

# Review of NERC PRC-005-2

## *Applicability to Communication Facility Battery Systems*

Telecommunications Workgroup (TELWG)

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## Introduction

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In March 2014, Idaho Power presented a question to the Telecommunications Work Group (TELWG) regarding the definition of “station DC supply” as used in version 2 of NERC PRC-005. Specifically, Idaho Power asked a WECC auditor if station DC supply applied to batteries used by DC battery systems at stand-alone communications sites that carry Bulk Power protection system communications traffic. Discussions occurred between TELWG members and WECC auditors Roger Cummins and Joe Veltri in an attempt to clarify the intent and applicability of the standard as it relates to communications batteries.

During the November 2014 TELWG meeting, the group asked the WECC auditors for a clarification on the PRC-005 battery testing for telecommunications batteries in a substation carrying relay “traffic/communications.” The WECC auditors stated that they would be looking at all batteries regardless of the classification. TELWG members expressed a difference in interpretation of PRC-005-2 and came to the conclusion that it does not apply to telecommunication battery systems. A written clarification notice was requested of WECC by NV Energy, but one was never published or issued.

This issue was presented to the Technical Operations Subcommittee (TOS) for further guidance and input. The direction provided by TOS was to “consult with your individual company’s compliance department for a decision on your company’s position.”

## Analysis and Investigation

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Following the consultation with individual company compliance personnel, many TELWG member utilities reported that communication batteries are not in the scope of PRC-005-02. Additionally, several utilities had experienced an audit since this subject was first discussed and reported that no issues were found with their battery monitoring program.

In referencing the “PRC-005-2 Supplementary Reference and Frequently Asked Questions (FAQ) dated October 2012,” pages 85-90, it states that the standard is applicable to station DC supply associated with protective functions. This would include the batteries, the chargers, and non-battery-based DC supply. Station batteries are defined within the reference document as those batteries providing the DC power required for tripping and for supplying normal DC power to the station in the event of loss of the battery charger. It also states “one of the questions asked was if the Standard refers to Station batteries or all batteries (e.g., Communication Site Batteries).” The response to the question states:

This Standard refers to Station Batteries. The drafting team does not believe that the scope of the standard refers to communication sites. The batteries covered under PRC-005-2 are the batteries that supply the trip current to the trip coils of the interrupting devices that are a part of the Protection System. The SDT (standards drafting team) believes that a loss of power to the

communications systems at a remote site would cause the communications systems associated with protective relays to alarm at the substation. At this point, the corrective actions can be initiated.

Also note that Communications Systems Maintenance Activities are outlined in Table 1-2 and Table 2 of the PRC-005-2 Standard. Neither table identifies a maintenance activity relating to communications batteries. One reference in the Supplementary Reference document that may be of concern for some entities is the phrase, “The equipment used for tripping in a communications-assisted trip scheme is a vital piece of the trip circuit.” Most utilities view this as not being applicable because all of the communication systems for protection schemes are continuously monitored and alarmed; therefore, corrective action can be initiated upon an alarm. This again leads to the position that communication batteries are out of the scope of PRC-005-2.

## Conclusion

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The TELWG has concluded that communication batteries are not intended to be included in this standard. This conclusion is based on the results of consultation with various utility compliance personnel, the PRC-005-2 Supplementary Reference documents, and the experience various utilities had during their respective audits.

There is a need to provide clarification because of the apparent difference in the approach to battery maintenance considered under PRC-005-2 and what is stated in the PRC-005-2 Supplementary Reference and FAQ.

Other entities that use the communication system wanted to know if TELWG documentation covers the interval for testing communication batteries since it is not covered by PRC-005-2. Section 5.5 of the Guidelines for the Design of Critical Communications Circuits (Guideline) references communication batteries. Section 5.5.2 of the Guideline specifies regular maintenance and testing, as well as engineering for the battery system installation. In doing so, the Guideline references applicable industry standards but does not address specific maintenance and testing intervals, only that they be regular. Regular intervals for batteries vary based on the manufacturer, size, and location (environmental) of the batteries. Each utility must determine this for each specific situation.