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.

For technical assistance, please call NFPA at 1-800-344-3555.

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Please indicate organization represented (if any) PV INDUSTRY FORUM

1. Section/Paragraph 705.12(A)

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 Section 705.12(A) as follows:

(A) Supply Side. An electrical power production source shall be permitted to be connected to the supply side of the service disconnecting means as permitted in 230.82(6) in accordance with 705.12(A)(1) through 705.12(A)(5). ~~The sum of the ratings of all overcurrent devices connected to power production sources shall not exceed the rating of the service.~~

(1) The sum of the ratings of all overcurrent devices connected to power production sources shall not exceed the rating of the service.

(2) The service conductor connection shall comply with the requirements established for services in Article 230.

(3) The Tap Rules of Section 240.21 shall not be applied.

(4) Where a main-lug-only main service panel is used, the sum of the ratings of all overcurrent devices in the panel supplied from power production sources shall not exceed the rating of the service panel.

(5) Where a multimode inverter is connected, the maximum load of this inverter shall be added to the calculations of Article 230 for sizing the service.

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.)

Supply side connections of PV equipment are becoming more frequent as the size of these PV systems exceeds the allowances for load side connections. Requirements for these supply-side connections must be established which are not found elsewhere in the Code.

NFPA has ruled informally that these supply side utility interactive inverter connections are equivalent to a second service entrances on the building or structure and as such must comply with Art 230 requirements.2014

(1) Moved from last line of existing text.

(2) Self explanatory

(3) The Section 240.21 Tap Rules have been developed over many years with a carefully controlled system where there is only one source of current and that source is protected by an overcurrent device. With a service tap, and a PV utility-interactive inverter, there are two sources of current and one (the utility-source) is effectively not protected at anywhere near the ampacity of the conductors. Tap rules have not been developed for this type of system, and the allowances of Section 240.21 should not be applied.

(4) In some installations, a main-lug-only main service panel may be used that has one or more open breaker positions (of the allowed six) that can be used for the connection of utility-interactive inverter(s). This requirement limits the output of the added power production sources to the rating of the service panel. Without this requirement, installers may inadvertently connect two 60-amp utility-interactive inverters to a 100-amp panel.

(5) Multimode inverters have a energy storage-charging mode that becomes a load on the service entrance conductors. In the larger systems, these loads can be hundreds of amps. That load is in addition to the load presented by the existing service entrance load center. The service entrance conductors may have to be resized per Art 230 requirements.

5. Copyright Assignment

(a) ☒ **I am the author of the text or other material (such as illustrations, graphs) proposed in the Proposal.**

(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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Signature (Required) John C. Wiles Jr.

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