IEEE 802.3 Ethernet Working Group
Liaison Communication

Source:	IEEE 802.3 Working Group[1]	
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Subject: Support for proposed Tentative Interim Amendments on PoE

Approval: Agreed to at IEEE 802.3 interim meeting, New Orleans, LA, 25 May 2017

Dear Ms. Hunter,

The IEEE 802.3 Ethernet Working Group has been following the activities of the Task Group put together by the NEC® Correlating Committee relating to changes in the NEC® 2017 regarding Power over Ethernet in Articles 725 and 840. Several members of the IEEE 802.3 Working Group are active in the NEC® Power over Ethernet Task Group, and the membership of IEEE 802.3 has had the opportunity to review and discuss the three proposed Tentative Interim Amendments (TIAs) produced at the May 19, 2017 meeting of the NEC® Power over Ethernet Task Group. We request that IEEE-SA take a position in support of these proposed amendments and their emergency nature when they, or substantially similar TIAs, are submitted to the NEC® code making panels.

For the TIA on Article 840, I refer you to our letter to NFPA® approved at the IEEE 802.3 Ethernet Working Group meeting on 26 May 2016, which may be found at (http://www.ieee802.org/3/minutes/may16/outgoing/IEEE_802d3_to_NFPA_0516.pdf). We urge support of this TIA as it resolves our previously stated concern that the present text of Section 840.160, which uses a power limit of 60 watts or less, "does not inherently limit the maximum ampacity of communications cables powering circuits, and therefore is not ~~a~~

[1] This document solely represents the views of the IEEE 802.3 Working Group, and does not necessarily represent a position of the IEEE, the IEEE Standards Association, or IEEE 802.

sufficient criteria to be used as the basis for excluding communications cables powering circuits from complying with Section 725.144 ampacity tables." If this text is not changed in the code, safety problems could result, ~~either,~~ for example, from systems using lower voltages than IEEE 802.3 Power over Ethernet, with correspondingly high currents. This TIA maintains the intent of the original text to exempt the systems based on IEEE Std 802.3 which have been deployed over the past 14 years. We are further encouraged that the TIA proposes the same concept of "nominal current" found in Clause 33 of IEEE Std 802.3-2015, and proposed in Clause 145 of the current draft of IEEE P802.3bt, and makes allowances for the current imbalances present in practical systems. For these reasons, we request IEEE SCC18 support the proposed TIA from the ~~NFPA~~NEC® Power over Ethernet Task Group on Article 840.

We also support the changes and the emergency nature of the TIA on both Sections 725.121(C) and 725.144A. These two changes to Article 725 proposed in the TIA provide relief to an adverse impact without justification, and are inconsistent with the treatment of Power over Ethernet devices in Article 840. The text of Section 840.160 recognized this adverse impact, and attempted to resolve it by creating the "60 watt exception" which is being changed to 0.3 amperes nominal current in the proposed TIA on Section 840.160, mentioned above. The proposed TIA on Article 725 would extend the same intended exception for Section 840.160 to systems that are in accordance with Article 725. This is only natural, because the powered device determines the application and which article applies. The same Ethernet PSE that may be exempt under ~~article~~ Article 840 (say, for example, for a telephone) could be used under Article 725 (say, for example, for lighting), so the two Articles should treat them the same.

We reiterate our concern about the adverse impact of Article 725 on continuing deployment of devices in compliance with the highly successful IEEE 802.3 Power over Ethernet standards. With the exception offered in the proposed TIA, to both the NEC® 2017's new marking language in Section 725.121(C) and to the ampacity tables in Section 725.144, along with the use of the "nominal current" concept described above, the adverse impact of NEC® 2017 can be mitigated. We request IEEE SCC18 support the TIA on Sections 725.121(C) and 725.144(A), and their emergency nature.

We also support the changes and the emergency nature of the TIA on Section 725.144(B). This change is simpler, and relates to an omission of a temperature adjustment to the ampacity of LP cables in the code of Section 725.144(B). The code for Section 725.144(B), as it currently stands, could lead to overheated cables when LP cabling is installed in higher than 30 degrees C ambient temperatures. The proposed TIA remedies this safety hazard. We request IEEE SCC18 support the proposed TIA on Section 725.144(B).

IEEE 802.3 will not be submitting a proposal to SCC18 for an IEEE Public Input (PI) to the NEC® 2020 code cycle. The reason for this is because we have been following the progress of the NEC® PoE TG and are satisfied with their planned PIs.

Sincerely,

David Law

Chair, IEEE 802.3 Ethernet Working Group