WI90 - Well Irradiator

Overview

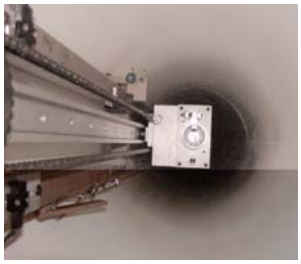
The Model WI90 Well Irradiator is a complete system for calibrating radiation survey meters with gamma or neutron radiation. The source moves up and down in a vertical well to move the source closer or further from the instrument under test, changing the exposure rate. This type of irradiator can provide high throughput for instrument calibration processes as the operator can safely stand only a few feet from the instrument being tested. An instrument platform is used to move the instrument into and out of the beam allowing the operator to quickly and easily adjust the instrument for calibration.

This system may be controlled with an electronic or computer based control system. The system comes complete with a radiation source, source elevator, attenuator, safety interlocks, and control panel.

Advantages

- Lowest cost shielding configuration, using earth as the main shield.
- High throughput for neutron or gamma instrument calibration.
- Highly reliable. Systems in the field have thousands of hours of use without failure.
- Easy to use with an intuitive operator interface.

Source Shield and Elevator



This system is designed to use earth and facility concrete as the main shielding components. The source is attached to a chain driven elevator platform that moves within the well. Travel limits are defined at installation with hard stops and switches. The source exposure distance can range from 2 to 40 feet, more if desired. A berm of earth and concrete is constructed to a height of about 4 feet above floor level. This berm provides the horizontal shield for the operator and restricts access to the well hole. The system is designed so that the exposure rate at the operators' station is less than 2 mR/hr.

Model WI90 Well Irradiator

Radioactive Sources

- All the sources are doubly encapsulated, hermetically sealed, special form sources.
- Up to 2200 Ci of Cs-137
- Up to 20 Ci of AmBe
- Up to 1.2 Ci of Cf-252
- Up to 5000 Ci of C0-60

Safety System

The irradiator system incorporates many safety features to create a fail-safe system. Mechanical hard stops and switches prevent the source from rising too far. Safety constraints have been applied to all components that involve source exposure. The safety interlock system must be fully satisfied before an exposure can occur and will immediately halt any exposure in process if they are broken. Status panels show radiation conditions at a glance. The entire system has been designed to meet or exceed guidelines and regulations found in ANSI Standards N43.3 and NCRP 88.

Control Panel Options (-E, -A)

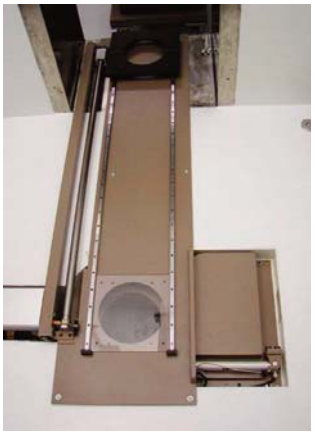
The operator control has two versions: electronic, and computer based. The electronic controller (E) will allow the operator to select the source distance and move the instrument to the expose position with pushbutton controls. The computer control system (A) offers complete control of the irradiator including exposure rate calculation, decay corrections, one button set up of irradiator, control of the instrument tables, and automated irradiator calibration.

www.hopewelldesigns.com
5940 Gateway Dr. Alpharetta, GA 30004 USA
sales@hopewelldesigns.com
Phone: 770-667-5770

Model WI90 Well Irradiator

Ancillary Equipment and Options

- A 100x lead attenuator is available on the gamma version.
- Video monitors for instrument inspection and room security are available.
- Jigs and fixtures are available for a variety of detectors.



Well Irradiator with attenuators

Standard Models			
Model	**Description**	**Max Activities**	**Max Activities**
WI90-N	Neutron Source	10 Ci, AmBe	0.5 Ci, Cf-252
WI90-G	Gamma Source	50 Ci, CCo-60	2200 Ci, Cs-137

Hopewell Designs, Inc.

www.hopewelldesigns.com
5940 Gateway Dr. Alpharetta, GA 30004 USA
sales@hopewelldesigns.com
Phone: 770-667-5770