

## **Missing Annual External Radiation Dosimetry Data Among Hanford Workers**

Richardson D, Wing S, Watson J, Wolf S

### **ABSTRACT**

Epidemiological studies of workers employed at the Hanford Site have been underway for nearly 30 years. Although the external radiation dosimetry program at Hanford has been fairly comprehensive, some workers included in previous epidemiological analyses have periods of employment during which there are missing annual external radiation dosimetry records. In this report, employment history records and annual external dosimetry records have been used to investigate the extent of missing annual external dosimetry records for workers at the Hanford facility. A “nearby” procedure for estimating values for missing annual external dosimetry records was evaluated. Among the 33,459 workers who were employed at least 180 days and had at least one annual external dosimetry record, annual external dosimetry records were missing for 8% of the years of employment (32,323 missing annual external dosimetry records). Missing annual external dosimetry records were more common for female Hanford workers than for male workers, and for workers employed in the early years of Hanford’s operation than for workers employed in later years of operation. The nearby procedure provided reliable estimates of values for missing annual external dosimetry records. Using this procedure, 18,937.5 mSv were estimated for missing annual external dosimetry records; this was 2% of the total recorded cumulative external radiation dose for these workers. Missing annual external dosimetry records should be considered as a potential source of bias and uncertainty in investigations of radiation – cancer associations among Hanford workers.

Richardson W, Wing S, Watson J, Wolf S [1999]. Missing Annual External Radiation Dosimetry Data Among Hanford Workers. *J of Exp Analysis and Environ Epi.*, 9:575-585.