

BNL ALARA CENTER

Processes and Practices Related to Occupational Dose

ID: 40

QUICK-OPENING HATCH FOR PWR FUEL TRANSFER TUBE

Keywords: QUICK-OPENING HATCH; FUEL TRANSFER TUBE; OPERATIONAL AND MAINTENANCE TECHNIQUES; FUEL; TRANSFER SYSTEM; REFUELING; QUICK-CLOSEOUT GATES

Description:

PWR fuel transfer tubes typically utilize a blind flange that is bolted to the end of the fuel transfer tube. This flange is removed and replaced each refueling. Normally, this involves removal/replacement of 20 bolts by two men. These operations are performed in a 500 to 3000 mrem per hour field for a period of about 1 hour for removal and about 2 hours for replacement. The use of a quick-opening transfer tube closure device reduces the time and dose (approx. 7.5 MAN-REM/OUTAGE) associated with this task. If this work is done on critical path about 3 hours of critical path time can be saved. The flange is locked in place by a series of radial latches which can be inserted or retracted by a handwheel. The flange is hinged to a pivoting davit for opening and closing.

References and Selected Abstracts:

1. Kvistoner, E. "Cost Effectiveness of Dose Reduction Modifications at Ringhals," presented at the International Workshop on Historical Dose Experience and Dose Reduction (ALARA) at Nuclear Power Plants, Brookhaven National Laboratory, May 29, June 1, 1989, NUREG-CP-0066. (Available from National Technical Information Service, Springfield, VA 22161.)
2. Dutton, L.M., "The Application of ALARA Principles to Sizwell B," National Nuclear Corporation Report PWR 1Rx646, NNC, 1982.