




Drivers for Studies

| Accounting Obligations | Retirement Planning | Regulatory Filings |
|---|--|--|
| <ul style="list-style-type: none">FAS 143: Asset retirement obligations | <ul style="list-style-type: none">Resource planning inputsBudgeting for decommissioning | <ul style="list-style-type: none">Rate casesDepreciation studiesFilings for decommissioning planning |



BURNS & MCDONNELL



AVOIDING POTENTIAL PITFALLS



Avoiding Potential Pitfalls

Identify All Potential Uses of Decommissioning Costs Early

| | |
|---|--|
| Appropriate Level of Detail in Estimates | Appropriate Assumptions for: Level of Decommissioning Level of Site Restoration What's Included in Decommissioning vs. O&M Scrap Value (spot vs. historical averages) |
|---|--|

BURNS & MCDONNELL

Avoiding Potential Pitfalls

- ▶ Involve all potential users of the study upfront
 - Engineering teams
 - Regulatory compliance groups
 - Accountants
 - Executive management

BURNS & MCDONNELL

Avoiding Potential Pitfalls


- ▶ Solicit input from all other appropriate parties early in the process
 - Environmental team
 - Attorneys
 - Plant operations and management staff



BURNS & MCDONNELL

Avoiding Potential Pitfalls

Project Example




- ▶ Identifying uses and involving all parties upfront
 - Wind farm decommissioning studies for zoning approval
 - Accountants also used costs for FAS 143 ARO
 - Attorneys interpreted regulations to be less stringent than engineering assumptions
 - Developers had negotiated specific terms in lease agreements

BURNS & MCDONNELL

Avoiding Potential Pitfalls

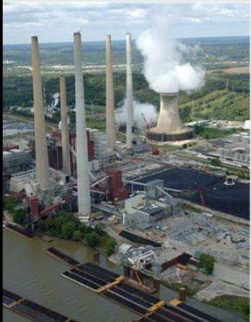
- ▶ Understand potential regulatory requirements
 - Regulations regarding decommissioning
 - Federal level - EPA
 - State level – EPA, PUC
 - County level – Zoning Regulations
 - Prior decommissioning studies
 - Submitted for your assets
 - Submitted by other utilities



BURNS & MCDONNELL

Avoiding Potential Pitfalls

Project Example



- ▶ Understand regulatory requirements
 - Florida dismantlement study
 - State Level – Florida Administrative Code 25-6.04364. Electric utilities dismantlement studies
 - State Level – Guidance for disturbance and use of old closed landfills or waste disposal areas in Florida
 - Federal Level – EPA: Polychlorinated Biphenyl (PCB) site revitalization guidance under the Toxic Substances Control Act (TSCA)

BURNS & MCDONNELL

Avoiding Potential Pitfalls

- ▶ Engaging qualified third parties
 - Engineering firms
 - Demolition contractors
 - Remediation specialists
 - Legal team



BURNS & MCDONNELL

Avoiding Potential Pitfalls

- ▶ Focusing on major cost drivers
 - Environmental
 - Asbestos
 - PCBs, mercury, lead
 - Pond/landfill closures
 - Site remediation
 - Bulk quantities
 - Concrete
 - Steel
 - Scrap



BURNS & MCDONNELL

FINDING A QUALIFIED FIRM




Finding a Qualified Firm

- ▶ Ability to cover all aspects of decommissioning from planning to site restoration
 - Consulting A/E firm
 - Environmental remediation
 - Construction/demolition experience
 - Demolition contractors as subcontractor
 - Support to A/E if needed




Finding a Qualified Firm

Project Example



- ▶ Ability to cover all aspects of decommissioning from planning to site restoration
 - Depreciation study support
 - Prior study performed by demolition contractor did not meet requirements for pond closure



Finding a Qualified Firm

- ▶ Regulatory and testimony support experience
 - Understanding of applicable regulations
 - Experience with preparing demo costs
 - Familiarity with public utility commissions
 - Experience providing testimony






Cost Estimate Categories

- ▶ Objectives
 - Break costs out for reporting purposes
 - Report by unit and by common facilities
 - Provide easy to use summary
 - Make cost estimate easily updateable

BURNS & MCDONNELL

Cost Estimate Categories

- ▶ Asbestos abatement
 - Major cost driver
 - Subject to change over time (as remediation projects take place)
- ▶ Landfill/pond closure
 - Likely largest single cost item
 - Closure requirements vary by location and are subject to change (subtitle C or D under RCRA)



BURNS & MCDONNELL

Cost Estimate Categories

- ▶ Other environmental costs (PCBs, mercury, lead, etc.)
 - Often difficult to obtain good quantities
 - Assumed amounts or allowances
- ▶ Structural demolition
 - Demolition contractor's strength
 - Breakout labor, equipment and disposal

BURNS & MCDONNELL

Cost Estimate Categories

- ▶ Hauling and disposal
 - Onsite disposal vs. offsite disposal
 - Local values – contact landfills
 - Easily updated
- ▶ Scrap values
 - Most volatile price
 - Spot price or historical average?
 - Needs updating most often
 - Contact local scrap dealers



BURNS & MCDONNELL

Cost Estimate Categories

COST SUMMARY
PER PLANT/FACILITY

| | | | |
|-------|------------------------|----------|---------------|
| LABOR | MATERIAL AND EQUIPMENT | DISPOSAL | ENVIRONMENTAL |
|-------|------------------------|----------|---------------|

TOTAL COST
\$ SALVAGE

BURNS & MCDONNELL

Key Cost Drivers

- ▶ Environmental remediation (continued)
 - Pond/landfill closure
 - Often the cost driver for decommissioning
 - Most often overlooked item in demolition bids
 - Future use of site considerations
 - Any closure of cells included in operating costs?
 - On-going monitoring costs?



BURNS & MCDONNELL

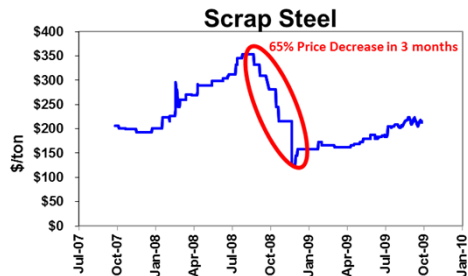
Key Cost Drivers

- ▶ Bulk quantities
 - Focus on the big stuff
 - Steel and concrete are main structural demolition drivers
 - Obtaining good quantities can be difficult
 - Cross check with similar facilities
 - Have demolition contractors review

BURNS & MCDONNELL

Key Cost Drivers


- ▶ Scrap market volatility



BURNS & MCDONNELL

Key Cost Drivers


Project Example



- ▶ Scrap
 - Depreciation study support
 - Prior study performed by demolition contractor did neglected a large quantity of Inconel scrap – nearly \$3 million in scrap value

BURNS & MCDONNELL


PREPARE A DEFENDABLE STUDY



BURNS & MCDONNELL

Defendable Studies

- ▶ Establishing an appropriate study methodology
 - Begin with the end in mind
 - Top down or bottom up (or some combination there-of)?
 - Site visits are a must
 - If someone will testify, they must be on site visit team
 - Leads for each area on site visit



BURNS & MCDONNELL


Defendable Studies

- ▶ Defining decommissioning assumptions
 - Incorporate all regulatory requirements
 - Has regulatory authority approved previous studies
 - Don't forget about the details (even if it doesn't seem to be a cost impact)

BURNS & MCDONNELL


Defendable Studies

- ▶ Anticipating regulatory questions
 - Think like an intervener
 - Shoot holes in your own study, then plug them
 - Review hearing proceedings
 - Expect conflicting cost estimates (even from other jurisdictions) to be introduced



BURNS & MCDONNELL

DEFENDING THE RESULTS



Defending the Results

TYPICAL CRITIQUES

| | | | | |
|---|-------------------------|--------------------------|----------------------------------|---|
| No Net Cost or Positive Value Demolition in Other Cases | Contingency is Too High | Scrap Values are Too Low | Productivity Factors are Too Low | Level of Decommissioning and Remediation is not |
|---|-------------------------|--------------------------|----------------------------------|---|

BURNS & MCDONNELL

Defending the Results


► How to address commission questions

- Lower decommissioning costs from other cases
 - Cost are site and project specific
 - Environmental issues vary
 - Scrap values fluctuate
 - Focus on quality of current study, not details of other studies

BURNS & MCDONNELL

Defending the Results

Project Example



► Lower decommissioning costs from other cases

- Rate case
 - Opposition presented example from another state where actual demolition was 30 cents on the dollar compared to engineer's estimate
 - Opposition presented example from same state where demolition contractor paid the owner \$1 million for the facility

BURNS & MCDONNELL


Defending the Results

- ▶ How to address commission questions
 - Contingency is too high
 - Has regulatory authority approved prior studies? What contingency was included?
 - Contingency higher on decommissioning than construction, due to greater unknowns
 - Published recommendations (AACE)
 - Other professional judgment
 - Experience with demo estimates vs. actuals
 - Contingency approved in other jurisdictions

BURNS & MCDONNELL

Defending the Results

Project Example



- ▶ Contingency is too high
 - Rate case
 - Opposition presented testimony that negative contingency should be considered

BURNS & MCDONNELL


Defending the Results

- ▶ How to address commission questions
 - Scrap values are too low
 - Don't use peaks or valleys
 - Timing the market impossible
 - Long duration projects, market will fluctuate
 - Demo contractors won't include peak market value in bids

BURNS & MCDONNELL

Defending the Results

Project Example



- ▶ Scrap values are too high
 - Rate case
 - Opposition presented testimony that utility was not assuming an efficient approach to decommissioning by not assuming peak scrap values
 - Opposition presented testimony that scrap will experience high prices when economies of China and India grow and substantial rates

BURNS & MCDONNELL


Defending the Results

- ▶ How to address commission questions
 - Productivity factors are too low
 - Has regulatory authority approved prior studies? What productivity factors were used?
 - Published resources (means, others)
 - Demolition contractor values

BURNS & MCDONNELL

Defending the Results

Project Example



- ▶ Productivity values are too low
 - Rate case
 - Opposition argued productivity values
 - Man-hour estimates were solicited from demolition contractors and had been approved in prior iterations of the study

BURNS & MCDONNELL


Defending the Results

- ▶ How to address commission questions
 - Level of decommissioning is not appropriate
 - Does regulatory authority provide guidance?
 - Compliance with applicable environmental regulations
 - Good engineering practice

BURNS & MCDONNELL

Defending the Results

Project Example



- Level of decommissioning is not appropriate
 - Rate case
 - Opposition presented testimony that "the options available to the Company (include)...the sale of the facility at an amount significantly above net book value."
 - Regulations defined dismantlement cost as "the costs for the ultimate physical removal and disposal of plant and site restoration, minus any attendant gross salvage amount, upon final retirement of the site or unit from service."

BURNS & MCDONNELL

Defending the Results

- ▶ Lessons learned from past regulatory hearings
 - Begin with the end in mind
 - Research the regulations
 - Review past regulatory approvals
 - Used published values whenever possible (productivity, scrap, labor, etc.)
 - Think like an intervener

BURNS & MCDONNELL

Defending the Results

- ▶ Lessons learned from past regulatory hearings
 - Define all assumptions
 - Make sure you hit all the big ones
 - Even if little or no cost impact, make sure you demonstrate that you've considered issue
 - If unknown (i.e. soil contamination), provide a basis for a reasonable cost

BURNS & McDONNELL

Defending the Results

- ▶ Lessons learned from past regulatory hearings
 - Focus on the quality of your study
 - Don't get hung up on the details of other studies (typically the opposition won't supply it anyway)
 - Commissions tend to give weight to your professional judgment and qualifications

BURNS & McDONNELL

Q&A



Jeff Kopp
Burns & McDonnell Engineering
jkopp@burnsmcd.com
(816) 822-4239

BURNS & McDONNELL