.

As drafted, many tests and remedies that the Small Generators Caucus proposes in Section 14.5 are vague and unworkable. For example, in Section 14.5.1, the Small Generators Caucus states, "If during the expedited Feasibility Study, criteria violations are observed, further AC testing is required." But it is unclear what additional testing would be allowed, whether these "criteria violations" would disqualify the DG unit from all expedited review, and what AC testing is required, especially since many DG units operate using DC. Section 14.5.2 is similarly vague in reference to "violations" and remedies. The Appendix provides little elaboration on what other tests will be allowed.

Section 14.4 suggests that, except for "Small Packaged/Micro Generators," DG projects should join the same interconnection queue as larger resources. Since most DG is interconnected by the distribution utility, there appears to be no reason to subject them to the same queuing requirements of bulk power suppliers connecting to transmission. While there may be a need for a queue to ensure that incremental DG interconnections do not overload individual distribution lines, EEI-TG sees no reason for the additional involvement of the Commission's queuing protocols.

Proposed Section 14.6 offered by the Small Generators Caucus suffers from the aforementioned problems, but has additional infirmities. The most salient problem occurs at the outset: it would apply to an ill-defined category of generators, so-called "Small Packaged Generators" and "Micro Generators." These are "new generation resources … pre-certified for interconnected operation."

The Small Generators Caucus does not specify who would do the certifying. EEI-TG supports the concept of certification by Underwriter Laboratories, establishment of standards from the IEEE, and other groups. However, EEI-TG knows of no standards-setting body that can ensure interconnection to distribution of any generator would be so "sufficiently simple" that there would "little chance of having an impact on the system or being a hazard to the system, personnel, or other customers." There is also no standards-setting body so omniscient as to ensure interconnection to distribution would require no study or upgrades in all circumstances.

Further, Section 14.6 states, "The pre-certification of these resources means all safety and protection equipment needed for interconnected operation is provided with the pre-certified generator." There is no way that protection equipment provided with the generator can in all cases provide adequate interconnection protection, because local attributes of the distribution system could necessitate the need for additional protection. These include transformer connections (wye-wye, delta-wye, etc.), system stiffness ratios, prevailing reclosing times, other utility overcurrent protection devices, and planned or possible system reconfigurations. For example, it may be necessary to sense voltage on the primary side of a transformer connection, especially if the transformer has a delta winding on the primary side. Pre-certified protection equipment provided with the generator will be set up to measure voltage on the secondary side of the transformer connection at the DG which would be inadequate. Pre-certified protection equipment and the proposed 15% load ratio cut-off, as the Small Generators Caucus

proposes in Section 14.6, are woefully inadequate ways of screening for all the issues that may dictate additional protection measures.

EEI-TG is particularly troubled by the implied reliability and safety standard that is acceptable to the Small Generators Caucus. To wit, by using the phrase "*little chance*" to describe what would be an acceptable level of "a hazard to the system, personnel, or other customers" instead of "*no chance*," the Small Generators Caucus implies that *some* risk of interconnecting DG would be acceptable. EEI-TG vigorously disagrees. Interconnection of DG must pose *no risk* to the utility, utility personnel, and the broader public, beyond those risks that normally arise when adhering to Good Utility Practice in supplying a product with inherent dangers, such as electricity.

Other problematic aspects of Section 14.6 include: the provision in Section 14.6.2 allowing a Small Packaged Generator or Micro Generator representing 15% or less of peak load on the local circuit to gain interconnection automatically, notwithstanding the cumulative impact from other generators already connected; Section 14.6.3, which would waive Small Packaged Generators and Micro Generators from having to pay the costs of feasibility studies; the requirement in Section 14.6.4 that the Interconnection Agreement for Micro Generators be one page at most; and the requirement in Section 14.6.5 that the cost of using control center facilities and modeling equipment is waived.

6. In Issuing an Interconnection NOPR, The Commission Should Adopt The Proposals For Section 14 Offered By The Transmission Owners

In issuing the NOPR, the Commission should reject the Small Generators Caucus proposed option for Section 14 and accept the options put forward by the Transmission Owners Caucus. This will ensure that DG connected to the transmission grid will get a meaningful streamlining of procedures, while ensuring that the states and local distribution utilities can

adhere to local and regional reliability and safety standards when DG is interconnected to distribution.

III. CONCLUSION

For the foregoing reasons, EEI–TG respectfully requests that the Commission consider adopting the recommendations proposed above.

Respectfully Submitted,

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February 1, 2002

CERTIFICATE OF SERVICE

I hereby certify that I have this day caused the foregoing document to be served upon all known parties in this proceeding by mailing by first-class mail a copy properly addressed to each such party.

Dated at Washington, DC this 1st day of February, 2002.

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Christina C. Forbes