



*Project Scope:* Engineering / Design from Conceptualization through Completion; Mechanical Engineering / Design; Product Conveyor, Actuated Radiation Shields, Airflow and Ozone Exhaust, Class A Sterile Pharmaceutical Environment; X-ray Radiation Shielding; High Voltage Distribution; Safety Interlocks and Controls; Complete Fabrication and Assembly; Operational Testing and X-ray Shield Cabinet Certification.

The Syringe Tub Electron Beam Sterilizer irradiates the exterior surfaces of plastic tubs that contain 100 syringes, with three 150 KeV electron beams. Intense x-ray radiation is an unwanted by-product of the electron beams. The irradiation chamber is contained in a shielded cabinet made of S/S encased ¼" thick lead. Actuated shield shutters that are synchronized with the product transport conveyors provide the x-ray shielding along the product path. Radiation levels outside the unit are less than the 10CFR21 requirement for publicly accessible x-ray system cabinets. The enclosure downstream from the electron beam guns has a built-in hydrogen peroxide vapor decontamination system to periodically sterilize the zone. HEPA filtration is included to achieve a Class 100 or better clean room condition. Ozone produced by the electron beam passage through the air is exhausted. The purpose of the system is to sterilize the exterior of the syringe packages as they pass into a sterile syringe filling machine. The system is capable of feeding the fastest syringe filling machine: 36,000 syringes per hour.