

Radiation Effects Facility Beam Line Relocation

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As necessitated by the Cyclotron Institute Upgrade Project, the Radiation Effects Facility beam line has been moved from its original location in the 88"-cyclotron vault to its new location in cave 1. This move was conducted over a period of five weeks beginning the first week of January 2006. After a brief beam development period, the relocated facility served its first outside users on February 8, 2006.

Several tasks were completed prior to the beam line relocation and the actual move was carried out during the Cyclotron Institute's annual maintenance period in order to minimize the down time of the Radiation Effects Facility. Two equipment lifts were installed in December of 2004; one located at the southwest end of the high bay and another in cave 1. A staircase for user access to cave 1 was also fabricated. New roof planks and walls for a radiation shielding maze were also installed. A pre-fabricated office was ordered and assembled to serve as a data room for users. This data room allows for a climate and noise controlled environment. Two cable conduits, 4" in diameter, were drilled through the roof planks up to the newly constructed data room to provide the shortest distance possible for user cabling needs. A setup area was created just outside of the data room by constructing a plywood floor on top of the existing roof planks. A three dimensional rendering of the data room and setup area is shown in figure 1. Cabling for items such as detector signals, detector high voltage, video cameras and a new intercom system were also put in place prior to the beam line relocation.

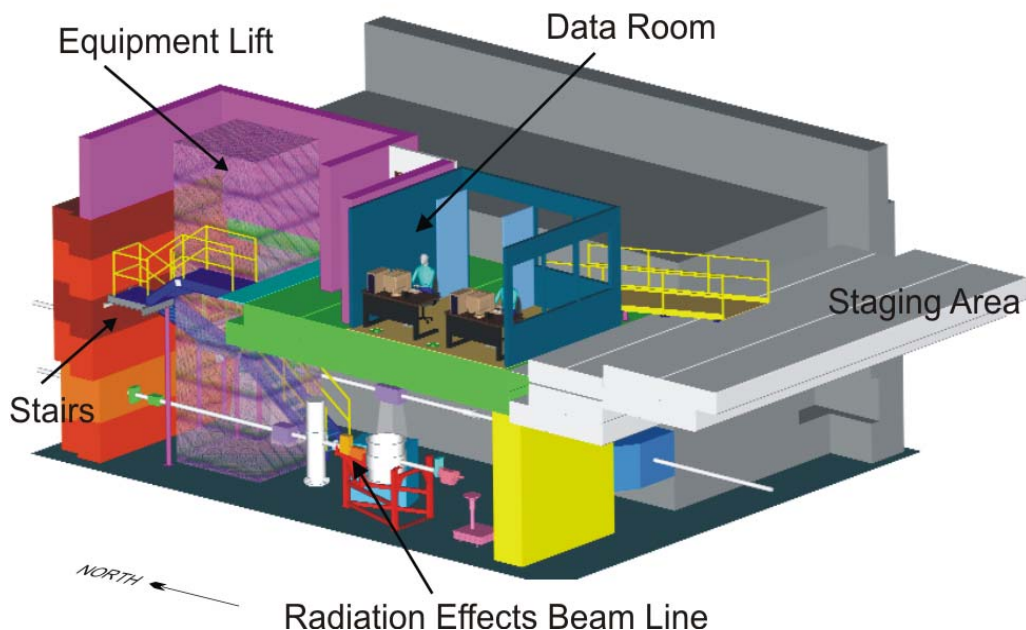


Figure 1. Three dimensional rendering of the Radiation Effects Facility relocation.

All beam line components including the Ortec chamber, degrader chamber, and the in-air station were first disassembled in the original 88"-vault location. This allowed for several vacuum system components to be replaced and some much needed general cleaning. Next, the beam line components were moved to cave 1 where they were aligned and reinstalled with minimal problems (figure 2). All beam line electronics, including CAMAC and NIM modules, the positioning system control unit, and the user interface computer were relocated to the PSP counting room.

Operations have run smoothly during the first two months of use. User feedback has been overall positive. Minor suggestions for improvements have been made and have been implemented when feasible.



Figure 2. Radiation Effects Facility beam line relocated to cave 1.