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## Subject: NEBS Compatibility

**NEBS:** The SynQor family of DC/DC converters (PowerQor) has no known issues in regards to NEBS compatibility. SynQor worked with the engineers at Bellcore (Telcordia) to complete testing on the following 5 sections from GR-63 and GR-1089 as directly applicable to the DC/DC converter.

Temperature and Humidity, Section 4.1 of GR-63  
Handling Shock, Section 4.3 of GR-63  
Bounding and Grounding, Section 9.0 of GR-1089  
Fire Resistance, Section 4.2 of GR-63  
Airborne Contaminants, Section 4.5 of GR-63.

**Temperature and Humidity:** SynQor's product qualification testing has already established that the PowerQor family can operate above the limits defined in the Bellcore Specification of 0 to 50°C ambient, 8.3°C/Hour thermal shock rates, and 80% relative humidity.

**Handling Shock:** SynQor's product qualification testing has already established that the PowerQor family can operate well above the limits defined in the Bellcore Specification. (80G Shock Pulse and a sustained 3.0G vibration from 50 to 500 Hz). Our qualification limits also exceed the requirements for the NEBS Zone 4 earthquake rating.

**Bounding and Grounding:** The PowerQor family has short-circuit and over-current protection that will allow the module to meet the DC power source requirements, as well as pass DC Fault tests without damage to the converter.

**Fire Resistance:** SynQor uses a UL94-V (0) rated PCB, needle flame tests performed at SynQor, have shown the entire converter to meet the 30 second burn out requirement and pass the paper flammability requirement.

**Airborne Contaminants:** Several customers have taken various SynQor converters through Airborne Contaminant tests with no issues. According to Bellcore representatives, rarely are components and circuits such as those used in the design of the PowerQor converter affected by the corrosive portion of this test. Similarly, the dust test does not usually cause electrical problems on converters, due to the fact that the heat of the converter drives any moisture from the converter, thereby quickly increasing the surface insulation resistance.

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