



Smoke Control and Emergency Wiring Preconstruction Agenda

Project Name/Location: _____

Meeting Date: _____

Permit Number: _____

Project Team	Name/Company	Phone	Email
Building Official*			
Fire Marshal*			
Building Inspector			
Electrical Inspector			
Electrical Reviewer			
Fire Inspector			
Fire Reviewer			
Mechanical Inspector			
Mechanical Reviewer			
Smoke Control Design Engineer			
Smoke Control Special Inspector			
Mechanical Engineer			
General Contractor			
Owner's Representative			
Electrical Contractor			
Fire Alarm Contractor			

*Attendance is optional.

This meeting is intended for projects with smoke control. The purpose of this meeting is to ensure that all parties have a clear understanding of:

- Roles and responsibilities
- Submittal requirements
- Protection and/or separation requirements for smoke-control components

Submittals

The following city-approved submittals must be available on-site for this meeting. For projects where the owner/contractor has obtained slab-only or pre-wire permits in advance of electrical, fire alarm and smoke control permits, the following submittals must currently be under review by the city and copies available on-site for this meeting.

Submittal requirements for associated systems:

Smoke Control Submittal	
Fire Alarm Submittal	
Mechanical Submittal	
Generator Submittal	
Electrical Submittal	
System Information/Other	

Emergency Wiring Protection

(See Figures 1 and 2)

Generator

Separate permits are required for generator installations.

Statistics

- Number of generators: _____
- Location(s):
(If multiple generators are installed, identify the location by room and floor, which generators are for emergency systems and which are for legally required systems.)

- Method and Rating of Protection:

Ventilation and Exhaust

Identify how ventilation and exhaust is being installed and where terminations occur at the exterior of the building.

Automatic Transfer Equipment

(See Figures 1 and 2)

Statistics

- Number: _____
- Locations: (If multiple generators are installed, identify the location by room and floor, which generators are for emergency systems and which are for legally required systems.)

- Method and Rating of Protection:

Note 1: In high-rise buildings and underground buildings, per IBC 403, 405 and 2702 respectively, the emergency transfer switches, where required by the IBC or this code, shall be in a separate room from the normal power source, including transformers and distribution equipment, and shall be enclosed in a room constructed of not less than two-hour fire-resistive-rated fire barriers ventilated directly to and from the exterior.

Note 2: The emergency transfer switches, where required by the IBC or this code in other buildings or uses, shall be in a separate room from the normal power source, including transformers and distribution equipment, and shall be enclosed in a room constructed of not less than one-hour fire-resistive-rated fire barriers ventilated directly to and from the exterior. Power distribution from the two sources to the emergency transfer switches shall be by independent routes.

Exception: System components described in Article 701 (legally required) may occupy the same dedicated spaces as emergency systems.

(National Electrical Code Article 700.5 as amended by City of Bellevue)

Transformers

(See Figure 1)

Statistics, Oil Filled

- Number: _____
- Size: _____
- Location (indoor, outdoor, room, floor):

- Containment Method (note location of drain):

- Method and rating of protection:

Note: Oil filled transformer room walls, roofs, and floors must be constructed of materials meeting minimum fire resistance of three hours. Where sprinklers or other approved alternate protection is installed rating can be reduced to 1 hour. Oil filled transformer room reduction to one hour only applies where the vault is no higher than five floors above grade. Stud and wallboard construction are not acceptable construction. {NEC 450.42 as amended by the City of Bellevue, Ordinance 23.30.450.42}

Statistics, Dry (transformers over 112 ½ kVA, 2014 NEC 450.21)

- Number: _____
- Size: _____
- Location: _____
- Method and rating of protection: _____
- Please list any other controls to be in transformer room:

Note: Dry type transformers rated over 112 1/2 kVA shall be in rooms of one-hour fire-resistive construction. (2014 NEC 450.21)

Fire Alarm Wiring

(See Figures 1 and 2)

Statistics

- Method of Protection: _____

Pressurization/Ventilation Wiring and Equipment

(See Figures 1 and 2)

Statistics

- Pressurized Shafts: _____
- Stair Shafts: _____
- Fan Location(s): _____
- Elevator Shafts: _____
- Fan Location(s): _____

Method of Protection and Separation

Protection of power and control wiring, serving stair and/or elevator pressurization, must extend from the emergency source of power to the protected devices or equipment in accordance with International Building Code Section 909.20.6.1 as amended by the City of Bellevue.

Smoke proof enclosure ventilation systems shall be independent of other building ventilation systems (Smoke proof enclosures in this context are elevator shafts as required and pressurized stair shafts per IBC 909.20.6). The equipment, control wiring, power wiring and ductwork shall comply with one of the following:

- Equipment, control wiring, power wiring and ductwork shall be located exterior to the building and directly connected to the smoke proof enclosure or connected to the smoke proof enclosure by ductwork enclosed by not less than two-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.
- Equipment, control wiring, power wiring and ductwork shall be located within the smoke proof enclosure (not inside the wall) with intake or exhaust directly from and to the outside or through ductwork enclosed by not less than two-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.
- Equipment, control wiring, power wiring and ductwork shall be located within the building if separated from the remainder of the building, including other mechanical equipment, by not less than two-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.

Exceptions:

1. Control wiring and power wiring utilizing a two-hour rated cable or cable system. (Cable system supports require the two-hour rated protection.)
2. Where encased with not less than two inches of concrete.
3. Control wiring and power wiring protected by a listed electrical circuit protective system with a fire-resistance rating of not less than two hours.

If a combination of the above is being used, describe below:

Inspections

(See Figure 2)

Identification of Equipment and Conduit

(National Electrical Code Article 700.10 as amended by City of Bellevue)

Prior to calling for electrical and fire department inspections of system rough-ins, the following systems must be identified on site as follows:

Emergency Systems

All boxes and enclosures larger than six-inch (150mm) by six-inch(150mm), including transfer switches, generators and power panels, for emergency circuits shall be permanently marked with an identification plate that is orange in color so they will be readily identified as a component of the emergency circuit or system. All other device and junction boxes for emergency systems and circuits shall be orange in color, both inside and outside.

Smoke Control Systems

All boxes and enclosures larger than six inches (150 mm) by six inches (150 mm), including transfer switches, generators and power panels, for smoke control power and circuits shall be permanently marked with an identification plate that is orange in color with a yellow diagonal stripe so they will be readily identified as a component of the smoke control circuit or system. All other device and junction boxes for smoke control systems and circuits shall be orange in color both inside and outside. Cover plates shall be orange in color with a yellow diagonal stripe. Raceways for stair and elevator pressurization system wiring shall be identified by labels or color coding and shall be visible at the time of inspection.

Stair and Elevator Pressurization Systems

All boxes and enclosures larger than 150 mm (six inches) by 150 mm (six inches), including transfer switches, generators and power panels, for stair and elevator pressurization system power and control circuits shall be permanently marked with an identification plate that is orange in color with a gray diagonal stripe so they will be readily identified as a component of the stair and elevator pressurization system. Raceways for stair and elevator pressurization system wiring shall be identified by labels or color coding which distinguish it from all other systems and shall be visible at the time of inspection. All other device and junction boxes for stair and elevator pressurization system power and control circuits shall be orange in color both inside and outside. Cover plates shall be orange in color with a gray diagonal stripe.

Exception: In existing facilities, the existing nameplate identification color scheme may be retained where approved by the code official.

Note: For inspection purposes, conduit or raceway that contains emergency or smoke control wiring must also be identified in a like manner when passing through floors, rooms, walls or areas separate from the identified boxes or enclosures of origin.

Inspection Coordination

Electrical

The electrical inspector will check items, including but not limited to wiring methods, identification of emergency wiring conduit, boxes, etc.

Fire

Building

The building inspector will check the construction of rated protection, including but not limited to inspection of framing for shaft and enclosure walls, concrete encasement, rated door and access ratings, fire-stopping of penetrations, etc.

Unusual Conditions

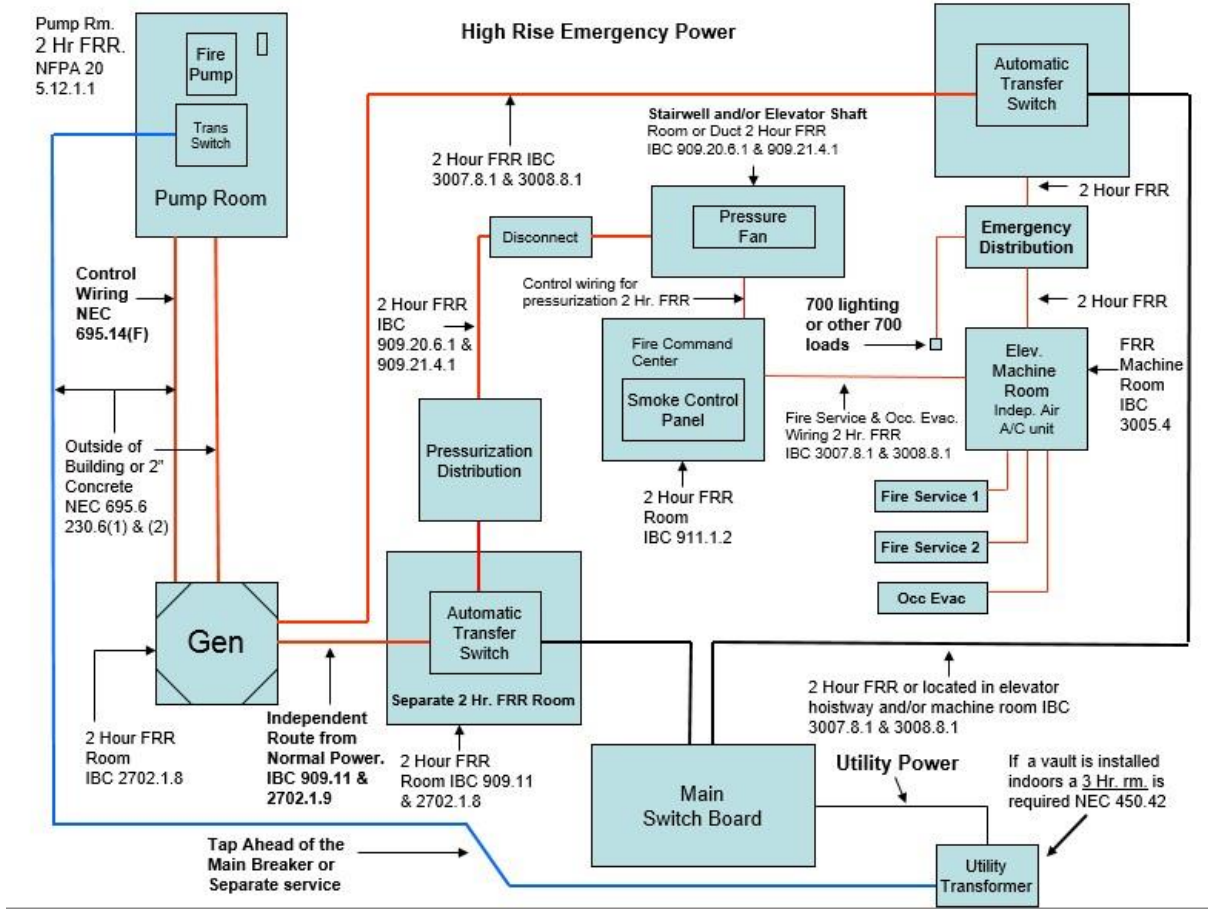
Is an Alternate Methods and Materials (AMM) submittal being considered?

- Yes
 - No
-

What is the scope of the AMM being considered? Submittal of the AMM is required prior to the issuance of a prewire permit.

Other issues specific to this project to be considered:

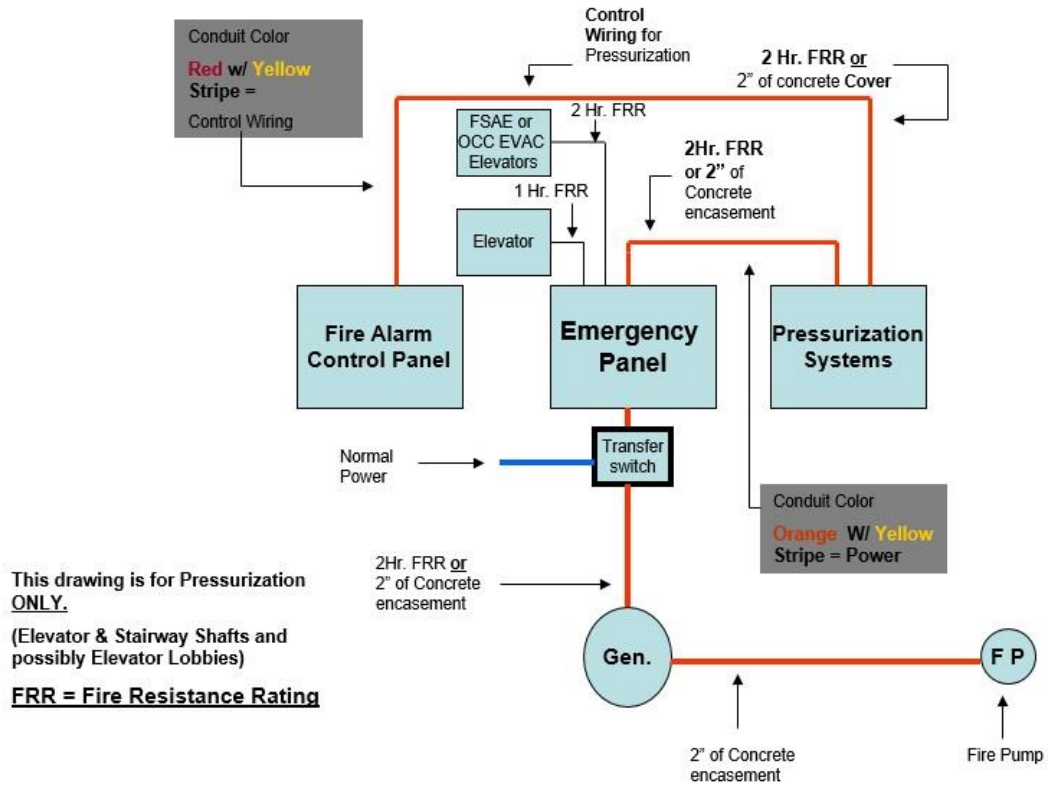
Figure 1: Pressurization System



FRR = Fire Resistance Rated

Figure 2: Emergency Wiring and Protection

Legally Required = 60 seconds start-up
 Pressurization may start up within 60 Seconds
 Emergency = 10 second start-up



References

- 2015 International Building Code.
- 2015 International Fire Code
- 2014 National Electrical Code
- 2014 Washington Cities Electrical Code

Note: References to applicable codes shall mean as adopted and amended by the State of Washington and the City of Bellevue.

Fire Resistance Separation Requirements

Building Code

- 909.11 Emergency power (Smoke control systems)
- 909.20.6.1 Ventilation systems (Smoke proof enclosures)
- 909.21.4.1 Fire resistance (Elevator pressurization alternative)

Equipment Room (Generator and emergency power ATS)

Smoke Control Power Systems (Routing of power)

- 3007.8.1 Protection of wiring or cables (Fire service access elevators)
- 3008.8.1 Protection of wiring or cables (Occupant evacuation elevators)

Fire Code

- 604.1 General (Emergency and standby power systems)
- NFPA 20 5.12.1.1 Fire Pumps

Note: Fuel-fired standby power generator sets and associated fuel storage, including optional landlord or tenant-owned generator sets, located at a floor level higher than 30 feet below the lowest level of exit discharge requires the approval of the Fire Code Official.

Electrical Code

- 450.42 Walls, Roofs and Floors (Transformer Vaults)
- 695 Fire Pumps
- 700 Emergency Systems
- 701 Legally Required Standby Systems