

D7. SLUDGE MANAGEMENT SYSTEMS

When corrosion products (sludge) deposited in steam generators build up on the secondary side they reduce efficiency, increase pressure drop and result in lost megawatts. Such sludge also causes corrosion, so plant operators adopt aggressive program to maintain secondary-side cleanliness. ABB Combustion Engineering Nuclear Operations has developed a Sludge Removal System, as part of its steam generator life management service, that removes sludge from most types of steam generator.

The system includes a tubesheet sludge lance designed for both square and triangular pitch steam generators. The high-pressure, overlapping, multi-directional jets of demineralized water have effectively removed up to 4000lb of sludge during a single cleaning. Other features are a multi-directional direct-spray subsystem and a mass flush subsystem for upper bundle flushing. Employing these upper bundle flushing systems in conjunction with tubesheet spraying has more than doubled the amount of material removed at some plants.

The sludge Removal System is fully self-contained, with a video monitoring system and pump, filtering and storage systems for effluent handling. The system may be modified to remove sludge from other environments such as the spent fuel basin at Hanford.

For more, "Sludge Management Systems," pg. 41, Nuclear Engineering International, Vol.41, No.502, May 1996.