

## 8.0 Laboratory Facilities and Environment

### 8.1 Facilities and Environment

- 8.1.1 The laboratory facilities are maintained to support good laboratory practices and accurate type evaluation test results. Equipment and other items that are no longer used for testing are discarded or removed from the laboratory and placed into storage to prevent clutter in the laboratory. Portable equipment and materials used for testing are returned to the appropriate location (s) after use, and test weights are returned to storage kits. (See Appendix D, Diagram of the Laboratory Facilities, and Appendix H, AP No. 11.)
- 8.1.2 The laboratory facilities, test areas, energy sources, lighting, heating, and ventilation facilitate proper type evaluation testing. The laboratory ensures that dust, electromagnetic interference, humidity, line voltage, temperature, and vibration levels (i.e., vibration sources due to surrounding equipment or improper support tables and temperature changes) do not affect the test and are appropriate for the device under test. The laboratory staff observes the device under test to determine if any conditions of the facility affect the test or if the environmental conditions are outside the limits specified in Appendix E.
- 8.1.3 Environmental conditions maintained by the laboratory are appropriate for the type evaluation testing. The environment in the laboratory where testing is performed does not invalidate results nor adversely affect the test results. The environmental conditions of the laboratory are listed in Appendix E. The laboratory environmental conditions are monitored using a chart recorder, controlled, and recorded if required by the test procedures or if they influence the quality of the results. The laboratory technical manager will stop testing if the environmental conditions jeopardize the test results (see Appendix H AP No. 27). The laboratory staff ensures that the facilities are adequate for testing by:
- 8.1.3.1 verifying that air conditioning, lighting, heating, and ventilation do not adversely affect the environmental conditions or device being tested (The environmental conditions of the laboratory are as listed in Appendix E. See Appendix H AP No. 27.),

- 8.1.3.2 maintaining good housekeeping practices to promote a clean, uncluttered laboratory according to procedures listed in Appendix H, AP No. 11.,
- 8.1.3.3 having sufficient space to minimize the risk of injury to staff and/or damage to standards or equipment due to activities around test setup (see Appendix D, laboratory diagram and dimensions),
- 8.1.3.4 maintaining a convenient and efficient work environment with effective separation of incompatible activities (see Appendix D laboratory diagram and dimensions), and
- 8.1.3.5 controlling access to and use of areas affecting the quality of tests (see QM section 18.2).

## 8.2 Environmental Records

### 8.2.1 Laboratory device testing

- 8.2.1.1 Environmental chamber conditions are recorded with the use of a strip-chart recording device while testing is being conducted. The laboratory environmental conditions are maintained and documented to ensure that they are conducive to the various type evaluations. Corrective actions are taken when the environmental conditions affect the quality of test (see Appendix E, Environmental Conditions, and Appendix O, Complaints/Corrective Actions form).

### 8.2.2 Field device testing

- 8.2.2.1 Typically field tests are not performed when the environmental conditions are such that they may adversely affect the test results, and these conditions are documented on the data sheets (see Appendix H, AP No. 27).

[NOTE: Environmental monitoring devices are periodically verified against accurate and traceable standards.]