

4.7 ALARA Calculation Results

The final ALARA calculations were performed by comparing the total remediation cost to the benefit of averted dose using Equation 4-9. The calculations were described in detail in Sections 4.5.1, 4.5.2 and 4.5.3. The results for each remediation method, for both the Industrial Worker (for soils) and (Industrial Worker) Building Occupancy scenarios, are provided in Table 4-2. Since the *Conc/DCGL_w* values are greater than 1 for all remediation methods and scenarios, no remediation below the NRC 25 mrem/y dose limit is required.

Table 4-2
ALARA Evaluation Results

Remediation Action	Unit Costs (\$ per ft, m² or m³)	<i>Conc/DCGL_w</i> Ratio
Pressure Washing and Vacuuming	15.31	1.31
Wiping/Washing	58.87	6.31
Concrete Scabbling(Upper Bound)	67.02	5.75
Concrete Scabbling (Lower Bound)	33.36	5.72
Grit Blasting Surfaces (Upper Bound)	96.88	2.19
Grit Blasting Surfaces (Lower Bound)	80.58	1.82
Grit Blasting Embedded/Buried Piping	27.39	42.77
Soil Excavation	2,679.82	1142.00

4.8 References

- 4-1 U.S. Nuclear Regulatory Commission NUREG/CR-5512, Volume 3, “Residual Radioactive Contamination from Decommissioning – Parameter Analysis, Draft Report for Comment,” October 1999
- 4-2 U.S. Nuclear Regulatory Commission, NUREG-1757, Volume 2, Final Report, “Consolidated NMSS Decommissioning Guidance - Characterization, Survey, and Determination of Radiological Criteria,” September 2003
- 4-3 U.S. Nuclear Regulatory Commission, NUREG/CR-5884, Volume 2, “Revised Analyses of Decommissioning for the Reference Pressurized Water Reactor Power Station,” Draft Report for Comment, October 1993
- 4-4 U.S. Nuclear Regulatory Commission, NUREG-1496, Volume 2, Final Report, “Final Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities,” July 1997
- 4-5 U.S. Nuclear Regulatory Commission, NUREG/CR-5884, Volume 1, “Revised Analyses of Decommissioning for the Reference Pressurized Water Reactor Power Station,” Draft Report for Comment, October 1993
- 4-6 “License Termination Plan,” submitted by Maine Yankee Atomic Power Company, Revision 3, October 15, 2002
- 4-7 U.S. Nuclear Regulatory Commission, NUREG-1530, “Reassessment of NRC’s Dollar per Person-Rem Conversion Factor Policy,” December 1995

- 4-8 U.S. Nuclear Regulatory Commission, NUREG-1496, Volume 1, Final Report, “Final Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities,” July 1997
- 4-9 U.S. Nuclear Regulatory Commission, NUREG/BR-0058, Revision 4, “Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission,” September 2004
- 4-10 Rancho Seco Decommissioning Technical Basis Document DTBD-05-015, Revision 0, “Rancho Seco Nuclear Generating Station Structure Nuclide Fraction and DCGLs”
- 4-11 Rancho Seco Decommissioning Technical Basis Document DTBD-05-014, Revision 0, “Rancho Seco Nuclear Generating Station Surface Soil Nuclide Fraction and DCGL”