CASE STUDY

Coal Plant Decommissioning, Demolition, and Site Remediation Planning

CHALLENGE

A large generation owner faced the complex challenge of shutting down a coal fired plant while maintaining operational safety, regulatory alignment, and cost certainty through the decommissioning, demolition, and environmental remediation processes. In addition to managing a multiunit retirement schedule and budget, the organization needed a defensible asset retirement obligation (ARO) basis and an executable plan for demolition scope, waste disposition, and coal pond/pile remediation options.

Closure planning can fragment across operations, engineering, environmental, and finance disciplines, creating gaps between the "what" (demolition/remediation scope) and the "how" (budget, timing, and assumptions). To overcome this challenge, MCR's client required an integrated approach to translate site realities into a closure cost estimate, a realistic five-year O&M budget, and sound ARO accounting.

SOLUTION

MCR developed an integrated closure framework connecting unit retirement timing, decommissioning execution, demolition estimating, and site remediation strategies into a single, coherent decision and budgeting package. The deliverable set included 1) a detailed five-year O&M budget, 2) financial projections for the decommissioning/demolition period, and 3) budgetary estimates for demolition and remediation.

APPROACH HIGHLIGHTS:

- **Re-baselined the site five-year O&M budget plan** leading to site closure. Budget requests were compared to actuals, challenged during the decommissioning period, and incorporated enhanced staffing projections.
- **Built a bottom-up demolition estimate** using itemized unit costs to improve plant-specific accuracy and explicitly designed to support ARO development.
- **Structured remediation options** for key environmental liabilities (ponds and coal pile), providing cost and duration tradeoffs to support internal decision making and regulatory discussions.
- **Established clear closure assumptions** with the client team to prevent scope drift and drive alignment around a single set of facts.

RESULTS

MCR delivered a closure financial and execution package, providing our client with a practical framework for planning retirement activities and evaluating major remediation decisions with quantified tradeoffs.

UNIT CLOSURES AND BUDGETARY ESTIMATES

- The five-year budget was reviewed line by line, substantially adjusted to account for sequenced unit closures and field operational conditions, and credited for ARO-eligible costs.
- In the five-year budget period alone, MCR identified approximately $60 million in O&M budget reduction opportunities and $155 million in new ARO costs.
- A detailed staffing plan by year was agreed upon and integrated into labor cost projections through site closure, yielding identified savings of approximately $26 million compared to original projections.

SITE DEMOLITION AND REMEDIATION SCOPING

- A comprehensive estimate of site demolition costs was developed to support confident ARO budgeting. The scope covered all demolition and remediation costs required to return the site to brownfield status.
- The retirement estimate included specific assumptions to safeguard scope and ensure all stakeholders agreed on the final conditions and demolition boundaries.
- To reduce the risk of extreme disposal costs, MCR evaluated an expansion of the planned on-site landfill capacity against projected demolition/remediation waste volumes and compared unit disposal economics.
- Multiple solutions of varying cost for removal of pond water were evaluated to provide options for decision makers. These included:
    - 5 years of pumping and discharge
    - 5 years of forced evaporation
    - 10 years of natural evaporation

RISK MANAGEMENT AND DECISION SUPPORT

- MCR provided a range of demolition and remediation options, ranging in cost from approximately $100 million to $180 million (excluding contingency).
- For demolition and remediation, cost estimates were enhanced with probabilistic Monte Carlo analyses to identify key cost drivers, cost-reduction levers, and prudent project contingency allowances.

The Bottom Line
The final deliverable leveraged a consolidated operational plan leading to closure, a restrategized staffing plan, and various strategies for demolition and remediation yielding a $60 million reduction in O&M and identification of up to $330 million in ARO.