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 690.14(D)

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~~).]

It is proposed that Section 690.14 be restructured and revised to improve clarity and intent. This new proposal revises 690.14(D), which is renumbered to (H). The original *2011 NEC* 690.14 and an overview of the revised 690.14 are attached below. Additional proposals are provided on a subsection-by-subsection basis to allow comparisons with proposals submitted by others.

(~~D~~ H) Utility-interactive Inverters Mounted in Not Readily-Accessible Locations, Utility-interactive inverters shall be permitted to be mounted on roofs or other exterior areas that are not readily accessible. These installations shall comply with 690.14(H) (1) through (5):

(1) A dc PV disconnecting means shall be mounted within sight of or in each inverter.

(2) An ac disconnecting means shall be mounted within sight of or in each inverter.

(3) An additional disconnecting means complying with 690.14 (I) shall be installed on the ac output circuit of the inverter(s).

(4) A plaque shall be installed in accordance with 705.10.

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.)

690.14(H) Previously (D) with revisions: Clarified to be consistent with definitions, Style Manual, and revised numbering requirements.

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***2011 NEC* Original:**

690.14 Additional Provisions. Photovoltaic disconnecting means shall comply with 690.14(A) through (D).

(A) Disconnecting Means. The disconnecting means shall not be required to be suitable as service equipment and shall comply with 690.17.

(B) Equipment. Equipment such as photovoltaic source circuit isolating switches, overcurrent devices, and blocking diodes shall be permitted on the photovoltaic side of the photovoltaic disconnecting means.

(C) Requirements for Disconnecting Means. Means shall be provided to disconnect all conductors in a building or other structure from the photovoltaic system conductors.

(1) Location. The photovoltaic disconnecting means shall be installed at a readily accessible location either on the outside of a building or structure or inside nearest the point of entrance of the system conductors.

Exception: Installations that comply with 690.31(E) shall be permitted to have the disconnecting means located remote from the point of entry of the system conductors.

The photovoltaic system disconnecting means shall not be installed in bathrooms.

(2) Marking. Each photovoltaic system disconnecting means shall be permanently marked to identify it as a photovoltaic system disconnect.

(3) Suitable for Use. Each photovoltaic system disconnecting means shall be suitable for the prevailing conditions. Equipment installed in hazardous (classified) locations shall comply with the requirements of Articles 500 through 517.

(4) Maximum Number of Disconnects. The photovoltaic system disconnecting means shall consist of not more than six switches or six circuit breakers mounted in a single enclosure, in a group of separate enclosures, or in or on a switchboard.

(5) Grouping. The photovoltaic system disconnecting means shall be grouped with other disconnecting means for the system to comply with 690.14(C)(4). A photovoltaic disconnecting means shall not be required at the photovoltaic module or array location.

(D) Utility-Interactive Inverters Mounted in Not-Readily-Accessible Locations. Utility-interactive inverters shall be permitted to be mounted on roofs or other exterior areas that are not readily accessible. These installations shall comply with (1) through (4):

(1) A direct-current photovoltaic disconnecting means shall be mounted within sight of or in the inverter.

(2) An ac disconnecting means shall be mounted within sight of or in the inverter.

The requirements in 690.14(D)(1) and (D)(2) provide for servicing disconnects at the inverter.

(3) The ac output conductors from the inverter and an additional ac disconnecting means for the inverter shall comply with 690.14(C)(1).
(4) A plaque shall be installed in accordance with 705.10.

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Proposed Reorganized and Revised: Only additions are shown. Deletions and renumbering (where changed) not shown

690.14 Additional Provisions. The direct current (dc) PV system disconnecting means shall comply with (A) through **(**H**).** AC PV disconnecting means for PV systems or AC PV modules shall comply with (H) and (I**).**

(A) Disconnecting Means. The disconnecting means shall not be required to be suitable as service equipment and shall comply with 690.17.

(B) Equipment. Equipment such as PV source circuit isolating switches, overcurrent devices and blocking diodes shall be permitted on the PV side of the dc PV disconnecting means.

(C) Location. The dc PV system disconnecting means shall be installed at a readily accessible location either ~~on the~~ outside of a building or structure or inside nearest the point of entrance of the system conductors.

Exception: The location of the PV system disconnecting means for the dc PV source and output circuits that comply with 690.31(E) shall be permitted to be in a location that is remote from the point of entry of the system conductors.

The PV disconnecting means shall not be installed in bathrooms

FPN #1: The readily accessible location requirement for the dc PV system disconnecting means and the requirement that it be at the point of entry of the conductors implies that the PV system conductors remain outside the building until the first disconnect is reached. The exception, when met, allows these conductors to be routed through the building to the disconnecting means location that is still required to be readily accessible, but no longer is required to be at the point of penetration.

(D) Marking. Each dc PV system disconnecting means shall be permanently marked and identified.

(E) Suitable for Use. Each dc PV system disconnecting means shall be suitable for the prevailing conditions. Equipment in hazardous (classified) locations shall comply with Articles 500 through 517.

(F) Maximum Number of Disconnects. Each PV system, as a parallel power production service permitted by 230.2, shall have dc PV system disconnecting means consisting of not more than six switches or six circuit breakers mounted in a single enclosure, in a group of separate enclosures, or in or on a panel board as permitted by 230.71.

(G) Grouping. The dc disconnecting means shall be grouped with the disconnecting means for other services connected to the building or structure. A dc PV disconnecting means shall not be required at the PV module or array location. A dc PV disconnecting means shall be permitted at the array location if that location complies with 690.14 (C).

Exception: The disconnecting means for multiple PV systems on a single building or structure shall not be required to be grouped together where the requirements of 705.10 are met.

(H) Utility-Interactive Inverters Mounted in Not Readily-Accessible Locations, Utility-interactive inverters shall be permitted to be mounted on roofs or other exterior areas that are not readily accessible. These installations shall comply with 690.14(H) (1) through (5):

(1) A dc PV disconnecting means shall be mounted within sight of or in each inverter.

(2) An ac disconnecting means shall be mounted within sight of or in each inverter.

(3) An additional disconnecting means complying with 690.14 (A), (C), and (E) shall be installed on the ac output circuit of the inverter(s).

(4) A plaque shall be installed in accordance with 705.10.

(I) AC PV Disconnect. The main service disconnect on a building or structure shall be permitted to serve as the ac PV disconnect for utility-interactive inverters or ac PV modules connected to the load side of the service disconnect.

Disconnecting means in the ac output circuit shall be required where the individual inverter is not within sight of the main service disconnect.

Where connections, as permitted by 705.12(A), are made on the supply side of the service disconnect, they shall be considered parallel power production systems as permitted by 230.2 and shall be permitted an additional six ac PV disconnects per PV system as allowed by 230.71.

Disconnecting means in the inverter ac output circuit shall be permitted for each individual inverter.

The disconnecting means shall comply with 690.17.

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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