

STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 6181

Investigation into the Use of a Net Metering)
System for the Purchase and Sale of Electricity)
from Small Electrical Generating Systems to and)
from Electric Companies)

Order entered: 4/21/99

INTRODUCTION

The Vermont Public Service Board ("Board") has historically supported policies which encourage and promote the development of renewable energy resources and environmentally sound energy supply. Pursuant to 30 V.S.A. § 202a :

It is the general policy of the state of Vermont:

(1) To assure, to the greatest extent practicable, that Vermont can meet its energy service needs in a manner that is adequate, reliable, secure and sustainable; that assures affordability and encourages the state's economic vitality, the efficient use of energy resources and cost effective demand-side management; and that is environmentally sound.

(2) To identify and evaluate on an ongoing basis, resources that will meet Vermont's energy service needs in accordance with the principles of least cost integrated planning; including efficiency, conservation and load management alternatives, and wise use of renewable resources and environmentally sound energy supply.

Renewable energy is desirable to diversify new generation away from complete reliance on natural gas and other non-renewable fuels, to promote the development of sustainable energy supplies, and to continue addressing air quality and climate change concerns.

In order to encourage more small scale deployment of renewable resources within the State of Vermont, on April 21, 1998, the General Assembly enacted into law Act No. 136: "An Act Relating to Issuance of Permits for Self-Generation of Electricity" (H.605). This Act allows electric utility customers who use electrical generating systems, that are less than 15 kilowatts in capacity and rely on a renewable form of energy, or that are agricultural systems of no more than 100 kilowatts utilizing an anaerobic digestion process to generate electricity, to employ a "net

metering system" in the purchase and sale of electricity to and from an electric utility. A net metering system measures the difference between the electricity that the utility supplies to a customer and the electricity fed back to the utility's system during the customer's billing period. If the self-generator consumes more electricity than he or she produced during the billing cycle, the self-generator is billed for the difference, or "net" consumption of electricity. Conversely, if the self-generation of electricity is greater than that consumed during the billing cycle, the self-generator would receive the difference in the form of a bill credit.

In promulgating Act 136, the General Assembly found that the use of net metering for small self-generating electric systems is in the public interest in order to:

- (1) Encourage private investment in renewable energy resources;
- (2) Stimulate the economic growth of this state; and
- (3) Enhance the continued diversification of the energy resources used in the state.

1997 Vt. Laws. No. 136 § 1 (Adj. Sess.).

30 V.S.A. Section 219a, which was added by Act 136, requires that, by March 1, 1999, the Public Service Board ("Board") must establish by rule or order:

"standards and procedures governing application for, and issuance or revocation of, a certificate of public good for net metering systems under the provisions of section 248 of [title 30]" and,

"electrical safety, power quality, and interconnection requirements for net metering installations using generation equipment other than photovoltaic technology."

30 V.S.A. Section 219a(c), g(2).

In its Order of December 23, 1998, opening this investigation, the Board stated its intention to issue an interim order by March 1, 1999, to be followed by promulgation of rules under the Administrative Procedures Act, 3 V.S.A. Chapter 25.

In this proposed interim order, we recommend that the Board adopt the standards and procedures governing the application, issuance and revocation of a certificate of public good ("CPG") issued pursuant to 30 V.S.A. Section 248, and the interconnection requirements for net metered systems as set forth below. We recommend that these standards and procedures remain in effect until such time as formal rules can be promulgated under the Administrative Procedures Act, 3 V.S.A. Chapter 25.

PROCEDURAL HISTORY

On December 23, 1998, the Board opened an investigation into standards and procedures governing the application for, and the issuance or revocation of, certificates of public good for net metering systems under the provisions of 30 V.S.A. § 248. All Vermont electric utilities were made parties to the Docket. Appearances have been filed with the Board in this Docket by the following persons: Thomas Gray for the American Wind Energy Association ("AWEA"); William F. Ellis, Esq., and Munir Kasti for City of Burlington Electric Department; Victoria Brown, Esq., and Martin K. Miller, Esq., for Citizens Utilities Company; Mary C. Marzec, for Central Vermont Public Service Corporation ("CVPS"); Carole C. Obuchowski and Jeffrey P. Trout, Esq., for Green Mountain Power Corporation ("GMP"); David Blittersdorf, for NRG Systems, Inc; Leigh Seddon, for Solar Works, Inc.; Aaron Adler, Esq., for the Vermont Department of Public Service ("DPS or "Department"); Jon Anderson, Esq., for Vermont Electric Cooperative, Inc.; Matthew Rubin, for Vermont Independent Power Producers Association ("VIPPA"); Edward V. Schwiebert, Esq., for Vermont Marble Power Division of OMYA, Inc.; Trevor R. Lewis, Esq., for the Vermont Municipal Electric Departments ("Municipals")¹; and M. Jerome Diamond, Esq., and Avram Patt, for Washington Electric Cooperative, Inc. ("WEC").

On January 5, 1999, a prehearing conference was convened in this proceeding. Participating in the conference were: Aaron Adler, Esq., Scudder Parker, Andrew Perchlik, and Steve Litkovitz for the Department; Victoria Brown, Esq., and Dave Lahar for Citizens Utilities Company; Allan St. Peter, for CVPS; Carole C. Obuchowski and Charles Elliot, for GMP; Lawrence H. Mott, for Northern Power Systems; David Blittersdorf, for NRG Systems, Inc. and AWEA; Jeff Forward for Richmond Energy Associates; Leigh Seddon, for Solar Works, Inc.; Matthew Rubin, for VIPPA; Bill Powell, for WEC; Thomas Pierce, for Rochester Electric Company; and Trevor R. Lewis, for the Municipals. Present at the conference and requesting party status was David Blittersdorf, for NRG Systems, Inc. and AWEA. Hearing no objections, Mr. Blittersdorf was admitted as a party. None of the prehearing conference participants sought evidentiary hearings in this matter. Instead, the participants agreed to a

1. The fourteen municipals are the Villages of Barton, Enosburg Falls, Hyde Park, Jacksonville, Johnson, Ludlow, Lyndonville, Morrisville, Northfield, Orleans, Readsboro and Swanton, and the Towns of Hardwick and Stowe.

schedule whereby the Parties would submit drafts of an interim Board Order to the Board by January 21, 1999. On January 29, 1999 Blair Hamilton filed a Motion to Intervene on behalf of Vermont Energy Investment Corporation. No party has objected to this motion subsequently. Therefore the motion is granted.

On February 5, 1999, a Technical Workshop was held in this matter in order to facilitate negotiations toward an agreed upon settlement between the parties in this matter. The following persons were present at the workshop: Thomas Gray for AWEA; William F. Ellis, Esq. and Munir Kasti for Burlington Electric Department; Aaron Adler, Esq., Scudder Parker, Andy Perchlik, Sharon Allen and Phillip Barker for the DPS; Mary C. Marzec, Allen St. Peter, Frank Stacom and Gerald R. Cook for CVPS; Carole C. Obuchowski, Gregory L. Rieder, and Lou Fonte for GMP; David Blittersdorf, for NRG Systems, Inc.; Leigh Seddon, for Solar Works, Inc.; David Hill for Vermont Energy Investment Corp; Matthew Rubin, for VIPPA; Todd Allard for Vermont Marble Power Division of OMYA, Inc.; and William Powell, for WEC. It was agreed at the technical workshop that parties would file final revisions to their proposed interim orders and any further comments in this docket with the Board by February 12, 1999².

Pursuant to 30 V.S.A. Section 8, we report the following findings and recommendations to the Board.

FINDINGS AND RECOMMENDATIONS

Revised Section 248 Process

30 V.S.A. § 219a(c) provides, among other things, that the Board:

- (1) may waive the requirements of section 248 of this title that are not applicable to net metering systems, including but not limited to criteria that are generally applicable to public service companies as defined in this title;
- (2) may modify notice and hearing requirements of this title as it deems appropriate;

2. The Board wishes to acknowledge the receipt of written testimony and credentials for Global Resource Options, LLP on February 17, 1999. We are unable to consider this testimony at this time, because Global Resources has not yet filed for party status, however we will consider these comments during the subsequent rulemaking process.

(3) shall seek to simplify the application and review process as appropriate

The DPS and CVPS each proposed a simplified permitting process for net metered systems. Under both plans, applicants seeking a certificate of public good ("CPG") under 30 V.S.A. § 248 ("248") for a net metered system would apply to the Board on form(s) approved by the Board.

While each plan would meet the statutory goals to a certain extent, they differ significantly in some areas. The DPS plan emphasizes application simplicity and standard interconnection requirements, while CVPS's plan has more comprehensive application requirements and relies on specific interconnection agreements between generation facility owners and host utilities.

Based on the workshop and subsequent filings, the parties have reached consensus on a number of issues and have moved closer to the recommendations of the DPS, particularly for small (under 15kW) inverter-based systems. Consequently, we will use the outline of the DPS's proposal for the basis of our proposal for decision. After we present our recommendations below under each section, we will discuss the parties' positions related to each, and we explain our reasoning for our proposal.

Waiver of Section 248 Criteria

We recommend that the Board conditionally waive many of the criteria contained in 30 V.S.A. § 248(b), depending on the type of net metering project proposed. This waiver of various criteria is reasonable because many of the criteria of Section 248 clearly do not apply to most of the small net metering generation systems covered by this section. Also, for those few projects where certain additional criteria might apply, it is reasonable to only require review of the project under those limited criteria.

The waiver will be conditional; for a particular application, the Board may determine that it will review the application's compliance with criteria which it has waived if the project presents the potential for significant impacts under the relevant criterion or criteria. Any potential significant impact can be raised by the Board itself or any potentially affected party during the 30-day review period outlined below.

We propose that the Board conditionally waive criteria as follows:

- For photovoltaic ("PV") and fuel cell systems which are installed on or in an existing structure or new home or business, the Board will waive all criteria under 30 V.S.A. § 248(b) except (b)(3) (stability and reliability).
- For wind and farm methane systems, and PV and fuel cell systems which are installed on, as, or within a new structure which is not a home or business, the Board will waive all criteria under 30 V.S.A. § 248(b) except for (b)(1) (orderly development), (3) (stability and reliability), (5) (environmental considerations), and (8) (outstanding resource waters). With respect to 30 V.S.A. § 248 (b)(5), the Board will waive all subsections except for compliance with 10 V.S.A. § 6086(a)1(B) (waste disposal), 1(D) (floodways), 1(E) (streams), 1(F) (shorelines), 1(G) (wetlands), 4 (soil erosion), 8 (aesthetics, historic sites, natural areas), and 8(A) (necessary wildlife habitat and endangered species).

Discussion

Waiving certain criteria and differentiating reflects the specific characteristics of the varying types of projects. If a PV or fuel cell system is built on or within an existing structure, then site-specific impacts caused by the system, such as impacts to a nearby wetland, appear unlikely. Moreover, if such a system is installed on or within a new home or business, the home or business is likely to be the source of any site-specific impacts, which will be reviewed under applicable municipal land use regulations, Agency of Natural Resource ("ANR") permit processes, and potentially 10 V.S.A. Chapter 151 ("Act 250"). Therefore, additional Board review of the structures that support these small systems would be redundant and not necessary to ensure minimal environmental impact from the project.

In contrast, a free-standing system such as a wind turbine potentially has site-specific impacts that raise issues under the Section 248 criteria. For example, a wind turbine potentially could be sited near a shoreline, stream, or wetland, or could have aesthetic impacts. The same would apply to a farm system, which is likely to require a separate new structure for the system. Similarly, the possibility of site-specific impacts is presented by a PV or fuel cell system which is physically separate, or is housed separately, from an existing structure or a new home or business.

In proposing to only conditionally waive various criteria of Section 248, we are not waiving the possibility of any review of a proposed project under any particular criterion. We are simply recommending that the requirements for the presentation of evidence, a review of the project by the Board under the criterion, and the development of specific findings of fact will be

waived since the likelihood of any impact from the project under these criteria is so small. If, during the review period, any party raises a significant issue under any criterion, the Board will review the project under that criterion and require the applicant to demonstrate that the proposed project meets the criterion (or criteria).

The above proposal is somewhat modified from the DPS's proposal. We have added some language to make it clear that the waivers of certain criteria are truly conditional and are not an exemption from the statutory requirements. Rather the waivers are a reflection of the nature of most of the small net metering systems that will be proposed and the very small probability that any will have any significant impacts under the criteria of Section 248.

CVPS does not support the DPS's proposed waiver of many of the criteria. The company argues that the Board must have sufficient evidence to support its decision to issue a certificate of public good. Automatic waivers, by their very nature, create a presumption that prevent the Board from conducting a meaningful review. CVPS suggests that this provision creates a "remote possibility" standard that might not withstand judicial review. Instead, CVPS proposes that after a review of evidence provided in the application, the Board could waive hearings on a case-by-case, site/installation specific basis.

We have not accepted CVPS's recommendations regarding waivers because we believe that the legislature intended the Board to develop very simplified procedures for the review and approval of net metering proposals. Elimination of the need by applicants to produce routine evidence about the compliance of very small generation projects with criteria of Section 248 that are clearly not applicable or would in all probability not apply, as we have proposed above, would help further the legislative goal while still ensuring legitimate issues related to these projects can be addressed. Moreover, the Legislature in Section 219a(c) made clear that this simplification could take the form of a waiver of one or more of the Section 248(b) criteria.

Most of the other parties who commented on this section of the DPS's proposal supported waiver of as many criteria as possible to minimize application burdens on net metering customers.

Application Process

We propose that the application form consist of nine sections. Sections one and two are general information sections about the applicant and installer. Section three is a certification by the applicant on seven different points, discussed further below. Sections four through seven cover each type of generating system allowed under the legislation: photovoltaic, wind, fuel cells powered with renewable fuels, and farm methane. Section eight concerns environmental information which some systems will need to provide. Section nine, which must be completed by all applicants, requests a certification from the customer's utility that one percent of the company's peak 1996 demand has not yet been supplied by the cumulative capacity of all net metering systems connected to the company's system. Utilities will have ten days from receipt to sign the certification and return it to the applicant. If any utility fails to return the form within ten days, the certification will be deemed to be granted. Applicants must fill out and include sections one through three and nine, and any additional section(s) depending on the type of system(s) they are connecting to the grid.

We propose that the applicant will send notice to other parties listed in the table below, and that these parties will have thirty (30) days from the date the application was sent to the Board and parties to request a hearing and file any objections to the issuance of a CPG. Parties with objections or concerns must make a showing that the application raises a significant issue with respect to one or more substantive criteria applicable to the system. The Board may determine to hear evidence on the issue if it concludes that the petition does raise a significant issue with respect to one or more of those substantive criteria. In any decision resulting from such a hearing, the Board need only issue findings and conclusions on the criteria concerning which it determined to hold a hearing.

In cases where there are no objections or requests for hearing, or the Board determines that the petition does not raise a significant issue, the Board will issue a CPG to the applicant following the end of the thirty (30) day period, with a copy to all parties who received the application. In this case, the Board need not issue any findings or conclusions with its CPG. We also recommend that the CPG include as standard conditions that: (1) the applicant must comply with any representations and certifications it has made in the application; and (2) the applicant

must notify the Board, DPS, and other parties, and obtain Board approval prior to transfer of the CPG.

The following table explains who must receive a copy of the application for which systems.

Type of System:	Send application to PSB and copies to:
PV - on existing structure or new home or business	DPS, utility
PV - on new structure which is not a home or business	DPS, utility, local planning commission and selectboard, ANR, and adjoining landowners
Wind	DPS, utility, local planning commission and selectboard, ANR, and adjoining landowners
Fuel Cell- in existing structure or new home or business	DPS, utility
Fuel Cell - in new structure which is not a home or business	DPS, utility, local planning commission and selectboard, ANR, and adjoining landowners
Farm Methane	DPS, utility, local planning commission and selectboard, ANR, Department of Agriculture, and adjoining landowners

We propose that the applicant not be required to send notice to the regional planning commission because we believe that the net metered systems are unlikely to raise regional planning issues.

Discussion

Again, our proposal for the application process is very similar to the DPS's proposal. We have added a ninth section to the application (see below) that is a form that the applicant must have the interconnecting utility sign to certify that the cumulative capacity of all net metering systems connected to its distribution system does not exceed one percent of the utility's peak capacity. If the utility fails to sign and return the form within ten days, it will be presumed that one percent of the utility's capacity has not been supplied by net metering systems. Inclusion of this form in the application serves two purposes. First, it ensures that each net metering system can be connected to the utility's system without exceeding the one percent statutory limit; and, second, it informs the utility of the applicant's intent to file an application prior to its submission to the Board. We believe that it is important for the applicant to know in advance whether a

utility is at its capacity limit for net metering projects so that considerable time and expense are not expended planning a project and developing the application if the utility cannot accommodate the additional load. We also feel that it is useful for the utility and the customer to be in contact as early as possible during the planning of the facility so that there are no surprises for the customer about interconnection requirements or costs, and so that the utility is informed about the project's location and timing. The ten-day return requirement ensures that utilities do not unreasonably delay net metering applicants.

There were significant differences of opinion among the parties about the need for utility notice prior to the filing of applications for net metering. CVPS and GMP both argue that signed interconnection agreements must be part of each application for net metering. Obviously, this would require applicants to contact the interconnecting utility early in the planning process, and discuss the terms and conditions of interconnection prior to filing the application. The DPS did not recommend any requirement for pre-application contact with the utility by the applicant. Instead, the DPS would rely on the application notice requirement to inform the utility of the project. Some of the other parties, including Solar Works and AWEA, suggest that applicants should only be required to notify the DPS, who would then be required to provide notice to any other parties, including the interconnecting utility.

As explained below, we reject the utilities' request to require interconnection agreements for all facilities, because this requirement would likely involve very significant customer contact and negotiation with the utility prior to filing the application, thereby complicating the application process and possibly providing an impediment to net metering arrangements. Likewise, we reject the DPS's and other parties' proposals because they do not supply any notice to the utility prior to the filing of the application. We believe that our notice requirement is an adequate compromise because it accomplishes the two goals mentioned above and it does provide the opportunity for, but does not require, the exchange of information about net metering between the customer and the utility.

Some parties expressed concern that any provision that requires pre-application contact with the interconnecting utility would be a disincentive for net metering projects. They argue that the relationship is inherently unequal and utilities could easily discourage these projects. While

we agree that there may be some risk of this happening, we think that the benefits of opening the lines of communication between applicants and utilities as soon as possible outweighs risk of potential problems. Moreover, as structured, the utility involvement is limited. If the Board finds that utilities are causing problems for applicants because of our requirement for the pre-application certification of capacity, the Board can change the policy when it develops rules in this regard.

We have also added the requirement that applicants proposing new structures must provide a copy of the application to adjoining property owners to notify neighbors of their projects. We have made this recommendation because we are concerned that since there will be no requirement for publication of notice for these net metering projects, neighbors will have no other formalized way of learning about these proposals.

Finally, we have added a section to the front page of the application form for the applicant to indicate the date that the application was sent to the Board and other parties. This requirement is necessary to have a date certain for the beginning of the thirty (30) day review period. This section also includes instructions for filing comments or requesting a hearing.

PV Systems of 2 kW or less

We do not recommend any different or expedited review process for PV systems of 2 kW or less as proposed by the DPS.

Discussion

The Department proposed that applicants applying to interconnect a photovoltaic system of 2 kW or less, placed on an existing structure or new home or business, be automatically and immediately awarded a Section 248 CPG for their system upon the proper filing of the application form. The Department believes that such small systems are unlikely to pose significant impacts under the Section 248 criteria if they comply with the appropriate interconnection requirements. Under this DPS proposal, applicants of PV systems of 2 kW or less would be able to interconnect their systems as soon as they file a complete application with the Board, with copies to all required parties.

We disagree with this proposal because we can see little justification for it. There is no real evidence that these particularly small projects have any less impact than projects up to 15 kW; parties ought to have the same opportunity to request a review for those projects under the criteria as they would have for larger projects. Some parties suggested that since there is so little difference between all PV systems up to 15 kW, they should all be given automatic approval upon application filing. We do not support this suggestion for the same reasons.

Meeting the Applicable Section 248 Criteria

To streamline the application process, we propose to use certifications by the applicant concerning various issues. For example, compliance with the stability and reliability criterion would be demonstrated by certification that the mandatory interconnection requirements are met. Similarly, waste disposal and soil erosion issues would be addressed by requiring the applicant to certify that all project construction waste will be sent to a state-approved disposal facility and that project construction will follow the Vermont Erosion Control Handbook available from ANR.

We also propose to use compliance with municipal land use regulations as a means for demonstrating compliance with the orderly development criterion and partial compliance with the aesthetics criterion. While generation facilities are not subject to local zoning³, Act 136 grants the Board broad latitude to simplify the application process, and we propose that the Board use this latitude to allow applicants to certify compliance with local land use regulations rather than provide detailed information regarding compliance with local and regional planning as contemplated by the orderly development criterion. This certification would also provide some evidence that the aesthetics criterion has been satisfied, given the extent of typical local land use reviews. Because not all towns have effective local land use regulations, applicants will have to provide additional information about the aesthetics of the project in section eight of the application so that the Board can fully assess the aesthetic impact of a particular project. Notwithstanding any of the above, since under current law generation projects are not subject to local land use regulations, the Board should retain the ability to approve a given project even though it may not comply with such regulations.

The certifications which we propose are as follows:

3. 24 V.S.A. Section 4409(a)(1).

1. Applicants will certify that they carry an insurance policy with a minimum general liability of \$100,000 for the property where the system will be installed for residential systems and \$300,000 for farm and non-residential sites.
2. Applicants will certify that they have met all interconnection requirements.
3. Applicants will certify that they have sent copies of their applications to all required parties.
4. Applicants will certify that the information provided on the form is true and correct.
5. Applicants will certify that any construction activities will follow the recommendations of the Vermont Erosion Control Handbook.
6. Applicants will certify that their net metered system will comply with the requirements of the municipal land use regulations which would apply if the project were not subject to 30 V.S.A. § 248. This certification will apply only to wind and farm methane systems, and PV and fuel cell systems which are installed on, as, or within a new structure which is not a home or business.
7. Applicants will certify that any waste generated by the construction of this project will be disposed of at a state-approved disposal facility.

We also propose a streamlined set of questions to elicit information with respect to potentially applicable environmental criteria. These questions are included in section eight of the application.

Discussion

Again we recommend procedures to meet the applicable criteria of Section 248 that are somewhat modified from the DPS's proposal. The only significant departure from the DPS position on this matter is that we do not believe simple certification by an applicant that the project will meet the local land use regulations is sufficient evidence on which to base compliance with the aesthetics criterion. While such a certification will help the Board determine that projects subject to this criterion will not result in undue adverse impacts, more evidence is needed. Consequently, we have added a question to section eight of the application that requires a description of the aesthetic impact of the project and an explanation as to how the project will not have an undue adverse aesthetic impact. This requirement will be particularly important where local communities do not have any, or very few, land use regulations. We do not believe that this requirement will be particularly burdensome for applicants.

Revocation

30 V.S.A. § 219a(c) requires the Board's net metering rule or order to include standards and procedures governing revocation of CPGs for net metered systems. We propose the following language with respect to such revocation:

After notice and opportunity for hearing, the Board may revoke a certificate of public good for a net metered system after finding one or more of the following: (1) the certificate was granted based on false or misleading information supplied by the applicant; (2) the system was not installed or is not being operated in accordance with the National Electric Code or applicable interconnection requirements; (3) the holder of the certificate has failed to comply with the conditions of approval or representations made in the application for the certificate; or (4) good cause exists for revocation.

Discussion

We did not modify this recommendation of the DPS to which no party objected.

Liability Insurance

As outlined above under the certification section, we recommend that the Board require liability insurance of \$100,000 for residential customers, and \$300,000 for non-residential customers.

Discussion

There has been considerable disagreement among the parties as to whether liability insurance should be required for net metered customers and, if required, the appropriate level of insurance necessary for each project with regard to size and type of generation facility. Some of the Parties, specifically WEC, VIPPA, Solar Works and AWEA, endorse a policy which would not require additional liability insurance for these projects. CVPS and GMP have requested a \$500,000 insurance requirement and CVPS has requested to be made a named insured to the policy. The DPS has recommended an insurance requirement of \$100,000 in liability for residential systems and \$300,000 for farm and non-residential sites. We recommend that the Board adopt the liability insurance requirements set forth by the DPS because these requirements will be the least burdensome to net metering customers while at the same time ensuring the safety and reliability of the system pursuant to Act 136.

AWEA and VIPPA argue that the Board is barred by Section 219a(b) of H. 605 from imposing requirements such as liability insurance which are not necessary to the safety and reliability of the electric distribution system. Section 219a(b) of H. 605 reads as follows: "A customer shall pay the same rates, fees or other payments and be subject to the same conditions and requirements as all other purchasers from the electric company in the same rate class, except for appropriate and necessary conditions approved by the board for the safety and reliability of the electric distribution system." They argue that the imposition of insurance requirements is not a safety or reliability issue, but a financial one. They also argue that since the Board did not establish specific insurance requirements for small power producers in Docket 5026, the Board should be stopped from doing so in this Docket.

We believe there are sound public policy reasons for requiring small power producers to obtain a minimum amount of insurance as a condition of net metering arrangements. In Docket No. 5026 the Board examined the liability insurance issue for small power producers generally, holding that, "Such a requirement serves to protect the public in the event that losses occur as a result of the projects' operations". Docket No. 5026, December 6, 1990, at p. 13. The Board, in Docket 5026, found that "underinsured projects operate in a perilous financial environment." *Id* at p. 14. Net metering systems which suffer uninsured losses that lead to the inability of the customer to maintain the facility in adequate operating condition could have direct impacts on the safety and reliability of the electrical distribution of the system. Furthermore, while the Board did not establish specific amounts of liability insurance for small power generators in Docket 5026, the Board stated "that prudent business practice would dictate that adequate insurance coverage be maintained by all small projects." *Id* at p. 12. Although the risks of net metering customers are less than for the small power producers the Board examined in Docket No. 5026, we believe that the requirement of liability insurance amounts which are adequate to prevent uninsured losses and in the interest of promoting prudent business practice are consistent with the Board's decision in that proceeding and in the public interest in general.

CVPS and GMP argue that the amounts put forward by the DPS are not adequate to meet the risks attributed to the generation facility. They argue that a minimum of \$500,000 in liability insurance should be required for all net metering customers. The testimony of the parties and subsequent filings have provided little basis for this amount of insurance for these projects. There has been no demonstration that the risks involved in these projects require a particularly high level of

liability insurance. In fact, the evidence presented indicates that experience in other states had shown no evidence of disputes over liability arising from net metered equipment.

In recommending that the Board adopt the levels set forth by the Department, we have taken into account the Board's policy of minimizing cost burdens on small projects. We believe that the amounts of coverage required are well within the insurance that would normally be carried by the vast majority of residential and commercial applicants. As such, these levels should not present any additional cost burden upon the applicant. In addition, we believe that a clear provision of responsibility in this area will serve to streamline the application process. If, after experience with these systems, the insurance requirements outlined above prove too costly and a significant market barrier, it may be appropriate to create a net metering insurance "pool". Such a pool would be organized with the goal of allocating insurance costs among net metering customers in a way that minimizes the cost burden on an individual participant.

Interconnection Requirements

We recommend that the Board adopt a set of interconnection requirements, applicable to the net metered generation facilities under 15 kW, which provide reasonable assurance of safety and reliability. These requirements are slightly modified from the requirements set forth in the DPS' proposed requirements for facilities of this capacity. Details of these requirements are contained in tabular form in the interconnection requirements attachment (Attachment A). Applicants for facilities of this type will be required to certify that they meet these interconnection requirements. The application process will serve as notice to the utility of the applicant's intent to interconnect. The utility will have an opportunity to inspect the interconnected system at any time at their own expense.

With respect to generating facilities over 15 kW, we believe that the most effective and appropriate mechanism for reaching a mutual understanding of the respective roles and responsibilities of the generator and connecting utility, is an individually negotiated interconnection agreement. It is our recommendation that these facilities be required to negotiate an interconnection agreement with the respective utility and provide the agreement to the Board, prior to receiving Board approval for the project. In addition to meeting the interconnection requirements, applicants will be required to certify that they have general liability insurance in the amount of \$100,000 for residential applicants and \$300,000 for commercial and farm applicants.

Regarding generation facilities in operation prior to the date of this interim order, facilities that currently have interconnection agreements with their respective utility shall be considered "grandfathered" and in compliance with the interim order, provided the generator provides timely notice to the utility that it wishes to participate in the program and agrees to be subject to the conditions of the law and Board rule. Generation facilities which are currently operating without interconnection agreements and wish to participate in the net metering program must meet current requirements and standards as set forth in this interim order and Board rules.

We further recommend that interconnection requirements for all generating facilities, irrespective of type or capacity, shall be designed to meet the following objectives:

1. Ensure that the operation of the interconnected generator will not pose any unreasonable safety hazard to utility equipment, customer equipment, or human beings (including utility personnel and the public).
2. Ensure that the operation of the interconnected generator will not seriously degrade the quality of power or reliability for the utility system or for the customers connected to that system.
3. Ensure that the injection of power into the utility system from the generator will not cause voltage excursions (steady state or otherwise) that result in out-of-range feeder voltage conditions, objectionable voltage flicker, or improper operation of utility system equipment or customer loads.
4. Prevent the connected generation equipment from significantly interfering with the operation of utility feeder equipment such as overcurrent protection systems and voltage control systems.
5. Ensure that the interconnected generator will not cause undue interference with utility system service restoration attempts.
6. Maintain consistency with Act 136 of the 1997 biennium.
7. Allow for the interconnection equipment to be the minimum required in order to meet the preceding objectives in the most economical manner possible.
8. Be as simple as possible to understand and apply while remaining consistent with the preceding objectives.

Discussion

There has been considerable disagreement among the parties as to whether individual interconnection agreements negotiated between the net metering customer and the utility are necessary for each project regardless of size and type of generation facility or whether reliance on specific interconnection standards adopted by the Board would be sufficient. We will outline below the various positions of the parties with respect to interconnection agreements, and discuss the justification for our recommendations for interconnection requirements.

The DPS recommends that all facilities up to 100 kW in capacity be subject to various sets of interconnection requirements which would be specific to the size and type of generating facility. Applicants would certify that they were in compliance with the requirement standards based upon the type and size of the facility. We believe that evidence presented at the technical workshop and in subsequent filings supports the DPS position that projects under 15 kW in capacity are unlikely to have adverse impacts on a specific utility's system. We also believe that the eventuality of adverse impacts upon the utility's system is commensurately greater with generating facilities over 15 kW. Therefore, we believe that these standard requirements are appropriate for net metered facilities under 15 kW in capacity only.

The utilities participating in this Docket, specifically CVPS and GMP, have maintained that individual interconnection agreements specific to each net metering facility should be negotiated on an individual basis between the utility and the customer without regard to the size or capacity of the facility. CVPS has recommended an interconnection agreement similar to the agreements negotiated between the utilities and the small hydro projects. Based upon testimony and filings of the parties, we believe that this process would be unduly burdensome and prove a significant barrier to individuals seeking to install generation facilities under 15 kW in capacity. However, we believe that for the larger generation facilities, those over 15 kW in capacity, which may vary considerably with regard to size and type of facility, site location, and impacts on a specific utility's system, an interconnection agreement represents the most appropriate, efficient, and responsive mechanism for ensuring safety and reliability in the installation of these projects.

Finally, some of the parties, specifically the AWEA and Solar Works, believe that the imposition of any protective equipment requirements, other than industry recognized standards, for inverter-based installations under 15 kW in capacity are unnecessary. Furthermore, these parties argue that under the doctrine of estoppel, the Board should not be permitted to impose protective equipment

requirements on installations under 15 kW in capacity that they have not previously required on multi-megawatt small hydro generation projects, unless there is a showing that those conditions arise from some new issue that results specifically from net metering.

We believe that the principle of estoppel does not apply under these circumstances. The doctrine of estoppel generally requires some injury to the party invoking it. These types of facilities, in our view, are not comparable and there is no evidence to suggest that the standards developed for one are applicable to the other. There is also no evidence that parties have relied upon the lack of specific requirements or standards set forth in these agreements to their detriment or injury. Therefore, we believe the Board is not estopped from imposing requirements to ensure safety and reliability of net metering systems. Applicants are, of course, welcome to negotiate interconnection agreements with their respective utility, for net metering projects under 15 kW in capacity, if they feel that this process will prove less burdensome.

While our intent in this interim order is to make the interconnection process as simple as reasonably possible, we believe that unless the facility works out an individual interconnection agreement with the utility, it is in the public interest for net metering facilities under 15 kW in capacity be required to adhere to nationally recognized engineering and equipment safety standards in order to ensure safe and reliable operation. The evidence suggests that net metering facilities under 15 kW present little likelihood of adverse impacts on a specific utility's system if installed and operated properly. The standards we propose achieve this result. The great majority of these facilities appear to be already in compliance with the standards promulgated in the DPS's interconnection attachment for installations under 15 kW in capacity, which relies primarily on recognized industry and engineering standards. Therefore, the imposition of these standards will not constitute an undue burden or barrier to the applicant.

Disconnection

We recommend that the following procedures be adopted in this interim order to address such issues as utility disconnection of a net metered system and the procedures for Board resolution of disputes between utilities and system owners concerning such disconnection.

System owners that initiate permanent disconnections must notify their utility, and the utility in turn must notify the Board and the DPS of the disconnection.

If a utility needs to perform an emergency disconnection of the net metered system, the utility must notify the customer within 24 hours. If the emergency is not caused by the net metered system, then the utility will have to reconnect the system on cessation of the emergency. If the emergency is caused by the net metered system, then the utility must communicate the nature of the problem to the system owner within five days, and attempt to resolve the issue with the system owner. Within 30 days of the disconnection, the utility must file a disconnection petition with the Board if the utility and the system owner have not reached a mutually agreed-upon resolution.

In this regard, an “emergency” shall have occurred when the interconnection represents a condition which is likely to result in imminent significant disruption of service to the utility’s customers or is imminently likely to endanger life or property.

Non-emergency disconnections of the net metered system by a utility will follow the same process as emergency disconnections of such systems, except that the utility will give no less than five working days’ prior notice of the disconnection and such prior notice will communicate the reason for the disconnection. If the net metered system is not the reason for the system’s disconnection, the utility shall reconnect the system as soon as the activity (e.g., line maintenance) necessitating the disconnection ceases.

System owners who have had their systems disconnected will be able to file a complaint with the Board, pursuant to 30 V.S.A. § 208, at any time after the disconnection. If a disconnection petition or complaint is filed with the Board, the Board will hold a hearing on the matter within 30 days and rule on whether the net metered system should or should not be reconnected. The disconnecting utility will carry the burden of proof in any such proceedings.

A net metered customer shall be prohibited from reclosing a disconnect device, which has been opened and tagged by a utility, without the prior approval of that utility, or, in the event of a dispute, the Board.

Disconnection of electric service to a customer by a utility will remain governed by applicable Board rules 3.300 and 3.400.

Discussion

We did not modify this recommendation of the DPS to which no party objected.

Lockable Disconnect Switch

We recommend the requirement of a utility accessible, lockable, load break rated, visible break disconnect switch with safe working clearances for all installations, in accordance with the interconnection requirements included as part of Attachment A.

Discussion

WEC, AWEA and Solar Works argue that a disconnect switch is unnecessary for inverter-based systems without battery storage in that these systems have built in anti-islanding technology which will prevent the system from sending energy onto the grid once the power supply is cut off. Therefore, any safety concerns the utilities' may have for the linemen sent out to work on lines where net metering systems exist, are unfounded. They believe that UL listing certifying the anti-islanding protection should exempt these systems from having an outside disconnect switch. The result of this requirement, they assert, will be to raise the costs of installations without any clear safety benefit.

The DPS, GMP and CVPS are in agreement on the necessity of requiring an outside lockable disconnect for net metering systems. GMP and CVPS testified during the technical workshop on February 5, 1999, that there are union rules and utility guidelines which prohibit linemen from working on electrical lines without first verifying that all power to the line is disconnected. If linemen were forced to go inside each location with a net metering facility, in order to ensure disconnection, it would add to the cost and time required to resolve system problems. In this respect, the lack of outside visible disconnect switches for net metering systems would impede the ability of utilities to restore service or perform repairs and thus impact on the safety and reliability of their systems. Furthermore, there has been evidence presented that disconnect switches are a universal requirement in other states with net metering. Disconnect switches are also required in national electrical engineering codes for electrical grid interconnection.

While we wish to minimize the costs associated with these projects where possible, we agree with the DPS and CVPS and GMP that it is in the public interest and in the interest of system safety and reliability to require net metering systems to have outside disconnect switches.

Utility Tracking of Net Metered Systems

30 V.S.A. § 219a(f)(1) requires electric utilities to make net metering available “until the cumulative generating capacity of net metering systems equals 1.0 percent of the distribution company's peak demand during 1996.” In order to keep current records of the amount of net metered

generation, we recommend that the Board require each utility to track the number and size of net metered systems on their lines, as well as all disconnections.

Discussion

We did not modify this recommendation of the DPS to which no party has objected.

Other Issues

The Fourteen Municipal Utilities ("Municipals") provided written comments about other net metering issues that were not addressed by the other parties. The Municipals are primarily concerned about revenue erosion/cross-subsidization if small generation systems are credited on the basis of a full "bundled" rate that includes non-energy components. According to the Municipals, if a particular customer installs an eligible "small electrical generating system" and receives a credit for electricity generated on the basis of the full bundled kilowatt-hour rate the customer is being paid as if the energy generated is worth the price of the full bundled rate that includes the utility's costs for transmission, distribution, capacity, metering, billing, customer service, and other components of bundled electric service. The Municipals argue that to pay these producers the full retail rate for the energy produced results in a rate that significantly exceeds the "avoided cost" standard as required in PURPA, 30 V.S.A. § 209(a)(8) and Board Rule 4.100. This situation, they maintain, will cause revenue erosion for the host utility and put upward pressure on rates, as well as cross-subsidization of the customers who have installed such systems by other ratepayers. Therefore, the Municipals suggest that the Board should address and resolve this issue under its powers to assure just and reasonable rates and appropriate rate design.

We agree with the Municipals that excess kilowatt hours supplied to a utility's system for which a credit is given during one billing period may not have the same value to the utility as the kilowatt hours supplied to the customer by the utility. However, we believe that the Municipals' suggestion that the Board should use its rate making authority to rectify this problem is not possible, nor is it appropriate. Act 136 specifically outlines the methods that utilities must use to account for the production from small renewable energy systems. This includes allowing meters to run backward to give full credit for all production during a month that is less than the energy demanded by the

customer, and giving month to month credits for any excess production that can be carried forward to the end of the year. 30 V.S.A. § 219a(e). The Municipals' proposal is not appropriate because compensation plans for reimbursement of small renewable electricity production that would pay only utility avoided cost, would not, most likely, meet the goal of the Act to encourage private investment in renewable energy resources.

The Municipals also argue that the Board should, at the very least, revisit the above issues upon the advent of retail competition or unbundled bills. If either event occurs, the municipals suggest that it will be untenable for the Board, as a matter of law or sound regulatory policy, to allow self generating customers to be credited for the energy that they produce at full bundled rates when it is plain that the electric energy that they are producing is really only a part of the bundled rate.

We agree that, if there is retail competition, the Board's net metering requirements should be revisited to the extent that the statutory scheme permits such changes. However, any change in the underlying statutory requirements must be implemented by the legislature. Regarding any changes that may be needed if bills become unbundled prior to retail competition, we recommend that the Board should consider the implications of this issue as it reviews any proposal for unbundled bills. Until the net metering requirements are changed by the legislature, the method of providing bill credits as outlined in the statute must still be followed.

Finally, the Municipals argue that if the Board fails to resolve the above cost-allocation issues prior to retail competition or bill unbundling, it will create a potential future problem regarding customer expectations for the value of their energy production. Specifically, if many customers expect to receive credits for their production at full retail rates and make their investment decisions accordingly, any reduction in the value of their credits that may result from retail competition or bill unbundling may produce significant problems for these customers. Or, the Municipals suggest, this situation may even result in additional stranded costs for utilities if it is determined that net metering customers are entitled to these full credits. We believe that this is an issue that the Board cannot resolve at this time, and, in fact, may require legislative change or clarification.

Consistency of Interim Order with State Power Plans

30 V.S.A. § 219a(c)(4) requires that the Board find, in developing rules or orders to govern the Section 248 process for net metered systems, that its rules are consistent with state power plans.

This proposed interim order is consistent with the goals and recommendations of *Fueling Vermont's Future: Comprehensive Energy Plan and Greenhouse Gas Action Plan* ("CEP") (July, 1998), issued pursuant to 30 V.S.A. § 202b and the *Vermont Twenty-year Electric Plan* (1994), issued pursuant to 30 V.S.A. § 202. In both the CEP and in the *Twenty-year Electric Plan*, Vermont has committed itself to meet its energy needs in a sustainable and environmentally sound manner. Specifically, the CEP calls for the promotion of wind, solar, fuel cell and methane energy technologies. In addition, the CEP recommends the adoption of policies that encourage distributed utility planning. All of these goals and policy recommendations are advanced by the proposed interim order that creates a simplified net metering application process that assures both safety and reliability.⁴

The *Twenty-year Electric Plan* calls for an improvement in the diversity and balance in fuels and power supply resources for the state as well as the promotion of environmental quality. Included in the *Twenty-year Electric Plan* list of Recommended Actions are policies that urge accelerated development and use of renewable resources. Again, these goals are advanced by the proposed interim order.⁵

Conclusions

Based on all of the above, we recommend that the Public Service Board order all Vermont electric companies, individuals and other entities involved in net metered generation of electricity to act in accordance with the procedures and standards as specified above and in the attached interconnection requirements. These interim standards and rules should remain in effect until such time as formal rules are adopted in this docket.

Also, approximately one year from the issuance of this interim order, the Board should begin formal rulemaking proceedings. At that time the Board can review the experience gained from the operation of the net metering application and review process and it can make any necessary changes as proposed by the parties.

4. Relevant provisions of the CEP include but are not necessarily limited to: Volume 1, Summary and Recommendations, Chapter 3, II, G (see pp. 3-24 through 3-30); Volume II, Chapter 3, Section II, G, especially G1 (see pp. 3-139 through 3-161); and Volume II, Chapter 4, Section I, especially IA-D (see pp. 4-1 through 4-52).

5. Relevant provisions of the *Twenty-year Electric Plan* include but are not necessarily limited to Chapter 1, pp. 4-6; Chapter 4, pp. 51-55.

A proposal for decision, pursuant to 3 V.S.A. Section 811, has been served upon all parties to this case, and they have been afforded opportunity to comment.

Dated at Montpelier, Vermont, this 14th day of April, 1999.

s/ Peter Meyer

Peter Meyer
Hearing Officer

s/ Gregg C. Faber

Gregg C. Faber
Hearing Officer

Board Discussion

We adopt the recommendations of the Hearing Officers, including the proposed application process and interconnection standards, except as noted below.

Overall, we believe that the Hearing Officers have, with the participation of the parties, successfully developed a net metering program that meets the intent of the legislature to encourage private investment in renewable energy resources, stimulate the economic growth of the state, and enhance the continued diversification of energy resources used in Vermont. The proposed program should make it relatively easy for net metering customers to gain approval of their facilities, while still allowing for both adequate notice to interested or affected parties and reasonable review of projects' potential impacts, both economic and environmental.

The following reviews the Hearing Officers' proposal by describing the parties comments on each section and our rationale for either upholding the recommendations, accepting the parties' suggestions, or modifying the proposal on our own initiative.

Revised Section 248 Process

Waiver of Section 248 Criteria

NRG does not support the Hearing Officers' recommendation that certain criteria should be conditionally waived because this could add uncertainty, time delays, and economic hardship to the applicant. Waivers should be exemptions from the criteria and not conditional. AWEA argues that waivers should be expanded to include any criteria which local zoning authorities have reviewed and approved. AWEA supports this position by suggesting that it is critically important that the Board not burden net metering customers with unnecessary regulations or procedural requirements that would be significant disincentives for these marginally economic projects.

We have not changed the Hearing Officers' waiver of criteria recommendations because we believe that a reasonable balance has been achieved with this proposed application process. As designed, many criteria have been waived and no evidence need be presented because those criteria are clearly not applicable for small net metering projects. For those criteria where the project may result in an effect, the process will only require, beyond the production of minimal evidence, a more detailed review if an affected party brings the possible impact to our attention. We believe that this proposal will minimize application process burdens for net metering customers, while still allowing legitimate impacts to be reviewed by the Board.

Utility Certification and Notice

The Hearing Officers recommended two significant changes from the DPS's original application proposal. The first would require each applicant to contact the utility to which the net metering facility will be interconnected prior to filing the application. The purpose of this communication is for the applicant to obtain certification from the utility that the proposed facility will not cause the total capacity of net metering projects to exceed one percent of the utility's 1996 peak demand. A secondary reason for this requirement is to provide early notice to the utility of the customer's plans to install a net metering facility and to provide the opportunity for the utility and the customer to discuss the project. The second change to the DPS proposal would require net metering customers who are installing facilities on new structures which are not homes or businesses to also provide notice to adjoining landowners.

The DPS objected to the first requirement because it believes it would be an unnecessary hurdle for net metering customers to overcome, and because it could add up to two weeks to the application process. The DPS believes that it is up to the utility to monitor whether the one percent cap has been exceeded and, in any event, the cap is not an absolute limit but rather is a minimum requirement that can be exceeded if the Board so finds it to be in the public interest. As an alternative to the Hearing Officer's proposal, the DPS suggests that page one of the application should include a statement that encourages net metering customers to work with their utility, and that applicants should be aware that utilities are only required to accept net metering facilities on a first-come, first-served basis until the one percent cumulative total is reached. The statement would also indicate that applicants who choose not to contact their utility prior to filing run the risk that, after filing, their application will be determined to exceed the one percent rule. Finally, the statement would indicate that the Board could rule that the limit could be exceeded if it is found to be in the public interest.

Solar Works commented that applicants should be required to file their applications only with the DPS to minimize the burdens of the application process. Solar Works suggests that the DPS would then have the responsibility of forwarding the application to all required parties. Solar Works also argues that the requirement that applicants must notify adjoining landowners is duplicative and burdensome. Solar Works believes that it is sufficient to rely on local zoning and land use regulations to protect the interests of adjoining landowners.

NRG and AWEA also argue that applicants should not be required to obtain pre-application certification from utilities about the capacity limitation. They believe that it is unlikely that utilities will reach this limit for many years, and utilities should be required to track and notify the Board when this capacity is reached. They also argue that applicants should be required to file with the DPS only, with the DPS forwarding the application to all required parties. Finally, these parties argue that they do not see any benefit to the applicant from early communication with the utility.

We have adopted the Hearing Officer's recommendations regarding the applicant's obligation to obtain certification from the interconnecting utility because this requirement will ensure that utilities are informed about potential projects prior to application filing, and it may reveal any utility capacity limitations before applicants have spent significant time or resources developing applications. Also, early contact between the utility and the net metering customer will help the utility plan for the interconnection, and it will allow any interconnection issues to be discovered and discussed as soon as possible. We do not think that this requirement will be a significant burden for applicants; and, with proper planning, it should not delay the application process unreasonably. If this requirement proves to be a problem for applicants, we will consider changing it in the permanent net metering rules.

We reject the recommendations of Solar Works, NRG, and AWEA that applicants should only have to file their applications with the DPS, with subsequent distribution to the parties by the DPS. Not only could this be an unreasonable burden on the DPS if there are a significant number of net metering applications filed, but also it should not be a significant burden on any one applicant to produce some extra copies of the application and distribute them to the listed parties. In fact, by having applicants retain responsibility for this part of the application process, they will not have to depend on the performance of a state agency to initiate the 30-day review period.

We also support the Hearing Officers' requirement that applicants must provide copies of the application to adjoining property owners for those types of net metering projects that might impact adjoining parties' interests. We note that simple reliance on local zoning and development review procedures to provide this notice as recommended by some parties would not be sufficient notice to adjoining landowners, particularly in those towns with no local land use regulations. A basic premise of Section 248 is that affected parties will have notice of generation projects that may affect their interests. Because we have waived the requirement for publication of notice, actual

notice to adjoining property owners may be the only way that these potentially effectual parties will learn of their neighbor's project.

Other Board Changes to the Application

In reviewing Section 8 - Environmental Information - in the application, we note that the checklist of potentially affected resources does not include historic districts. Since net metering installations may have an effect on such resources, we will add historic districts to the list in this section.

Finally, we have added a statement to the first page of the application form that informs applicants that any material changes to the net metering project after installation will require an amendment to the certificate of public good. This requirement will also be a standard condition of all certificates of public good issued for net metering projects.

Interconnection Requirements

Liability Insurance

Industry proponents argue that the requirement of liability insurance in the amounts of \$100,000 for residential applicants and \$300,000 for commercial applicants recommended by the Hearing Officers, is unduly burdensome, an additional cost and potentially a barrier to applicants. They believe that insurance is not an issue connected to the safety and reliability of the electrical system, and therefore should not be considered as part of the Order. They also note that past Board decisions have not required liability insurance for small power producers.

The Board agrees with the Hearing Officers finding that net metering systems which suffer uninsured losses could lead to the inability of the customer to maintain the facility in adequate operating condition. This would have a direct impact on the safety and reliability of the electrical system. Further, in past Board decisions regarding small power producers the Board held that prudent business practice would dictate that insurance be maintained by all small power projects. Finally, we believe the minimum insurance requirements recommended by the DPS and the Hearing Officers are within the average amounts usually maintained by residential or commercial applicants, and as such should not present an additional burden in the majority of cases. However, the Board wishes to reiterate its intention to reexamine this issue, as to whether it presents an additional barrier at the time the Board promulgates formal rules in this matter.

Uniform Interconnection Standards for Net Metering Systems over 15kW in Capacity

The Department has formulated uniform interconnection standards for net metering systems over 15kW in capacity which they have proposed for Board adoption. The Department contends that the Board is required by 30 V.S.A. Section 219a(g)(2) to adopt interconnection requirements for all net metered systems. The DPS argues that the Hearing Officers' requirement of individually negotiated interconnection agreements between net metering applicants and their respective utilities does not meet the statutory requirement. Further, the Department believes that negotiating interconnection agreements may prove a potential barrier for the applicant in that utilities may use its unequal bargaining power to impose burdensome requirements upon the applicant.

While the Board agrees with the Department's contention that interconnection requirements for all net metered systems are a statutory requirement, we do not believe that this obligation requires the adoption of the specific interconnection standards proposed by the Department. We believe that the Hearing Officers' recommendation of individually negotiated interconnection agreements for these larger farm methane systems, which are more likely to have site specific impacts on the utilities system, will ensure the safety and reliability of the electric distribution system until specific standards can be developed. When the parties have had the opportunity to review the DPS's proposed standards in detail and reach consensus about the requirements, we will consider adopting specific standards for these larger systems. Moreover, the Hearing Officers have also recommended interconnection requirements that apply to all interconnections regardless of facility capacity. The Board believes that these interconnection requirements as set forth in the Interim Order satisfy the statutory requirements regarding safety and power quality issues for all systems.

We also find the Department's contention that the utilities will abuse their bargaining position during any required interconnection negotiation process to delay and unfairly burden the net metering applicant during the interconnection process is unfounded. There is no evidence to suggest that utilities will engage in this type of behavior. However, we reaffirm our intention to reexamine any issues that may arise with respect to unnecessary or burdensome requirements placed upon applicants by the utilities during the application and review process during our promulgation of formal Rules in this matter.

Uniform Interconnection Standards for Net Metering
Systems 15kW and Under in Capacity

The Department recommends that we refer to net metering systems described as "under 15kW" in the interim order as "15kW and under." We conclude that the intent of the Hearing Officers' Proposed Order in setting requirements was to include systems up to and including 15kW in referring to systems under 15kW. Therefore, any references to systems under 15kW in the Order should be construed as including systems of 15kW in capacity.

Industry proponents have argued that requirements for systems up to and including 15kW in capacity are unnecessary. They argue that the systems should only be required to conform to UL, IEEE and NEC standards to ensure safety and reliability. Any additional requirements are unnecessary and unduly burdensome, they contend. Industry proponents have also raised arguments against the requirement of outside lockable disconnect switches, as unnecessary and a significant cost barrier for customers.

The Board finds that the requirements as recommended by the Hearing Officers in Attachment A to the Order, which include standards for voltage flicker, disconnect switches, and fault protection, are in large part based on these nationally recognized standards. The additional requirements regarding periodic testing and inspection are necessary to ensure continued compliance with these standards. Utility testing and inspection of these systems shall be in accord with Act 136(g) (5) which states that utilities must conduct these tests at their own expense and provide reasonable written notice to the customer prior to the testing and inspection.

With respect to the disconnect switch requirement, we find that IEEE standards currently require this type of disconnect switch for these installations. As stated above, the proposed interconnection requirements are based on these nationally recognized standards. If, in the future, IEEE, UL or NEC standards are modified with regard to any features of the interconnection requirements, we will reexamine those requirements at that time to determine if our requirement for a lockable disconnect switch should be removed. Further, we note that applicants who feel these requirements are overly burdensome, are free to negotiate an interconnection agreement with their utility. Therefore, these requirements should not prove an undue burden or barrier to potential net metering applicants.

CVPS has argued that the provision of a lockable disconnect plug for systems under 500 watts is in violation of NEC standards and should be removed from the requirements. The Board agrees with the Hearing Officers' recommendation that an applicant using this type of device should be required to file a proper application with the utility and the utility will then be able to

define the means by which the plug is locked. Therefore, we find that this requirement should not unduly impact the safety of the utility's system and shall remain as part of the requirements for these systems. In addition, CVPS recommends certain textual clarifications and revisions to the specific interconnection requirements. The Board finds that the current language in the interconnection requirements, as recommended by the Hearing Officers, is self explanatory and sufficient to protect the interest of public safety. Therefore, the language requires no further explanation or revision at this time.

NRG systems argues that some of the older wind turbine systems accomplish anti-islanding protection through devices other than the relaying electronic devices specified in Table 3 of Attachment A. An exception allowing electromechanical devices to be included in these requirements would allow many older systems to participate in the net metering program. There is no evidence to suggest that these older systems have presented any safety or reliability concerns in past or current operation. Therefore, Table 3 of Attachment A will be amended to include "balance of system devices" after "Industrial relays" in the list of protective functions required and grade of relay.

Time of Day and Demand Customers

CVPS has presented evidence that net metering for customers using demand and time of day meters would be impossible without the installation of a second meter, and that these customers should be required to purchase a second kWh meter to measure their energy production. The Department has recommended that the Board adopt CVPS's recommendations with the following conditions: (1) time of day customers should have the option of buying a less expensive separate kWh meter; and (2) the utility should be required to offer each type of net metering customer the opportunity to obtain information about moving to a different rate. There has been no evidence to show that time of day or demand customers can accomplish net metering without purchasing a second meter. Therefore, time of day and demand customers who wish to participate in net metering will be required to purchase a second kWh meter from their respective utility under the conditions as recommended by the Department above.

INTERIM ORDER

IT IS HEREBY ORDERED, ADJUDGED AND DECREED by the Public Service Board of the State of Vermont that:

1. The findings and recommendations of the Hearing Officers are adopted. All Vermont electric utilities, individuals and other entities involved in the deployment and use of net metered generation facilities, as defined in 30 V.S.A. § 219(a), shall act in accordance with the procedures and standards as described herein upon the approval date of this Interim Order. This Interim Order shall remain in effect until such time as formal rules are adopted by the Board in this docket.

2. All electric utility companies shall file revised tariffs within thirty days of the approval date of this Interim Order, to implement the net metered billing procedures as outlined in this report.

3. Approximately one year from the date of this Interim Order, the Board will commence rulemaking proceedings to promulgate formal rules for net metered generation.

DATED at Montpelier, Vermont, this 21st day of April, 1999.

<u>s/ Richard H. Cowart</u>)	
)	PUBLIC SERVICE
)	
<u>s/ Suzanne D. Rude</u>)	BOARD
)	
)	OF VERMONT
<u>s/ David C. Coen</u>)	

OFFICE OF THE CLERK

Filed: April 21, 1999

Attest: s/ Cynthia G. Buska
Acting Clerk of the Board

NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board of any technical errors, in order that any necessary corrections may be made. Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further Order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and order.