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James J. McNulty
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

Dear Mr. McNulty,

Thank you for the opportunity to comment on the Advance Notice of Proposed Rulemaking Regarding Small Generation Interconnection Standards and Procedures, Docket L-00040168. I am a photovoltaic system designer and installer in southeastern Pennsylvania, and I would like to bring two issues to your attention based on my experience in designing or installing nine operating photovoltaic systems in Pennsylvania and 25 systems that are in the design or planning phase.

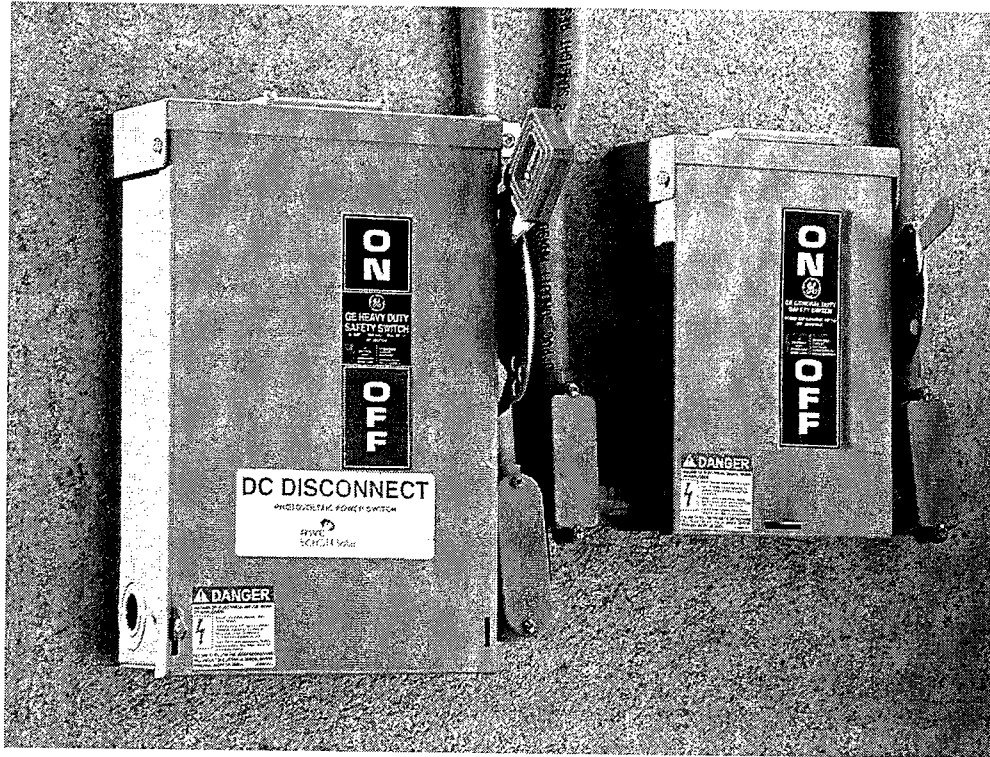
Both of the issues of concern are interconnection requirements of PECO Energy that go beyond what is necessary for safety and National Electrical Code (NEC) compliance. These are the requirement for an outdoor AC disconnect switch as part of all grid-connected photovoltaic systems, and the requirement of separate meters for the inflow and outflow of power at locations with net metering. The requirements have led to added costs, delays, and other difficulties, and in some cases have made it impossible to install systems at otherwise excellent locations. In spite of complaints from me and from others, PECO Energy has been unwilling to modify these requirements.

Therefore, I request that the PUC in its rulemaking forbid utilities from requiring an outdoor AC disconnect switch, and require utilities to provide a single bi-directional meter for locations with net metering.

All photovoltaic systems are required by the NEC to have a DC disconnect switch. However, an outdoor AC disconnect switch is not required by the NEC for most photovoltaic systems. It has been claimed that the outdoor AC switch is necessary for the safety of linemen, but this simply is not the case for systems with inverters that meet the anti-islanding requirements of the IEEE and UL.

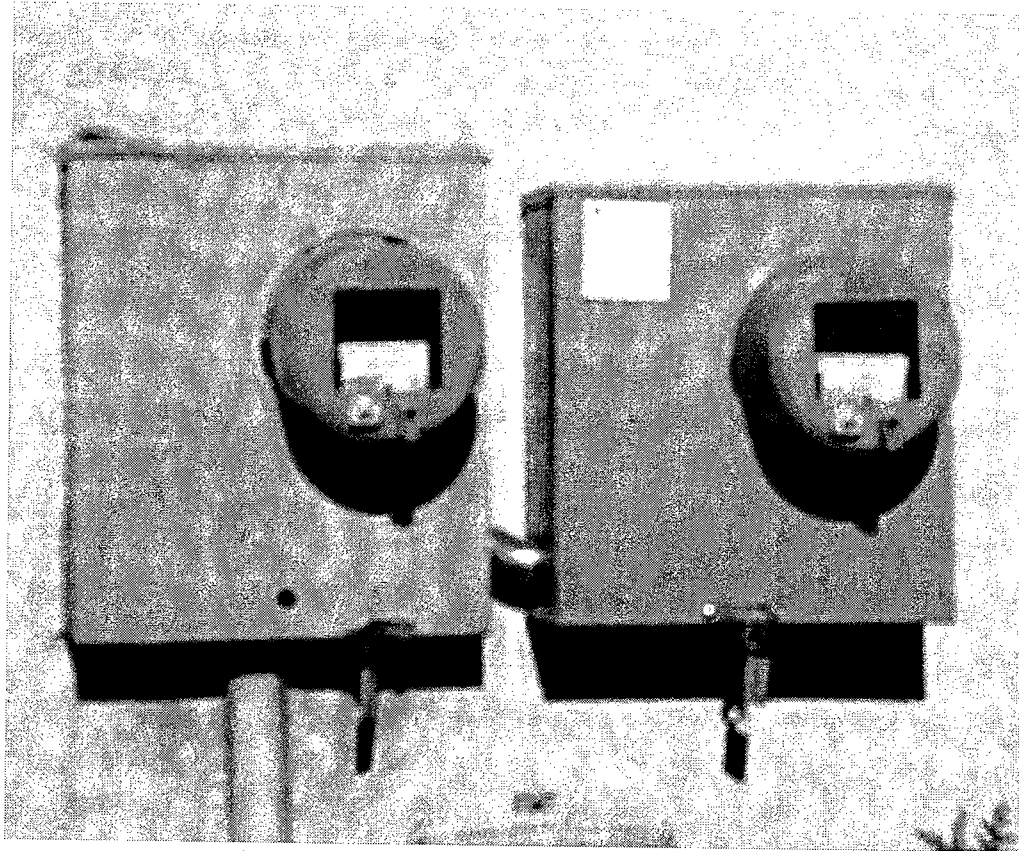
The picture on the next page shows the DC and AC disconnect switches in a system I designed. The switch on the left is the DC disconnect required by the NEC. The switch on the right is the outdoor AC disconnect that is not required by the NEC in this system but still required by PECO Energy. While neither switch is actually necessary for line worker safety, anyone who needed to shut off the system would be able to do so with just the DC switch. There was significant additional cost and difficulty in including the second switch in this system. While there are some systems that due to their design require an outdoor AC disconnect switch in addition to the DC switch for compliance with the NEC, these systems will certainly continue to have them as

enforced by code officials. But most systems are like the one below and do not need an outdoor AC disconnect switch.



The second requirement that has been an impediment to the installation of photovoltaic systems is the requirement in the PECO Energy service territory of separate meters for inflow and outflow at locations with net metering. The picture below shows the two meters at the location of a small (1.1kW maximum output) photovoltaic system. While in this case it was possible to have the two meters, making the arrangements for the addition of the second meter at this site caused added costs, many scheduling difficulties, and even led to safety concerns during the project.

The difficulties and costs associated with the additional meter could have been avoided if the utility had simply provided a single bi-directional meter in the original socket at this household. There are also many excellent locations for photovoltaic systems where I have been unable to install a system exclusively because there is no practical location for a second meter. This loss of business has also been a loss to the Commonwealth. Single bi-directional meters are available, and are in use in other parts of Pennsylvania, and in other states.



In summary, I hope that the Public Utility Commission will require utilities in Pennsylvania to drop the requirement of an outdoor AC disconnect switch, and provide a single bi-directional meter for net metered locations. This will reduce the costs of photovoltaic systems and advance solar electricity generation in the Commonwealth. I would be glad to provide further information on these issues if it can be of assistance.

Sincerely yours,

Finley R. Shapiro