SUBJECT
Electrical Coordination

PURPOSE

The purpose of this Policy Intent Notice (PIN) is to clarify the OSHPD enforcement of overcurrent protective devices coordination requirements on new and existing electrical systems.

BACKGROUND

Overcurrent protective device (OCPD) coordination is a method for selecting and configuring circuit breakers and fuses in an electrical system to localize outages caused by an overcurrent condition. When done correctly, only the overcurrent protective device directly upstream of the overcurrent conditions will open clearing the overcurrent condition. All other OCPD’s upstream of this OCPD will remain closed allowing the remaining electrical system to continue to be energized and operational.

In Figure 1, circuit breakers are selected and configured so they will coordinate with each other. So, a short circuit in the conductors feeding utilization equipment #5 will only open the circuit breaker F. Circuit breakers A upstream of the circuit breaker F will remain closed so the outage is localized to the utilization equipment #5. All other equipment remains energized.
In Figure 2, the circuit breakers are not coordinated. A short circuit in the conductors feeding utilization equipment #5 will open circuit breakers A and F causing an outage of all of the utilization equipment downstream of circuit breaker A.

Figure 2 Example of Non-Coordinated Electrical System

The following are code references that require coordination of OCPD’s:
- Essential Electrical Systems per 517.31(G)
- Emergency Systems per 700.32
- Legally Required Standby Systems per 701.27
- Elevators per 620.62
- Fire Pumps used in Multibuilding Campus-Style Complexes per 695.3(G)(3)

Design and verification of electrical system coordination is typically documented in a coordination study. The coordination study consists of single line diagrams, time-current curves of OCPD’s, recommended adjustable circuit breaker settings, and available fault currents. The time-current curves graphically represent the overcurrent operational function of each OCPD’s with respect to time. The coordination study uses these time-current curves to perform an organized time-current study of all OCPD’s from the utilization equipment to the power source to determine correct sizing and setting of OCPD’s so the electric system will coordinate. See Figures 3 and 4. In order to correctly model the system, the actual OCPD’s, transformers, and cabling sizes, lengths and configurations must be used. Since the electrical equipment specifications usually list multiple equipment vendors allowing the final electrical equipment to be selected by the contractor, the final coordination study is usually completed during the construction phase. However, there needs to be sufficient details provided during plan review in order to ensure that the design will meet the coordination requirements once the system is procured and installed.
Figure 3 Example of Time-Current Curves for 0.1 Second Coordination

Figure 4 Example of Time-Current Curves for Selective Coordination
POLICY

All new and repurposed existing OCPD’s must coordinate with the new and existing electrical system as required by the California Electrical Code (CEC). This aligns with the electrical remodel flow chart in CAN 2-102.6 Remodel (Renovations, Alterations, Repairs) which requires all new elements of construction to comply with current code. It is the responsibility of the Electrical Engineer of Record (EEOR) to select OCPD’s that meet the coordination requirements found in the CEC Articles 517, 620, 695, 700, and 701. The electrical plans must demonstrate that the electrical system will meet coordination requirements during plan review. A final coordination study demonstrating code compliance is required to be produced during plan review phase or during the construction phase as a deferred submittal. If the final coordination study is not submitted during plan review, a preliminary coordination study or a signed letter from the EEOR is required during plan review. The signed letter from the EEOR shall be included on the plans and state that the electrical system has been evaluated for coordination and the electrical system design will meet the coordination requirements of the CEC.

When there are changes to the electrical design during construction that affects overcurrent protection devices coordination, an Amended Construction Document (ACD) shall be issued with the revised electrical plans and specifications, and an updated final coordination study.

PROCEDURE

ESSENTIAL ELECTRICAL SYSTEMS

OSHPD plan reviewers will evaluate OCPD coordination for the essential electrical system to ensure a code compliant design/installation:

1. The contract documents need to clearly identify OCPD’s that require coordination.
2. The following are acceptable means of demonstrating coordination during plan review:
   a. Provide a final coordination study demonstrating the new work meets the coordination requirements of the CEC, Article 517.
   b. Provide a preliminary coordination study demonstrating that new OCPD’s shown in plans and specifications will meet the coordination requirement required by the CEC, Article 517.
   c. Provide a letter or note on the drawings signed by the EEOR stating that the essential electrical system has been evaluated for coordination and the essential electrical system will meet the coordination requirements of the CEC, Article 517.
3. When the final coordination study will be submitted during the construction phase, the coordination study shall be listed as a Deferred Approval Items (DSI) on the project cover sheet.
4. OCPD’s of hospital and other health facilities Type 1 and Type 2 essential electrical systems must coordinate for the period of time that a fault’s duration extends beyond 0.1 seconds. The scope of this requirement encompasses the normal source OCPD’s supplying power to the transfer switches, the alternate power source OCPD’s, and all OCPD’s downstream of these devices. See Figure 5 for additional details.
5. Second level ground-fault protection of equipment required by 517.17 must be selectively coordinated with the service ground-fault protection specified in 230.95 or feeder ground-fault protection in 215.10. Furthermore, the second level ground-fault protection must coordinate with downstream OCPD’s on the essential electrical system for the period of time that a fault’s duration extends beyond 0.1.

6. Normal and essential electrical systems OCPD’s supplying an optional load transfer switch allowed in 517.31(B)(1) shall coordinate with upstream OCPD’s. See Figure 6. The purpose of this requirement is to localize any optional load overcurrent outages to the optional branch so that the remaining essential electrical system remains energized. The remaining OCPD’s downstream of the optional load transfer switch (i.e., OCPD’s 5 and 6 in Figure 6) are not required to coordinate since they are supplying optional standby loads and not subject to coordination requirements of the CEC.
7. Coordination is not required between two OCPD’s located in series. See 517.31(G) Exception No. 2. An example is a circuit breaker in series with a fused safety switch feeding an electrical motor. Another example is a panelboard’s feeder breaker in series with the panelboard’s main circuit breaker. The electrical outage would be the same if either one or both of the overcurrent devices opened during an overcurrent condition downstream of these devices. However, both of these OCPD’s must coordinate with overcurrent devices located upstream and downstream of these devices.

8. Coordination is not required between transformer primary and secondary OCPD’s as described in 517.31(G) Exception 1. However, both of these OCPD’s must coordinate with OCPD’s located upstream and downstream of these devices.

9. OSHPD assumes that an existing essential electrical system met the applicable coordination requirements at the time of installation. OSHPD will only evaluate coordination of the existing system at the point of connection to new work. However, this does not relieve the electrical engineer of record of the responsibility in verifying the coordination upstream of OCPD’s associated with the new work.

10. All new work where OCPD’s are being added to an existing essential electrical system will require these OCPD’s to coordinate with each other and with the existing OCPD’s at the point of connection. See Figure 7. New work requiring coordination includes the installation of circuit breakers, fused disconnected switches, electrical panelboards, switchgear, switchboards, substations, motor control centers, and other equipment with OCPD’s. It also includes the repurposing of spare circuit breakers and changing out of existing fuses to different sizes.
11. Replacement of electrical panelboards, switchgear, switchboards, substations, and motor control centers on the essential electrical system will require the equipment OCPD’s to coordinate with each other and with the existing OCPD’s at the point of connection. See Figure 8.
12. Coordination of the essential electrical system was introduced in the 2007 CEC. The replacement of individual OCPD’s installed under prior editions of the CEC due to malfunction or age are not expected to coordinate and will not trigger a mandatory modernization to meet current coordination requirements as long as these OCPD’s are the same type and electrical rating and reconnected to existing loads.

13. Utilization equipment replaced with the same type of equipment will not require coordination to be evaluated if the equipment is reconnected to the same existing OCPD. Furthermore, it is acceptable to reduce the size of the existing branch circuit OCPD without requiring coordination to be reexamined if the OCPD size reduction is required by the new utilization equipment installation.

14. OCPD of a temporary generator shall coordinate with the OCPD’s one-level downstream. It is acceptable to match the size of OCPD in the existing permanent generator and not be required to evaluate coordination. Otherwise, coordination will need to be verified.

15. When a coordination study is not submitted during plan review, the OSHPD plan reviewer will make a blue pencil comment when the overcurrent devices requiring coordination is less than 3:1 ratio.

16. The essential electrical system coordination study shall be indicated as required red on the OSHPD Testing, Inspection, Observation (TIO) form, Section B, Electrical
Tests for projects with new essential electrical systems or new work on an existing essential electrical system.

17. The EEOR will be required to submit final verified reports in OSHPD Testing, Inspection, Observation (TIO) form, Section F.

EMERGENCY SYSTEMS AND LEGALLY REQUIRED STANDBY SYSTEMS
OSHPD plan reviewers will evaluate OCPD coordination of the emergency systems and legally required standby systems to ensure a code compliant design/installation:

1. These requirements do not apply to the essential electrical system for health facilities.
2. The contract documents need to clearly identify OCPD’s that require selective coordination.
3. The following are acceptable means of demonstrating coordination during plan review:
   a. Provide a final coordination study demonstrating the new work meets the coordination requirements of the CEC.
   b. Provide a preliminary coordination study demonstrating that new OCPD’s shown in plans and specifications will meet the coordination requirement required by the CEC.
   c. Provide a letter or note on the drawings signed by the EEOR stating that the electrical system has been evaluated for coordination and the electrical system will meet the coordination requirements of the CEC, Article 700 and 701.
4. When the final coordination study will be submitted during the construction phase, the coordination study shall be listed as a Deferred Approval Item (DSI) on the project cover sheet.
5. OCPD’s of emergency systems and legally required standby systems must selectively coordinate for the full range of available overcurrents, from overload to the available fault current, and for the full range of OCPD opening times associated with those overcurrents. This requirement includes the normal source OCPD’s supplying power to the transfer switches, the emergency power source OCPD’s, and all OCPD’s downstream of these devices. See Figure 9 for additional details.
6. Service ground-fault protection of equipment required in 230.95 or feeder ground-fault protection of equipment required in 215.10 must coordinate with downstream OCPD’s on the emergency system.

7. Selective coordination is not required between two OCPD’s located in series if no loads are connected in parallel with the downstream device. See Exceptions in 700.32 and 701.27. An example is a circuit breaker in series with a fused safety switch feeding an electric motor. A second example is a panelboard’s upstream feeder breaker in series with the panelboard’s main circuit breaker. A third example would be transformer primary and secondary OCPD’s. An electrical outage would be the same if either one or both of the overcurrent devices opened during an overcurrent condition downstream of these devices. However, both of these OCPD’s must be coordinated with overcurrent devices located upstream and downstream of these devices.

8. OSHPD assumes an existing essential electrical system met the applicable coordination requirements at the time of installation. OSHPD will only evaluate coordination of the existing system at the point of connection to new work. However, this does not relieve the electrical engineer of record of the responsibility of verifying coordination upstream of OCPD’s associated with the new work.

9. All new work where OCPD’s are being added to an existing electrical essential system will require these OCPD’s to coordinate with each other and with the existing overcurrent devices at the point of connection. New work requiring coordination includes the installation of electrical circuit breakers, fused disconnect switches, electrical panelboards, switchgears, switchboards, substations, motor control centers, and other equipment with OCPD’s. It also includes the repurposing of spare circuit breakers and changing out of existing fuses to different sizes.
10. Replacement of electrical panelboards, switchgear, switchboards, substations, and motor control centers on the emergency or standby system will require the equipment OCPD’s to coordinated with each other and with the existing OCPD’s at the point of connection.

11. Coordination of the essential electrical system was introduced in the 2007 CEC. The replacement of these OCPD’s installed under prior editions of the CEC due to malfunction or age are not expected to coordinate and will not trigger a mandatory modernization to meet current coordination requirements as long as these OCPD’s are the same type and electrical rating and reconnected to existing loads.

12. Utilization equipment replacement with the same type of equipment will not require coordination to be evaluated if equipment is reconnected to the same existing OCPD. Furthermore, it is acceptable to reduce the size of the existing OCPD without requiring coordination to be reexamined if the OCPD size reduction is required by the new utilization equipment installation.

13. OCPD of a temporary generator shall coordinate with the OCPD’s one-level downstream. It is acceptable to match the size of OCPD in the existing permanent generator and not be required to evaluate coordination. Otherwise, coordination will need to be verified.

14. Emergency system and/or legally required standby system coordination studies shall be indicated as required on the OSHPD Testing, Inspection, Observation (TIO) form, Section B, Electrical Tests for projects with new emergency system, new legally required standby system or new work on existing emergency system and/or legally required standby systems.

15. The EEOR will be required to submit final verified reports in OSHPD Testing, Inspection, Observation (TIO) form, Section F.

ELEVATORS
OSHPD plan reviewers will evaluate OCPD coordination of the elevators to ensure a code compliant design/installation:

1. The contract documents need to clearly identify OCPD’s that require selective coordination.

2. The following are acceptable means of demonstrating that coordination during plan review:
   a. Provide a final coordination study demonstrating the new machine disconnecting means meets the coordination requirements of the CEC 620.62.
   b. Provide a preliminary coordination study demonstrating that new machine disconnecting means shown in plans and specifications will meet the coordination requirement of the CEC 620.62.
   c. Provide a letter or note on the drawings signed by the EEOR stating that the electrical system has been evaluated for coordination and the electrical system will meet the coordination requirements of the CEC 620.62.

3. When the final coordination study will be submitted during the construction phase, the coordination study shall be listed as a Deferred Approval Items (DSI) on the project cover sheet.

4. OCPD’s of elevators must selectively coordinate when more than one machine disconnecting means is supplied by a single feeder. OCPD’s in each disconnecting
means shall selectively coordinate with upstream feeder OCPD’s for the full range of available overcurrents, from overload to the available fault current, and for the full range of OCPD. This selective coordination is required to prevent a fault condition at one machine from interrupting the power to other machine(s) supplied by the same feeder.

5. Installing or replacing machine disconnecting means supplied by a single feeder system will require the disconnecting means to selectively coordinate will all common upstream feeder OCPD’s. See Figure 10.

![Figure 10 Elevator Selective Coordination](image)

6. The elevator coordination study shall be indicated as required on the OSHPD Testing, Inspection, Observation (TIO) form, Section B, Electrical Tests for projects with elevators, dumbwaiters, escalators, moving walks, platform lifts, and stairway chairlifts electrical systems meeting the requirement of 620.60.

7. The EEOR will be required to submit final verified compliance reports in OSHPD Testing, Inspection, Observation (TIO) form, Section F.

FIRE PUMPS IN MULTIBUILDING CAMPUS-STYLE COMPLEXES
OSHPD plan reviewers will evaluate OCPD coordination of the fire pumps used in multibuilding campus-style complexes to ensure a code compliant design/installation:

1. All fire pumps powered by the essential electrical system must meet the essential electrical systems coordination requirements described above. In addition to essential electrical systems requirements, fire pumps installed in multibuilding campus-style complexes as described in the CEC 695(C) must meet the selective coordination requirements describe in this section.

2. The contract documents need to clearly identify OCPD’s that require selective coordination.

3. The following are acceptable means of demonstrating coordination during plan review:
a. Provide a final coordination study demonstrating the fire pump electrical system meets the coordination requirements of the CEC 695.3(C)(3).
b. Provide a preliminary coordination study demonstrating that fire pump electrical system OCPD’s shown in plans and specifications will meet the coordination requirement of the CEC 695.3(C)(3).
c. Provide a letter or note on the drawings signed by the EEOR stating that the electrical system has been evaluated for coordination and the electrical system will meet the coordination requirements of the CEC 695.3(C)(3). The plans need to clearly identify OCPD’s that require selective coordination.

4. When the final coordination study will be submitted during construction phase, coordination study shall be listed as a Deferred Approval Items (DSI) on the project cover sheet.

5. OCPD’s in each disconnecting means of fire pump systems used in multibuilding campus-style complexes must selectively coordinate with any other supply-side OCPD’s per the CEC 695.3(C)(3). Selective coordination shall be for the full range of available overcurrents, from overload to the available fault current, and for the full range of OCPD opening times associated with those overcurrents. The scope this requirement encompasses all OCPD’s that supply power to the fire pump.

6. Fire pump coordination study shall be indicated as required on the OSHPD Testing, Inspection, Observation (TIO) form, Section B, Electrical Tests for projects with new work for fire pumps used in multibuilding campus-style complexes electrical systems required to meet the CEC 695.3(C)(3).

7. The EEOR will be required to submit final verified reports in OSHPD Testing, Inspection, Observation (TIO) form, Section F.

**CONSTRUCTION**

During construction, OSHPD expects the following to occur:

1. When the final coordination study is not submitted during plan review, the EEOR should submit the final coordination study as a Deferred Approval Item (DSI) to the Office prior to the procurement of the electrical equipment.

2. Any material changes required to be made as a result of the final coordination study shall be documented and submitted to OSHPD with the final coordination study as an Amended Construction Document (ACD) for review by the Office.

3. Any material changes such as adding additional OCPD’s or changing the values of OCPD’s will require the final coordination study to be revised and submitted to the Office with the revised electrical plans as an Amended Construction Document (ACD) for review.

4. Field verification by contractor and IOR that all OCPD’s match the equipment listed in the coordination study and adjustable circuit breakers are set to the settings listed in the coordination study.

5. The EEOR will be required to submit final verified compliance report in OSHPD Testing, Inspection, Observation (TIO) form, Section F verifying that the work is in compliance with the approved construction documents.

**REVIEW of COORDINATION STUDY**

1. Essential Electrical System: OSHPD will expect to see no overlap of OCPD’s time-current curves for the period of time that a fault’s duration extends beyond 0.1 second.
in order to demonstrate overcurrent devices coordinate for an essential electrical system. The exceptions would be transformer primary and secondary OCPD’s and OCPD’s that are in series. [See CEC 517.31(G) Exceptions Numbers 1 and 2.] For parallel generators OCPD’s, it is acceptable to use scaling factors based on the ratio of the impedances of the sources to adjust generator circuit breaker time-current curves. Furthermore, manufacturer coordination tables can be used in lieu of time current curves in the coordination study. The coordination study shall indicate manufacturers, model numbers, current ratings, and devices settings for all OCPD included in the study. It should include a summary page uniquely identifying the OCPD’s covered by the coordination study and a statement declaring all OCPD’s serving the essential electrical system are coordinated for the period of time that a faults duration extends beyond 0.1 seconds.

2. Emergency Systems and Legally Required Standby Systems: OSHPD will expect to see no overlap of OCPD’s time-current curves for full range of available overcurrents in order to demonstrate overcurrent devices selectively coordinate for emergency systems and legally required standby systems. The exceptions would be OCPD’s that are in series. The coordination study shall indicate manufacturers, model numbers, current ratings, and devices settings for all OCPD included in the study. A short circuit study for the system shall be provided with the coordination study showing the calculated fault currents used to demonstrate the system meets selective coordination requirements. The coordination study shall have a summary page to uniquely identify the OCPD’s covered by the coordination study and a statement declaring all OCPD’s serving the emergency systems and/or legally required standby systems are selectively coordinated for full range of available overcurrents.

3. Elevator Distribution Systems: OSHPD will expect to see no overlap of OCPD’s time-current curves for full range of available overcurrents in order to demonstrate overcurrent devices selectively coordinate for Elevators. The coordination study shall indicate manufacturers, model numbers, current ratings, and devices settings for all OCPD included in the study. A short circuit study for the system shall be provided with the coordination study showing the calculated fault currents used to demonstrate the system meets selective coordination requirements. Coordination study shall have a summary page to uniquely identify the OCPD’s covered by the coordination study and a statement declaring that all OCPD’s serving the Elevators are selectively coordinated for the full range of available overcurrents.

4. Multibuilding Campus-Style Complex Fire Pump Distribution Systems: OSHPD will expect to see no overlap of OCPD’s time-current curves for full range of available overcurrents in order to demonstrate overcurrent devices selective coordinate for fire pump electrical systems used in multibuilding campus-style complexes. The coordination study shall indicate manufacturers, model numbers, current ratings, and devices settings for all OCPD included in the study. A short circuit study for the system shall be provided with the coordination study showing the calculated fault currents used to demonstrate the system meets selective coordination requirements. Coordination study shall have a summary page with a statement declaring all OCPD’s serving the fire pump are selectively coordinated for full range of available overcurrents.
EXAMPLES

All new OCPD’s must be coordinated where required by the CEC. For new electrical work on existing electrical systems, this PIN aligns with CAN 2-102.6. The new elements of the electrical systems and point of connections to the existing electrical system must meet coordination requirements of the CEC. To aid in understanding OSHPD coordination policy, examples have been provided. The term “panel” as used herein is defined as any panelboard, switchboard, motor control center, distribution panelboard, etc.

Example A: Installation of New Circuit Breaker to an Existing Critical Branch Panel for New Electrical Utilization Equipment

New 40 amp circuit breaker is being added to an existing critical branch PANEL CL3. PANEL CL3 is feed from a 100 amp feeder breaker. PANEL CL3 has a mix of existing branch circuit breakers ranging in value from 20 amp to 50 amp. A coordination study is required demonstrating the new 40 amp circuit breaker will coordinate with existing upstream 100 amp feeder breaker since this is the point of connection to the existing essential electrical system. OSHPD will not require coordination study to evaluate circuit breakers above the 100 amp circuit breaker feeding PANEL CL3, and it will not require coordination to be evaluated between the 100 amp circuit breaker and the existing circuit breakers in PANEL CL3.

Example B: Installation of New Subpanel Fed from Existing Equipment Branch Panel

In this example, an existing equipment branch PANEL EH4 is fed by 400 amp feeder circuit breaker. A new 200 amp breaker is added to PANEL EH4 to feed new subpanel PANEL EH5. PANEL EH5 has a 200 amp main circuit breaker, four 20 amp circuit breakers, two 30 amp circuit breakers, one 60 amp circuit breaker and one 100 amp circuit breaker. The coordination study would need to show coordination between:

- 400 amp feeder breaker for PANEL EH4 and the new 200 amp circuit breaker in PANEL EH4
- 400 amp feeder breaker for PANEL EH4 and the new 200 amp main circuit breaker in PANEL EH5
- New 200 amp circuit breaker in PANEL EH4 and new circuit breakers in PANEL EH5
- New 200 amp main circuit breaker in PANEL EH5 and new amp circuit breakers in PANEL EH5

The new 200 amp circuit breaker in PANEL EH4 and the new 200 amp main circuit breaker in PANEL EH5 are in series, and not required to coordinate with each other per 517.31(G) Exception No. 2. OSHPD will not require coordination study to evaluate circuit breakers above the 400 amp circuit breaker feeding PANEL EH4, and it will not require coordination to be evaluated between the 400 amp circuit breaker and the existing circuit breakers in PANEL EH4.

Example C: Spare Circuit Breaker Used to Connect New Electrical Equipment

In this example, a spare circuit breaker is being used to supply power to a new subpanel or new utilization equipment. The spare breaker is treated the same as the new circuit breaker.
breaker in Example A and B. This spare circuit breaker will need to coordinate with OCPD’s upstream and downstream from the spare circuit breaker.

**Example D: Replacement-in-Kind of Electrical Utilization Equipment**
Utilization equipment is equipment that utilizes electrical energy for electronic, electrical mechanical, chemical, heating, lighting, or similar purposes. Examples of utilization equipment are appliances, luminaires, HVAC equipment, machinery, and medical equipment, to name a few.

- If the replaced utilization equipment is connected to the same existing electrical circuit and the OCPD remains unchanged, then coordination of OCPD supplying power to this utilization equipment does not need to be evaluated because it is the existing condition.
- If the replaced utilization equipment is connected to the same existing electrical circuit but the OCPD rating is reduced in size to match manufacturers installation instructions, then coordination of OCPD supplying power to this utilization equipment does not need to be evaluated because coordination would be equal or increased by this change.
- If the replaced utilization equipment is connected to the same existing electrical circuit but the OCPD is increased, then coordination of OCPD supplying power to the utilization equipment will be required as described in Example A.

**Example E: Relocation of Electrical Equipment or Utilization Equipment**
Coordination will not be required to be evaluated when existing equipment is relocated and reconnect to the same existing OCPD.

Coordination will be required when the relocated equipment is connected to a different OCPD. See Example A and Example C.

**Example F: Upgrade Medical Equipment**
When medical equipment is upgraded and requires new OCPD to be installed, new OCPD shall coordinate as required in Example A.

**Example G: Installation of New Circuit Breaker to an Existing Emergency System Panel**
A new or spare circuit breaker is being used to supply power to a new subpanel or new utilization equipment in an existing emergency system. This situation is very similar to Examples A and B. The only difference is that selective coordination is required. i.e., OCPD’s must selectively coordinate for the full range of available overcurrents, from overload to the available fault current, and for the full range of OCPD opening times associated with those overcurrents. The EEOR has three options during plan review:

1) Provide final coordination study during plan review.
2) Provide preliminary coordination study during plan review and indicated final coordination study will be submitted as a deferred approval.
3) Provide a letter or note on the drawings signed by the EEOR stating that the electrical system has been evaluated for coordination and the electrical system will meet the coordination requirements of the CEC. The plans need to clearly identify OCPD’s that require selective coordination.
Example H: Replacement of Elevator Disconnecting Means
When elevator disconnecting means is being replaced and more than one machine disconnecting means is supplied by a single feeder as described in the CEC 620.62, then new elevator disconnecting means must be selectively coordinated with the other supply side OCPD’s. The EEOR has three options during plan review:
1) Provide final coordination study during plan review.
2) Provide preliminary coordination study during plan review and indicated final coordination study will be submitted as a deferred approval.
3) Provide a letter or note on the drawings signed by the EEOR stating that the electrical system has been evaluated for coordination and the electrical system will meet the coordination requirements of the CEC 620.62. The plans need to clearly identify OCPD’s that require selective coordination.

Example I: Replacement of Overcurrent Protective Devices for Fire Pump Powered by Feeder Source in Multibuilding Campus-Style Complex
When OCPD’s are being replaced for a fire pump powered by feeder source in multibuilding campus-style complex, OCPD’s must be selectively coordinated with any other supply-side OCPD’s per the CEC 695.3(C)(3). It should be noted that this requirement does not apply to all fire pump installations. The EEOR has three options during plan review:
1) Provide final coordination study during plan review.
2) Provide preliminary coordination study during plan review and indicated final coordination study will be submitted as a deferred approval.
3) Provide a letter or note on the drawings signed by the EEOR stating that the electrical system has been evaluated for coordination and the electrical system will meet the coordination requirements per the CEC 695.3(C)(3). The plans need to clearly identify OCPD’s that require selective coordination.

Example J: Adding Overcurrent Protective Devices for any Fire Pump Fed by the Essential Electrical System
When OCPD is being added for any fire pump powered by the Essential Electrical System, OCPD is treated like another essential electrical system load and only required to coordinate for the period of time that a fault’s duration extends beyond 0.1 second per 517.31(G). The EEOR has three options:
1) Provide final coordination study during plan review.
2) Provide preliminary coordination study during plan review and indicated final coordination study will be submitted as a deferred approval.
3) Provide a letter or note on the drawings signed by the EEOR stating that the electrical system has been evaluated for coordination and the electrical system will meet the coordination requirements of the CEC.

Original signed 8/12/2021
Chris Tokas (Acting Deputy Director) Date