Top 10 – Electrical and Fire Alarm

Sathish Anabathula   Ph: 434-243-2478   Sathish@Virginia.edu

1. **Emergency lighting**: Provide emergency lighting for all exit discharge landing means of egress illumination. *(VUSBC - 1006.3(5))*

2. **Sprinkler bell**: Approved audible devices shall be connected to every automatic sprinkler system. They shall be provided on the exterior of the building in an approved location. Where a fire alarm systems is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system. *(VUSBC - 903.4.2)*

3. **Voice evacuation**: All new fire alarm systems shall be tone and voice evacuation systems with a digital message repeater and microphone allowing for local paging from the control panel/annunciator. *(FDG - BSRV 6.3.6)*

4. **Systems Control Center**: All buildings (in Charlottesville) fire alarm systems shall communicate with University FM - Systems Control Center via Keltron transceiver. The cost of transceiver and its installation shall be included in the project budget. Coordinate the requirements very early in the project. *(FDG - BSRV 6.3.6)*

5. **Fire alarm zones**: The fire alarm notification zoning by smoke compartment shall be coordinated with sprinkler zones. Sprinkler zones and the fire alarm notification zones shall be identical for notification purposes. Verify that activation of an alarm (water flow or tamper switch) in one fire alarm notification zone will not communicate as an alarm from zone other than the activated zone.

6. **Shop drawings**: Shop drawings for the fire alarm system shall be submitted to the A/E of record for review and approval prior to submittal to UBO. Approval from UBO is required PRIOR to installation. Ensure that rooms without smooth ceiling or with beam depths exceeding 10% of ceiling height are provided with smoke detection in accordance with NFPA 72 -5.7.3.2.3 and 4.

7. **Calculations**: Provide point-by-point site lighting and interior lighting (normal and emergency) foot candle calculations, short circuit, building load, feeder voltage drop and generator load calculations with CD submittal. *(FDG - BSRV 6.2.1 and BSRV.6.2.7)*

8. **Identification of systems**: Components of all normal, standby and emergency electrical systems shall be identified with permanent marking. Emergency systems shall have permanent and readily identifiable labels - with red paint dot on lighting fixtures, red device body for receptacles etc. *(NEC - 700.9(A)) (FDG - BSRV 6.2.1)*

9. **Energy efficiency**: Occupancy sensors shall be used in rooms such as restrooms, single person offices, storage rooms, custodial or janitorial closets, etc. Unless impractical, occupancy sensors shall be used in conference rooms, classrooms and corridors. In areas with glazing, occupancy sensors are to have an integral light level sensor. *(FDG - BSRV 6.2.7)*

10. **Wiring**: All power and fire alarm wiring shall be in conduit. Minimum conduit size shall be ¾” EMT. Permitted maximum length of flexible metal conduit or MC Cable is 6 ft. Minimum power and lighting circuit conductors shall be #12 AWG. Minimum control wires shall be #14 AWG. *(FDG - BSRV.6.2.5)*