Vacuum systems can contain extremely large amounts of stored energy

- All vacuum systems that have a potential energy in excess of 75,000 ft-lbs (101 kJ) must have a detailed engineering safety analysis performed by ME
  - 75,000 ft-lbs (101 kJ) corresponds to a volume of 35.3 ft³ (0.4 m³)

- Potential energy of vacuum equipment in the OMEGA and OMEGA EP systems
  - Target Chamber = 943 k ft-lbs (1.27 MJ)
  - Grating Compressor Chamber = 57.7 M ft-lbs (77.7 MJ)

- The load on vacuum ports scales with the area (radius squared)
  - 4-in.- and 24-in.- diam. ports have 184 lbs and 6650 lbs, respectively

All vacuum systems with a volume greater than 0.4 m³ must be analyzed, inspected, and approved by ME prior to operation.