

Additional Comment Clarification

PRC-005-4 | October 27, 2014

One commenter reached out to the Standard Drafting Team (SDT) to obtain additional explanation regarding its submitted comments and the accompanying SDT response. Following the discussion, the SDT prepared additional text to more fully respond. This response is provided below. As always, the SDT thanks stakeholders for your comments.

A comment received expressed concern regarding the Applicability Section for Facilities (4.2.1) and that it is too broad due to the inclusion of the capitalized term “Fault” and how that term is defined in the NERC Glossary. The concern stemmed from broken wires and intermittent connections being included as examples in the NERC Glossary definition for Fault, which was perceived to broaden the term to include potential events that would have little to no reliability impact to the BES, such as turn-to-turn faults in wound electrical apparatus. The commenter further stated that if the glossary term only referenced “short circuit”, then this would not be a problem. However, the technical subject matter experts (SMEs) on the project, including SMEs beyond drafting team members, noted that a turn-to-turn fault in wound electrical apparatus is a short circuit, and therefore would be included even if the term were limited to short circuits. Additionally, sudden pressure relays will not respond to open circuits (broken wires), so the inclusion of this example in the definition does not have an impact on sudden pressure relays. Therefore, the use of Fault does not expand the scope. The comment also recommended limiting the applicability to “Relays that are installed as the primary or back-up relay for the purpose of detecting phase-to-ground or phase-to-phase short circuit on the BES.” The SDT notes that all sudden pressure relays detect these types of short circuits. Consistent with the SPCS report, the SDT has included all sudden pressure relays utilized in a tripping function, as initiating fault clearing for these types of short circuits supports reliable operation of the Bulk-Power System.

An additional comment received expressed concern that the addition of the term “oil flow” to the definition of “Fault Pressure Relay,” includes Buchholz relays in the definition of Sudden Pressure Relaying. The comment suggested this inclusion is inconsistent with the SPCS report; however, the SPCS report notes that “Order No. 758 used the term sudden pressure relays, which the SPCS has interpreted to refer to the general class of relays responding to pressure, including sudden pressure, rapid pressure rise, and Buchholz relays.” The SDT addressed this on pages 12 and 13 of the Supplementary Reference and Frequently Asked Questions Document. “What type of devices are classified as fault pressure relay? There are three main types of fault pressure relays; rapid gas pressure rise, rapid oil pressure rise, and rapid oil flow devices. Rapid gas pressure devices monitor the pressure in the space above the oil (or other liquid), and initiate tripping action for a rapid rise in gas pressure resulting from the rapid expansion of the liquid caused by a fault. The sensor is located in the gas space. Rapid oil pressure devices monitor the pressure in the oil (or other liquid), and initiate tripping action for a rapid pressure rise caused by a fault. The sensor is located in the liquid. Rapid oil flow devices (“Buchholz”) monitor the liquid flow

between a transformer/reactor and its conservator. Normal liquid flow occurs continuously with ambient temperature changes and with internal heating from loading and does not operate the rapid oil flow device. However, when an internal arc happens a sudden expansion of liquid can be monitored as rapid liquid flow from the transformer into the conservator resulting in actuation of the rapid oil flow device.” Therefore, only the rapid flow sensor of the Buchholz, when used for tripping, is within the applicability; the gas accumulation or oil leak detection features of Buchholz devices are not in scope.