

UNDERWRITERS LABORATORIES INC. CERTIFICATION REQUIREMENT DECISION

This Certification Requirement Decision is prepared by UL LLC. It is normative for the applicable UL Product Certification Program(s); however, it is currently not part of the UL Standard(s) referenced below.

Product Category (CCN): WEVZ

Standard Number: UL 891

Standard Title: Standard for Switchboards

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Section / Paragraph Reference: Sections 6.3.4.4 and 8.6.5A; Clauses 8.1.15.1, 8.6.5, and 8.6.5.2

Subject: Add Requirements for "Switchboards Marked for use with Interconnected Electric Power Production Sources" (NEC Article 705 Applications)

DECISION:

6.3.4.4 Switchboards marked for use with interconnected electric power production sources

6.3.4.4.1 A switchboard provided with connections marked for use with one or more electric power production sources operating in parallel with a primary source of electricity shall be marked "Suitable for use with interconnected parallel electric power production sources", "Suitable for use in accordance with Article 705 of the National Electrical Code, NFPA 70", or the equivalent.

6.3.4.4.2 Each disconnect or provision for connection for interconnected parallel power production sources shall be marked "Parallel Energy Source Disconnect". [Prime]Parallel Energy Source Tap[Prime], or the equivalent, or be provided with a space for the sources to be labeled in the field.

6.3.4.4.3 Switchboards with parallel energy source disconnects shall be marked [Prime]Turning Off Parallel Energy Source Disconnect does not deenergize this switchboard. Turn off power from all sources supplying this switchboard before working inside." or equivalent wording.

6.3.4.4.4 A marking shall be placed near each Parallel Energy Source Disconnect to be visible when the terminals are visible to warn the user that both the line and load terminals may be energized when the breaker is in the open (Off) position.

6.3.4.4.5 For load side connections in accordance with 8.6.5A.1(b), the switchboard shall be marked with the maximum ampere rating for all disconnects marked for connection to electric power production sources operating in parallel with primary sources.

8.1.15 Equipment on supply side of service disconnect (not for Canada)

8.1.15.1 Except for the following, equipment shall not be connected to the supply side of the service disconnecting means:

- a) meters nominally rated not in excess of 600 V located in the switchboard;
- b) instrument transformers (current and potential), high-impedance shunts, Type 1 surge-protective devices, and load management devices;
- c) control circuits of power operable service disconnecting means, if suitable overcurrent protection and disconnecting means are provided, see 8.1.11.1.1;

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d) Ground-fault protection systems or surge-protective devices, if suitable overcurrent protection and disconnecting means are provided, see 8.1.11.1.1; and

e) taps used to supply load management devices, circuits for stand-by power systems, fire pumps, and fire and sprinkler alarms.

f) interconnected electric power production sources, such as solar photovoltaic, wind, or fuel cell systems.

8.6.5 Double-ended switchboards (multiple source) Multiple source switchboards

8.6.5.1 Unless intended for parallel operation, the disconnect identified in Figure 2 and Figure 3 as the tie-breaker shall be provided with mechanical, key, or electrical interlocking with the service disconnects shown in the figures so that sources cannot be paralleled. If the tie-breaker is omitted, all disconnects shall be provided with mechanical, electrical, or key interlocking so that the sources cannot be paralleled (unless intended for parallel operation).

8.6.5.2 If a switchboard is intended to parallel different sources, synchronizing equipment shall be provided. Synchronizing equipment shall not be required for an interconnected electric power production source as covered by Article 705 of the National Electrical Code, NFPA 70. Switchboards marked for use with interconnected electric power production sources, in accordance clause 6.3.4.4.1, shall be evaluated in accordance with Section 8.6.5A.

8.6.5A Switchboards marked for use with interconnected electric power production sources

8.6.5A.1 Switchboards marked for interconnection with one or more electric power production sources operating in parallel with primary sources of electricity, in accordance with clause 6.3.4.4.1, shall be permitted to have provisions for connections as noted in (a) and (b). See 6.3.4.4 for marking requirements.

a) Supply Side Connection – Switchboards marked for use in accordance with Section 705.12(A) of Article 705 of the National Electrical Code, NFPA 70, shall be permitted to have provisions for interconnecting parallel power sources on the supply side of the service disconnecting means, see 8.1.15(f). The sum of the ratings of all supply side overcurrent devices connected to power production sources shall not exceed the rating of the switchboard.

b) Load Side Connection – Switchboards marked for use in accordance with Section 705.12(B) of Article 705 of the National Electrical Code, NFPA 70, shall be permitted to have one or more load side disconnects for the interconnection of parallel power sources. The total rating of all overcurrent devices supplying the switchboard shall not exceed the rating of the switchboard.

RATIONALE FOR DECISION:

NEC® Article 705 includes requirements for the interconnection of non-utility electric power production sources. These requirements detail how these sources are to be integrated with a power distribution system. These sources include on-board utility interactive inverters and do not need the type of synchronization equipment required in a “double-ended” switchboard configuration. This CRD applies the terminology in clause 3.27 of UL 891 when referring to a “multiple source” switchboard by renaming Section 8.6.5 as “Double-ended switchboard (multiple sources)”. Along with this renaming, two new Sections (6.3.4.4 and 8.6.5A) are introduced to address “Switchboards marked for use with interconnected electric power production sources”. These new sections are similar to ones added to the Standard for Panelboards, UL 67, and include provisions for connection of the alternate source to either

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