**Overview of Application of Lightning Protection Regulations to CSATF SoPs:**

You must SHELTER due to electrical storm for 30 minutes if you are working outdoors and

lightning strikes within 6 miles.

You must SHUT DOWN during a lightning storm if:

1) you have no way to get power from a shelter structure

AND one of the following:

your alternative electrical supply is unbonded OR ungrounded OR has improperly rated cords

OR

your alternative electrical supply are portable generators within 20 ft of each other that cannot

be bonded together by a dedicated copper bonding conductor from generator to generator

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OR

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2) you are sheltered in a powered structure AND using its internal electrical supply

AND

an external electrical supply that is INSIDE the structure

AND one of the following:

External supply can not have its grounding conductor bonded to the structure’s grounding

Electrode (according to lightning protection standards set forth in NFPA 780)

OR

CO2 from external supply exhaust cannot be pumped out of the building

(Reference bulletins and document sections CSATF 38, OSHA 3826, OSHA 3863,

OSHA 1926.404, OSHA 5a, NFPA 780)

CSATF Excerpts from NFPA 780:

Surge protective devices should be installed on all feeders

from a portable generator supplying power into a building

or structure.

If a generator housing is more than 3/16" thick, air terminals

would not be required. The frame of the generator could have

two 1/0 minimum copper conductors attached to the frame at

opposite corners and each connected to a 10-foot ground rod

separated by at least 20 feet.

4.6.1.1 termination devices shall include air terminals, metal masts, permanent metal

parts of the structure as described in 4.6.1.4 and overhead ground wires

4.6.1.4 metal parts of a structure that are exposed to direct lightning flashes and have

a metal thickness of 3/16 inch or greater shall only require connection to the lightning

protection system in accordance with section 4.9

4.6.4.4 the overhead ground wire shall be a minimum diameter of 1/2 inch and shall be

self-supporting with minimum sag under all conditions

4.9.10 at least two down conductors shall be provided on any kind of structure

4.13.2.3.1 the ground rods shall extend vertically not less than 10 feet into the earth

4.13.2.4 where multiple connected ground rods are used, the separation between any

two ground rods shall be at least the sum of their driven depths, where practicable

A.8.3.2 the best method to protect extremely sensitive operations from all sources of

electromagnetic radiation is to enclose the equipment, operations, or facility inside a

metallic, Faraday-like cage. A metallic, Faraday-like cage is an enclosure that

comprises a continuous grid of conductors, such that the voltage between any two

points inside the enclosure is zero when the cage is immersed in electrostatic field. A

metallic cage or Faraday shield lightning protection system is one in which the

protected volume is enclosed by a heavy metal screen, similar to a birdcage, or

continuous metallic structure with all metallic penetrations bonded. The lightning

current flows on the exterior of the structure, not through the interior. A Faraday-like

shield, which is not an ideal Faraday cage, is formed by a continuous conductive matrix

that is properly bonded and grounded.

A freestanding structure that is determined by the AHJ to be a metallic cage or

Faraday-like shield might not require either grounding systems or strike termination

devices.