

**Table 14.1: Fire Detection and Life Safety Requirements for Substations**

| ITEMS                               | REQUIREMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| <b>10. FIRE ALARM SYSTEM</b>        | <b><u>5. OUTDOOR OIL FILLED TRANSFORMER VAULTS</u></b> <ul style="list-style-type: none"> <li>i. Flame (Radiant Energy) Detection and Alarm System shall be provided as per <b>Chapter 8. Section 4.9.</b></li> <li>ii. Probe type Heat detectors shall be provided as per <b>Chapter 8. Section 4.7.</b></li> </ul>                                                                                                                                                                                                                                                                                    |
|                                     | <b><u>6. AHU ROOM</u></b> <ul style="list-style-type: none"> <li>i. Multi-sensors shall be provided as per <b>Chapter 8. Table 8.12.1.</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                     | <b><u>7. FIRE PUMP ROOM</u></b> <ul style="list-style-type: none"> <li>i. Heat Detection and Alarm System shall be provided as per <b>Chapter 8. Section 4.7.</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                     | <b><u>8. OFFICES, CORRIDORS, STORAGE</u></b> <ul style="list-style-type: none"> <li>i. Smoke Detection and Alarm System shall be provided as per <b>Chapter 8. Section 4.3.</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>11. SMOKE VENTILATION SYSTEM</b> | <b><u>1. BATTERY ROOM</u></b> <ul style="list-style-type: none"> <li>i. Ventilation fan shall be provided for the room calculated as per <b>Chapter 6. Table 6.2.3.,</b> to keep the Hydrogen concentration below 1%. Ventilation fans shall be interfaced with Hydrogen detection.</li> </ul>                                                                                                                                                                                                                                                                                                          |
|                                     | <b><u>2. CONTROL ROOM, BATTERY CHARGER ROOM, SWITCHGEAR ROOM</u></b> <ul style="list-style-type: none"> <li>i. Smoke ventilation shall be provided as per <b>Chapter 10.</b> Utilizing building HVAC system to achieve the required smoke ventilation shall be permitted and shall be designed with motorized dampers and fire rated ducts as per <b>Chapter 10.</b></li> <li>ii. Room normal air-conditioning shall be such that it creates positive differential pressure compared to outside areas to prevent sensitive equipment damage from smoke infiltration from neighbouring areas.</li> </ul> |
|                                     | <b><u>3. CABLE SPREADING ROOM, CABLE BASEMENT</u></b> <ul style="list-style-type: none"> <li>i. Smoke extraction with fire rated ducts and dedicated extract fans shall be provided as per <b>Chapter 10.</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                |