

### **N115. CRDM Worker Training.**

CRDM worker training, particularly with under-vessel mockups, improves crew performance and helps expedite tight outage schedules. "Full-rad dress" rehearsals are particularly valuable in acquainting technicians with working under restrained conditions. Both the CRDM changeout and rebuild crews should receive specialized training to correctly perform these tasks. More than half of the participants responding to the questionnaire either trained their own crews on mockup assemblies or employed contractors that had completed similar training. Many of the utilities provide three to five days of training to crews involved in changeout and rebuilding activities. In some cases, shortened "refresher" courses are provided to those personnel with previous experience. Several utilities stated that the training also involved individual testing. All of those utilities providing training or using specialized crews verified that these activities yielded improvements in job performance. Other benefits mentioned were reduction in radiation doses, increased worker safety, improved worker attitude, and fewer rebuild errors.

Other modifications made by utilities to reduce radiation exposures acquired during CRDM changeout and rebuilding activities include:

- Inner and outer filters were discarded as waste rather than cleaned.
- Shielded inner and outer filter removal tools were used.
- Flush tanks were used during CRDM rebuilding activities.
- Installed ALARA shielding achieved reductions at several sites that have historically "hot" drives.
- Shielded storage racks and customized concrete vaults have been built into CRDM rebuilding rooms.
- Remote cameras installed under the vessel and in the rebuild room have helped to better coordinate activities, save time, and reduce exposures.

*Taken From: "Managing the Aging of BWR Control Rod Drive Mechanisms," Rebecca H. Green, Nuclear Plant Journal, p. 62, May-June 1991.*