

SUMMARY OF PROPOSED 2011 NEC CHANGES

Ward Bower

Sandia National Laboratories
Solar ABCs Stakeholder Meeting

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Acknowledgements

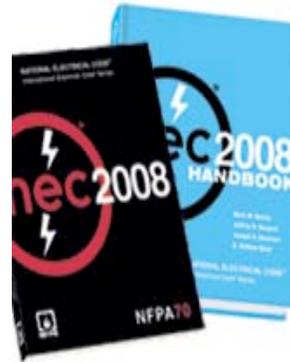
Proposed 2011 NEC Changes for PV

The author wishes to acknowledge the participation, collaboration and expertise of nearly 150 dedicated engineers, installers, designers, technicians and PV industry associates that participated in the “Industry Forum” for Article 690-Solar Photovoltaic Systems and Article 705-Interconnected Electrical Power Production Sources, of the 2011 Edition of the *National Electrical Code*.

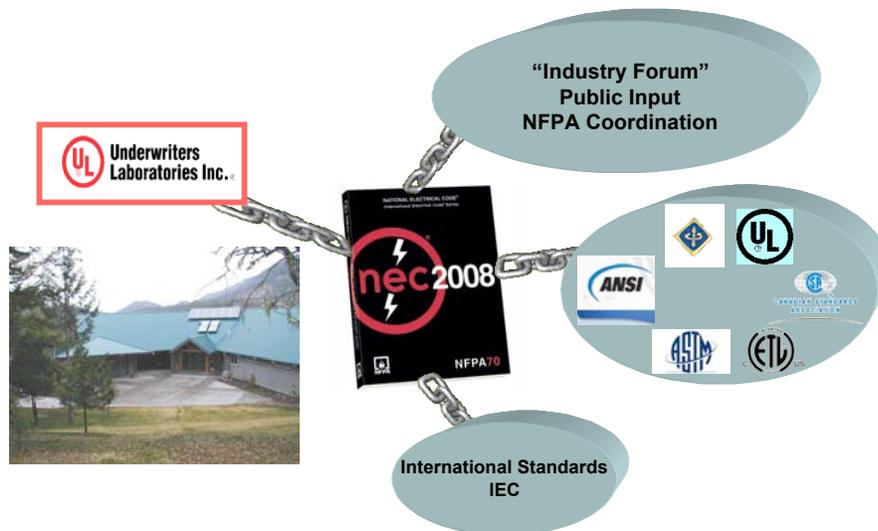


Statistics on Articles 690 & 705 Proposals for the 2011 NEC

- 79 Proposals for Article 690
 - 43 from the PV Industry Forum
 - 36 from public
- Article 690 Proposal types
 - 15 Proposals for New Language
 - 53 Proposals for Revision
 - 6 Proposals to Move
- 39 Proposals for Article 690
Were Accepted for the ROP.
 - 53% of Industry Forum
 - 44% of Public Proposals
- 18 Proposals for Article 705
 - 10 from the PV Industry Forum
 - 8 from public
 - All were revisions of deletions

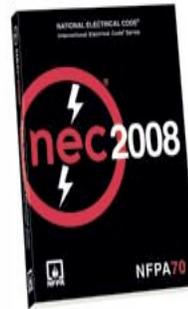


NEC® PV Links



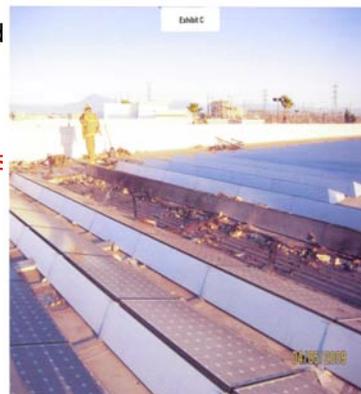
Accepted Article 690 Proposals

- 690.2 - Definition for PV Subarray to clarify other parts of Article 690
- 690.4(B) - Identification/grouping of conductors of different systems
- 690.4(E) - Marking of conductor routing for fire and safety
- 690.4(F) – Requirements for bi-polar system wiring
- 690.7(E) – Solid grounding of bi-polar PV arrays
- 690.8(B) – Good clarification on ampacity ratings for conductors and overcurrent devices



Accepted Article 690 Proposals

- 690.9(A) – Removed need for overcurrent device with no backfeed
- 690.9(B) – Removed need for overcurrent devices between an inverter and transformer
- 690.11 – Language for requirements for arc-fault detectors in PV array circuits
- 690.13 – Major clarifications for disconnects for current carrying conductors
- 690.16(A-B) – The need for disconnects to service fuses

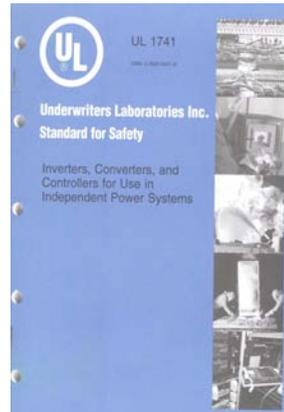


*Red indicates a comment has been submitted



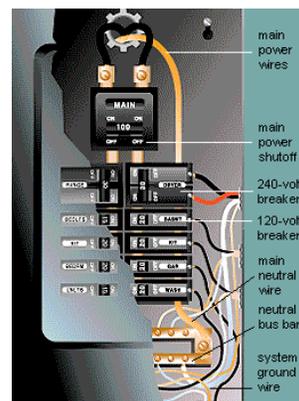
Accepted Article 690 Proposals

- 690.19 – Disconnect of ungrounded conductors
- 690.31(B) – PV wire and conduit fill
- 690.31(E) – DC source circuits in metal enclosures in buildings
- 690.43 – Requirements for PV module mounting structures
- 690.47(B) – Single grounding electrode with multiple inverters and alternate clamps for circuit breakers
- 690.47(C) – Reference to UL1741
- 690.62 – Ampacity of neutral conductor for 3 ϕ Y systems
- 690.72(C) Requirements for Buck-Boost converters



Accepted Article 705 Proposals

- 705.12(A) – Supply side connections (sum of overcurrent devices, tap rules not required)
- 705.12(D) – Exception to allow 125% for calculation of bus current
- 705.22(4) – Removed FPN suggesting visibly verifiable disconnect
- 705.65 – Edits to fix wholesale transfer of 690 language to 705. Deleted PV specific language and replaced PV source circuit with inverter output circuit.



2011 NEC Activities now appear on the Solar ABC s Website

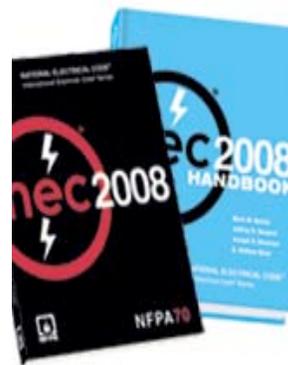
- You can download the Report of Proposals (ROP) showing all proposals and the panel actions for articles 690 and 705.
- You can also download Articles 690 and 705 in the 2011 Draft Code based on the ROP panel actions.
- The full ROP and the full draft of the 2011 NEC can be downloaded from the NFPA web site.

<http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=70>



The 2008 to 2011 NEC Transition Schedule

- A public comment period just closed 10/23/2009
- The CMP4 meeting will review and ballot the public comment 12/9-12/2009.
- Formal Paper Ballots due 1/12/2010
- Correlating Committee reviews proposed changes 2/22-26/10
- Standards Council Issuance scheduled in August 2010
- 2011 NEC will be published in Sep 2010



Future for the NEC for PV and DG

- Automatic Load Transfers
- Energy Storage and Management
- VAr Corrections
- Nested Communications
- Interface with Buildings
- Microgrids

