

Part 2: Physical Requirements

280) Interlock Systems

280.10) General

280.10.10) Interlock systems are normally utilized to prevent:

- a) The unauthorized paralleling of two or more We Energies supply lines.
- b) Improper operation or sequence of operations of various pieces of substation equipment.
- c) Access to high voltage current carrying parts until such parts have been de-energized. All applicable codes shall be followed.

280.10.20) Interlock systems may be classified into three main divisions based on the type of interconnection between associated devices. The following is a brief description of each classification:

- a) Mechanical interlocks consist of a bar, chain, gear or other mechanical arrangement between associated devices.
- b) Electrical interlocks consist chiefly of switches and/or solenoids arranged at the associated devices and connected by electrical conductors. Application is limited to devices adjacent to a satisfactory electrical power source.
- c) Key interchange interlocks consist of self-contained individual locking units located at associated devices which permit a desired operation only when conditions are correct for that operation.

280.10.30) After the Customer has completed the initial installation of any We Energies required key-interchange interlock system, all keys (except those held captive in locks) are to be given to We Energies Start-Up Engineer for use in placing the substation equipment in operation. We Energies shall maintain possession and control over all such keys.

280.20) We Energies Required Interlocks for Specific Installations

The following list of We Energies required interlocks are for installations most frequently encountered in customer substations. We Energies may however require interlock systems for installations other than those specifically covered herein as they occur. Specific requirements for these special situations will be provided when necessary by We Energies.

Part 2: Physical Requirements

280.20.10) Two line supply with service circuit breakers – Single load fed from either source.

Customer shall provide and install an electrical or key interchange interlock system which will prevent paralleling of supply lines, and permit only one breaker to be closed at any one time by the customer. The system, however, shall permit both breakers to be open at the same time.

280.20.20) Two line supply with interrupter switches – Single load fed from either source.

Customer shall provide and install a key interchange interlock system for manually operated switches or a combination key interchange and electrical interlock system for motor-operated switches which will prevent paralleling of supply lines, by permitting only one interrupter switch to be closed at any one time by the customer. The interlock system shall, however, permit both interrupter switches to be open at the same time. See Part 3, Section II., E., Keyed Permissive Switches, for more information.

280.20.30) Two line supply with service circuit breakers – two loads fed from one source with one normally closed tie breaker or tie switch.

Customer shall provide and install a key interchange interlock system for manually operated devices or an electrical interlock system for electrically operated devices which will prevent paralleling of supply lines by permitting only two of the three devices to be closed at any one time by the customer. The interlock system shall, however, permit all three devices to be open at the same time.

280.20.40) Two line supply with interrupter switches – two loads fed from one source with one normally closed tie switch.

Customer shall provide and install a key interchange interlock system for manually operated switches or a combination electrical and key interchange interlock system for motor operated switches which will prevent paralleling of supply lines by permitting only two of the three interrupter switches to be closed at any one time by the customer. The interlock system shall, however, permit all three interrupter switches to be open at the same time.