

- I. Design structural supports for PV panels, arrays, and components in accordance with LANL ESM Chapter 5 – Structural and the following codes and standards:
 1. The International Building Code (*rooftop structures, Chapters 15 and 16*).
 2. ASCE 7 Chapter 13 – Seismic Design Requirements for Nonstructural Components,
 3. ASCE 7 Chapter 15 – Seismic Design Requirements for Non-building Structures,
 4. ASCE 7 Chapter 29 – Wind Loads on Other Structures and Building Appurtenances.
- J. For interactive PV systems, locate freeze-proof water hydrant(s) adjacent to each PV array so all PV panels can be accessed with a 50 ft garden hose for cleaning.¹⁸⁷
- K. Document the design of the PV system with the following:
 1. Design description and calculations for the selection and appropriate de-rating of proposed major components (PV modules, DC circuit combiner, charge controller, batteries, inverters, etc.); include data sheets for the major components.
 2. Specifications for proposed major PV system components,
 3. Electrical schematic showing interconnection of major components,
 4. Plans showing location and arrangement of major PV system components,
 5. Calculations for selecting PV system conductors,
 6. For interactive PV systems, provide calculations estimating annual kWh delivered to the facility 60 Hz power system.
 7. Structural calculations, drawings, and specifications for anchoring and bracing of PV system components.

¹⁸⁷ Sunlight is absorbed by dust, snow, or other impurities on the surface of the PV module. This reduces the amount of light that actually strikes the PV cells by as much as half. Maintaining a clean PV module surface will increase output performance over the life of the module.