

CERCLA and RCRA Considerations in D&D Safety Analyses

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Regulatory Protocols: Cleanup or remediation of a hazardous or contaminated site falls under CERCLA (Comprehensive Environmental Response, Compensation and Liability Act or Superfund). CERCLA encompasses other regulatory requirements such as RCRA (Resource Conservation Recovery Act) and other federal laws (e.g., CAA, CWA, SDWA, TSCA, and SARAH Title III/EPCRA). RCRA requires certain rules to follow for hazards or mixed waste. Prior to remediating a site, EPA's protocol under CERCLA requires that certain steps be followed: a) Preliminary Assessment/Site Investigation; b) Remedial Investigation; c) Feasibility Study; d) NEPA Compliance for a federal facility; and e) Record of Decision (ROD) – This is a final stage for action that includes the input or results from the previous steps. The ROD includes the selection of the remedial action, basis for selection, hazardous consequences, risks involved, costs consideration, etc. For non-DOE sites whose ROD is to control the hazards in place rather remove them (e.g., a radium site in Denver), monitoring of groundwater for radionuclides and RCRA elements can provide indication if the stabilization process is working under CERCLA.

D&D at DOE Sites: As many DOE sites gear towards decontamination and decommissioning (D&D), RCRA and CERCLA play an important role if low level waste (LLW) or transuranic (TRU) waste is mixed with hazardous (RCRA) components. RCRA is managed by individual States and CERCLA is managed by EPA, and both have jurisdiction on DOE's mixed waste. For D&D operations, waste generation, handling, management, and disposal are important issues at DOE sites, both from regulatory compliance (RC) and safety analysis (SA) perspective. Safety Management Programs encompass the RC and SA features.

Authorization Basis (AB) or SA: Currently, AB or SA is required prior to D&D of a nuclear or radiological facility. A useful guidance for D&D AB is shown in *Hazard Baseline Documentation* (DOE-EM-STD-5502-94), which provides guidelines for hazard classification (HC) and subsequent level of SA. For a nuclear facility, DOE-STD-1027-92 is used to classify a facility as HC 1, 2 or 3. If the radionuclide inventory exceeds thresholds of HC-2 or HC-3, then a graded Safety Analysis Report (SAR) is required per DOE Order 5480.23 along with other AB requirements such as TSRs and USQDs. If the inventory is below HC-3, then radionuclides are compared with the RO values in 40 CFR 302. Appendix B for a radiological facility. If the

