

FORM FOR PROPOSAL FOR 2014 NATIONAL ELECTRICAL CODE®

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Type or print **legibly** in **black ink**. Use a separate copy for each proposal. Limit each proposal to a **SINGLE** section. All proposals **must be received by NFPA by 5 p.m., EST, Friday, November 4, 2011**, to be considered for the 2014 National Electrical Code. Proposals received after 5:00 p.m., EST, Friday, November 4, 2011, will be returned to the submitter. If supplementary material (photographs, diagrams, reports, etc.) is included, you may be required to submit sufficient copies for all members and alternates of the technical committee.

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Please indicate organization represented (if any) PV INDUSTRY FORUM

1. Section/Paragraph 690.7(C)

2. Proposal Recommends (check one): new text revised text deleted text

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted): [Note: Proposed text should be in legislative format; i.e., use underscore to denote wording to be inserted (inserted wording) and strike-through to denote wording to be deleted (~~deleted wording~~).]

Revise 690.7(C) as follows:

(C) Photovoltaic Source and Output Circuits. In one and two family dwellings, PV source and PV output circuits that do not include lamp holders, fixtures, or receptacles shall be permitted to have a maximum systems voltage up to 600 volts. Other installations with a maximum systems voltage over ~~600-1000~~ volts shall comply with Article 690, Part IX.

Systems with a maximum systems voltage of 1000 volts or less shall use the circuit sizing and current calculations of Section 690.8.

4. Statement of Problem and Substantiation for Proposal: (Note: State the problem that would be resolved by your recommendation; give the specific reason for your Proposal, including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.)

There are numerous large (megawatt size) 1000 volt dc PV systems being installed throughout the country. Although these Power Purchase Systems (PPA) usually are fenced and accessed only by qualified people, they are not owned and operated by a utility on utility property and therefore come under the requirements of the *NEC*.

There is a gap in the requirements for systems below the 600-volt limit in the *NEC* and the requirements for 2001 volt and higher medium voltage systems.

The cable ampacities (and cable types) given for cables rated from 0 to 2000 volts in Table 310.15(B)(16) differ significantly from the ampacities for cables rated from 2001 to 35 KV given in tables in the 310.60(C) series.

As an example, engineers are arguing that Article 240.101 (overcurrent devices above 600 volts) should be used for sizing overcurrent devices on 1000-volt PV systems rather than article 240.4. Article 240.101 allows overcurrent protection to be used at three (3) to six (6) times the conductor ampacity. PV modules and inverters listed at 1000 volts are not tested and evaluated during the listing process for use with overcurrent devices of this magnitude. Using such large overcurrent protective devices with this PV equipment could result in significant equipment damage and personnel hazards.

This proposal requires that systems operating at 1000 volts use 690.7 and 690.8 to size the conductors and overcurrent devices rather than go to the parts of the code that applies to the more specialized over 600 volt devices. And equipment

A related proposal is being submitted for Section 690.80

5. Copyright Assignment

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- (b) Some or all of the text or other material proposed in this Proposal was not authored by me. Its source is as follows: (please identify which material and provide complete information on its source)

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