2009 IFC: Standby Power Systems for Ventilation

1504.7.1 Operation. Mechanical ventilation shall be kept in operation at all times while spraying operations are being conducted and for a sufficient time thereafter to allow vapors from drying coated articles and finishing material residue to be exhausted. Spraying equipment shall be interlocked with the ventilation of the flammable vapor areas such that spraying operations cannot be conducted unless the ventilation system is in operation.

Q: Is it the intent of this section to require the installation of a standby power system to maintain the ventilation system for "a sufficient time thereafter to allow vapors from drying coated articles and finishing material residue to be exhausted" in the event of a power failure?

A: No. IFC Section 604 has no requirement for connecting a standby power system to a spraying space, spray booth or spray room. In the event the mechanical ventilation fails as result of loss of utility power, Section 1504.7.1 requires that spraying operations stop because the ventilation system is no longer in operation.

In most flammable vapor areas where flammable or combustible liquids are applied, this provision is normally accomplished by interlocking a solenoid valve in the compressed air piping serving the spray area with the fan motor. If power failure occurs the valve closes, preventing the application of flammable finishes. Also, many electric motors used to drive spray-area fans utilize variable frequency drive motors, which generally will “coast” to a stop, so air movement occurs during the time it takes for the fan to come to a complete stop. Finally, a properly designed mechanical ventilation system will maintain the atmosphere at or below 25 percent of the lower flammable limit (LFL) of the most volatile solvent being applied. As a result, loss of mechanical ventilation will not permit the amount of flammable vapor to exceed the code mandated flammability limit. [15-9]