

Remote Radiation Measurements of Remote-handled Waste Storage Drums

The Argonne Radiation Safety Organization developed a swinging arm detector system to reduce radiation exposure during measurements of waste storage drum radiation levels. The system was conceived, designed, and fabricated in four working days for the measurement of gamma and neutron exposure rates at the outside surface of 30-gallon waste drums containing remote-handled transuranic waste. Measurements were a necessary part of the characterization process for acceptance at the Waste Isolation Pilot Plant (WIPP) at Carlsbad, New Mexico. The maximum exposure rate of these drums was approximately 30 rem/h. The detectors were rotated away to allow a crane to lower the drum into place. Then the swinging arm positioned the detectors and the exposure rates were read from the meters using a closed circuit television camera. See the attached figures. The drum was rotated in increments of 90 degrees to obtain four radiation measurements for each drum. The swinging arm was pulled into position using a 25-ft nylon cord operated manually from outside the shielded enclosure and returned to the storage position by an elastic cord. Use of the simple device kept doses ALARA and greatly reduced the measurement effort required.

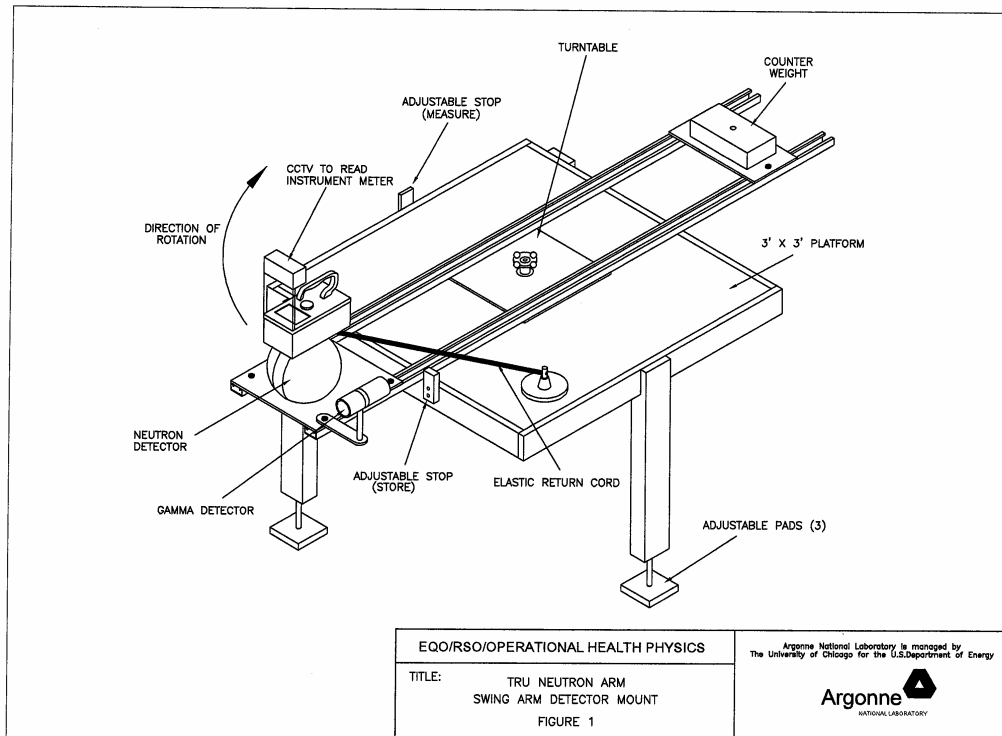




Figure 2. Swing Arm Mount Ready for Use

