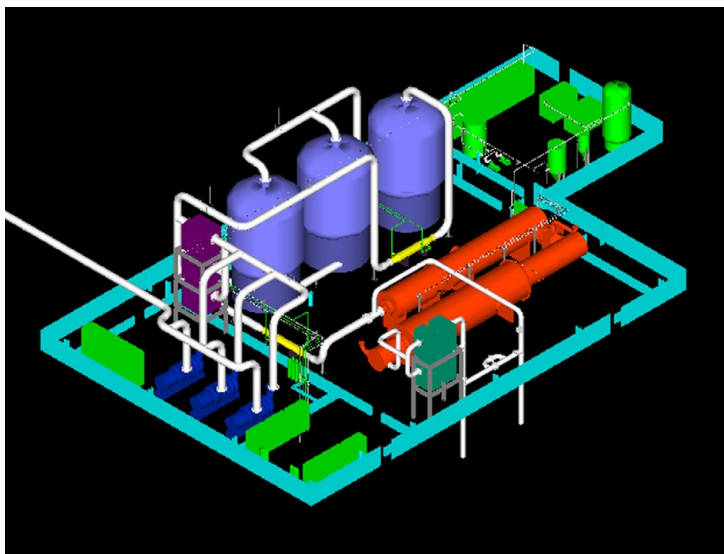


Merrick & Company provided design services for the Sodium Bearing Waste Treatment Facility (SBWTF) at the Idaho National Laboratory (INL). Merrick evaluated the feasibility of calcination with Maximum Achievable Control Technology (MACT) Upgrades for the SBWTF. Merrick's scope was equivalent to the preparation of a Conceptual Design Report (CDR) required by DOE Order 413.3. Merrick's deliverables were used by the INL as the basis for the process selection and subsequent design activities for the SBWTF. Merrick's feasibility study addressed modifications to the existing calcinations system at the Idaho Nuclear Technology Center (INTEC), including significant upgrades to the offgas emissions treatment system to meet EPA's MACT requirements. Estimated value for the SBWTF was \$350M.

Significant applicable codes, procedures, and references included:

- DOE Order 413.3. Program and Project Management for the Acquisition of Capital Assets
- DOESTD-1027-92
- DOE-STD-3009-94
- DOE-STD-1021-93
- ASME-NQA-1-1997
- INL-specific design codes



Equipment deliverables supplied by Merrick included:

- P&IDs with Material and Energy (M&E) balances
- Malt offgas equipment sizing
- Piping plans with general layouts
- Civil/site plans describing utility tie-ins and interfaces
- Remote mechanical systems and layouts
- PLC configurations
- Radiation Monitoring Control Plans
- Fire detection and protection plans and layouts
- General electrical layouts for power, lighting, grounding, and fire protection
- Critical and long-lead procurement items and materials list (database) of design codes and standards for design and construction of the SBWTF
- Decontamination, decommissioning, and demolition plans for the SBWTF
- Risk Assessment Report
- Feasibility Study Report
- Draft resource loaded Engineering, Procurement, Construction (EPC) Schedule
- Schedule for the SBWTF
- Draft Cost Estimate (TEC) with Monte Carlo or Latin-Hypercube uncertainty analysis
- Priced major equipment list
- Value Engineering Report
- Trade studies (equipment selection, operations, maintainability, life cycle costs)
- Process Hazards Analysis (PHA) to meet the standards of 29 CFR 1910.119 and 40 CFR Part 68

