(B) Multiple Sources. If reliable power cannot be obtained from a source described in 695.3(A), power shall be supplied by one of the following: [**20:**9.3.2]

(1) Individual Sources. An approved combination of two or more of the sources from 695.3(A).

(2) Individual Source and On-site Standby Generator. An approved combination of one or more of the sources in 695.3(A) and an on-site standby generator complying with 695.3(D). [**20:**9.3.4]

Exception to 695.3(B)(1) and (B)(2): An alternate source of power shall not be required where a back-up engine-driven fire pump, back-up steam turbine-driven fire pump, or back-up electric motor-driven fire pump with an independent power source in accordance with 695.3(A) or (C) is installed.

If none of the power supply sources specified in 695.3(A)(1) through (A)(3) can individually provide reliable power with adequate capacity, 695.3(B) permits an approved combination (two or more) of those sources or a combination of one or more of those sources with an on-site standby generator.

In lieu of installing an on-site standby generator, an engine- or steam turbine–driven fire pump can be provided as backup for an electric fire pump. In that instance, the electric fire pump is permitted to be supplied by only a single power source. This allowance provides some design options for augmenting an electric fire pump that is supplied by an unreliable source.

(C) Multibuilding Campus-Style Complexes. If the sources in 695.3(A) are not practicable and the installation is part of a multibuilding campus-style complex, feeder sources shall be permitted if approved by the authority having jurisdiction and installed in accordance with either 695.3(C)(1) and (C)(3) or (C)(2) and (C)(3).

(1) Feeder Sources. Two or more feeders shall be permitted as more than one power source if such feeders are connected to, or derived from, separate utility services. The connection(s), overcurrent protective device(s), and disconnecting means for such feeders shall meet the requirements of 695.4(B)(1)(b).

Δ **(2) Feeder and Alternate Source.** A feeder shall be permitted as a normal power source if an alternate power source independent from the feeder is provided. The connection(s), overcurrent protective device(s), and disconnecting means for such feeders shall meet the requirements of 695.4(B)(1)(b).

Section 695.3(C) allows fire pumps to be supplied by feeder circuits that are part of a medium- or high-voltage premises wiring system. This distribution arrangement is common in industrial and institutional campus settings. The conductors supplied by the higher voltage level distribution systems are not service conductors, because the service point and the service-disconnecting means generally are located at a campus distribution switchyard or distribution building. Also, all the distribution conductors on the load side of the service equipment, even though they resemble electric utility–type distribution, are considered to be feeders or — in some cases where the circuit supplies a single piece of utilization equipment — branch circuits.

A fire pump supplied by a radial loop type of distribution system (commonly used for medium- and high-voltage distribution) where the two feeders originate from a single substation has to be augmented by an on-site standby generator. In the system shown in Exhibit 695.3, the two feeders originate from different utility substations, a distribution arrangement that allows the two feeders, without an on-site standby generator, to be multiple sources for the electric fire pump as permitted by 695.3(C)(1).

(3) Selective Coordination. Overcurrent protective device(s) shall be selectively coordinated with all supply-side overcurrent protective device(s).

Selective coordination shall be selected by a licensed professional engineer or other qualified persons engaged primarily in the design, installation, or maintenance of electrical systems. The selection shall be documented and made available to those authorized to design, install, maintain, and operate the system.

Exception: Selective coordination shall not be required between two overcurrent devices located in series if no loads are connected in parallel with the downstream device.

The term *coordination, selective (selective coordination)*, as defined in Article 100, indicates that a selectively coordinated system is one in which the operation of the overcurrent protective scheme localizes an overcurrent condition to the circuit conductors or equipment in which an overload or fault (short circuit or ground fault) has occurred. Because a fire suppression system is intended to provide occupants time to exit the building and to protect property, a selectively coordinated overcurrent protection scheme that localizes and minimizes the extent of an interruption of power due to the opening of a protective device is a critical safety element.

Design and verification of electrical system coordination can be achieved only through a coordination study performed by an engineer or other person with experience in designing coordinated electrical systems. A coordination study entails detailed analysis of electrical supply system fault-current characteristics. The design must integrate overcurrent protective devices (OCPDs) that interact by localizing the overcurrent condition and isolating that part of the emergency system. Modifications to the electrical system after the initial design and installation can affect the original implementation of the coordinated system.

(D) On-Site Standby Generator as Alternate Source. An on-site standby generator(s) used as an alternate source of power shall comply with 695.3(D)(1) through (D)(3). [**20:**9.6.2.1]

(1) Capacity. The generator shall have sufficient capacity to allow normal starting and running of the motor(s) driving the fire pump(s) while supplying all other simultaneously operated load(s). [**20:**9.6.1.1]