

N269. Worker Protection during Contaminated Concrete and Steel Remediation

Concrete and steel are primary structural elements in nuclear facilities and industrial plants where hazardous radioactive materials and toxic chemicals are present. Although often covered with special protective coating, both the coatings and concrete of walls, floors, and structures become contaminated to some extent during their services life. This contamination can extend from fractions of an inch to several inches into the porous concrete, depending on the integrity of coatings and service conditions encountered.

Various chemical wash methods, wet and dry abrasive blasting techniques, and surface scarification processes have been applied for concrete and steel decontamination. During these decontamination operations, workers are required to wear burdensome protective clothing and respirators to protect themselves against harmful radioactive and chemical contamination. While in this protective clothing, worker's production rates dramatically decrease while fatigue, heat stress and risk potential increase. Due to the large volume of concrete and steel decontamination work to be completed at the Savannah River Site, the Westinghouse Savannah River Company (WSRC) implemented engineering controls that could reduce - or even eliminate - excessive worker protective gear while, at the same time, promote safe and aggressive production.

Taken from, "Engineering Considerations for the Needle-gun with Local Exhaust," by S. Lefkowitz and G. Harris. For further information, contact George E. Harris, Pentek Inc., 1026 Fourth Ave., Coraopolis, PA 15108-1659.