

### **3495. Collective Dose Reduction at Washington Nuclear Project-2**

In 1994, the collective dose at Washington Nuclear Project-2 (WNP-2) was 865 person-rem and among the highest of the world's boiling water reactors (BWRs) according to the World Association of Nuclear Operators (WANO). The northwest hydroelectric system and abundant spring water supply results in unique annual refueling and maintenance outages and a subsequent high collective dose compared to most BWRs that operate on a 18-month fuel cycle. Although WNP-2 is a low crud plant, ambient exposure rates are high. Studies showed that the high exposure rates are a result of low feedwater iron and relatively high cobalt concentrations. Teamwork triggered by senior and line management initiatives led to significant reductions in ambient exposure rates and personnel dose. Collective dose during non-outage months dropped from an average 21.5 person-rem per month in 1993 to 6.6 person-rem per month in 1996. This represents a 69% reduction in non-outage exposure. The station-wide effort included an as low as is reasonably achievable (ALARA) incentive program, in-depth studies of source-term composition and transport mechanisms, innovative coating and shielding applications, planning and scheduling efficiencies, engineering support, system flushing, and the physical removal of hot spots.

*Taken from: Madden, C.R., "Collective Dose Reduction at Washington Nuclear Project-2," Radiation Protection Management, Vol. 14, No. 3, May/June 1997, pp. 33-40.*