Greatest Challenges in CCP Management and What To Do About Each

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http://www.flyash.info/
Managing CCP in today’s market is not easy to map!

Start: You are here

Conveyance

Operations and Maintenance

Beneficial Reuse

Wastewater

Ponds

Landfills

Calculate ... 0%

End: Successful CCP Management
Managing CCP in today’s market is not easy to map!

Presentation objective: Identify the challenges and suggest guidance to navigate the route to successful CCP management.
Highest Risks/Concerns in CCP Management

- Experienced team members
- Potential site impacts
- Regulatory uncertainty
  ("Regulatory Purgatory")
- Wastewater management and treatment
- Adherence to schedules
- Seismic requirements for new facilities and closure
- Inclusion of a strategic planning process
- Availability and cost of materials
- Impacts to existing CCP facilities
- Changes to CCP and Management
Regulatory Uncertainty ("Regulatory Purgatory")

Federal Regulations

State Regulations

Point A

Point B
Regulatory Uncertainty (“Regulatory Purgatory”)

Solution

• **Understand and Evaluate the Risk (develop a regulatory approach)**
  - Develop conceptual plans (identify differences between state and proposed federal regulatory requirements; compare with industry standards)
  - Determine the impact to the project
  - Develop an approach to discuss with the regulatory agencies (based on prioritization)

• **Communicate (negotiate) with Regulating Agencies**
  - Understand key triggers
  - Understand schedule constraints
  - Understand the regulatory framework that the action will be carried out through (e.g., NPDES)
Wastewater Management and Treatment

Low volume wastewater streams

Discharge

CCP Streams

Treatment
Wastewater Management and Treatment

Low volume wastewater streams

No Discharge?

New, concentrated wastewater streams

CCP Streams

Closed

Detour

CCR Rules

Treatment

Discharge

ELG

Rules
Wastewater management and treatment

Solution

- Include wastewater treatment approach in overall CCP program
  - An initial assessment of all (existing and new) wastewater streams
  - Develop evaluation of treatment alternatives and select
  - Include these results into overall plant project schedules

- Regulatory drivers (ELG) may impact overall approach
  - Result in pond closure(s) and/or revisions to CCP Management practices
Adherence to schedules (project, permitting, construction, etc.)

START
Beginning CCP Management Condition

Project 1
Complete

Project 2
Complete

END
Final CCP Management Condition
Highest Risks/Concerns in CCP Management

- Adherence to schedules (project, permitting, construction, etc.)

**START**
Beginning CCP Management Condition

**Project 1 Complete**

- 1 to 2 years
  - Design of Final Closure

- 2 ½ to 3 years
  - Dry CCR Handling Infrastructure

- 3 to 4 years
  - Non-CCR Wastewater Treatment

- 3 ½ to 5 ½ years
  - New Solid Waste Disposal Facility

**End of wet disposal**

**Project 2 Complete**

**END**
Final CCP Management Condition

- 2 ½ to 3 years
  - Design of Final Closure

- 3 to 4 years
  - Non-CCR Wastewater Treatment

- 1 to 2 years
  - Design of Final Closure

- 3 years
  - Dry CCR Handling Infrastructure

- 3 ½ to 5 ½ years
  - New Solid Waste Disposal Facility
Adherence to schedules (project, permitting, construction, etc.)

Highest Risks/Concerns in CCP Management

Adherence to schedules (project, permitting, construction, etc.)
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Solution

• Early development of project schedules that include key elements of adjacent projects (create a master/program schedule)

• Involvement of regulatory authorities to identify “hard spots” and possible rule exemption requests

• Regular schedule meetings to check progress and enforce milestones

• Early start on projects…DON’T WAIT TILL THE LAST MINUTE
Experienced Team Members (engineering, consultant, construction, contractors, etc.)

Start
- Experienced Teams
- Sophisticated Understanding

End
- Effective and Efficient Designs (construction and operation)

On the job training
Solution

• Select team members with demonstrated experience and expertise to avoid issues

• Consider combining related projects and have one team

• Consider selecting a smaller number of qualified consultants to manage a collection of like projects (identify a lead consultant)

• Consider teams with strong relationships with regulatory agencies
Potential Site Impacts (to Groundwater)

- Pond Conditions
- Construction Practices
- Operations
- Age

Potential for GW impacts (unknown cost / activities)
Potential Site Impacts (to Groundwater)

Solution

• Understand potential impacts to better prepare & manage
  • Project budgets
  • Project schedules
  • Regulatory involvement/acceptance

• Execute a strategic planning approach
  • Multi-phased approaches that anticipates possible outcomes
  • Implement evaluation phase prior to investigations

• Seek a balance between risk management and project development
Availability and Cost of Materials (borrow soils)

Borrow Source Factors:
- Soil Availability and Quality
- Transportation

Note:
One of the largest costs in CCP capital projects is the soil material needed for engineered soil components.
Solution

• Consider alternate materials where cost and performance factors favor the approach
  • Beneficially reusing CCP materials (review existing precedents)
  • Geosynthetics to replace engineered components

• Consider methods to reduce soil needs

• Early evaluation of potential borrow sources (and secure properties)
  • Consider quality, availability, and transportation distance
  • Consider mining and processing of on-site soft bedrock for certain soil needs

40 acres

280,000 CY+ for a 2% slope

20,000 trucks
Seismic Requirements for New Facilities and Closure

Existing facilities designed for tomorrow's standards

Existing (and new) facilities designed for lesser/other standards
New Seismic Design Requirements
(may lead to substantial stabilization systems)

Existing facilities designed for tomorrow’s standards

Existing facilities designed for lesser/other standards

F

E
Solution

- Multi-phased approach to understand impact to overall project
- As needed, conduct site-specific seismic engineering evaluations to reduce seismic factors
- Seek innovative and cost effective solutions
Inclusion of a Strategic Planning Process

Regulatory Drivers
- CCP
- ELG
- MATS

Plant / Fleet Drivers
- Age
- Efficiency
- Economic Value

Complex Planning Process - - > Make informed decisions
Solution

• Conduct Strategic Planning

• Develop an understanding of all project milestones and intersection points
  • Define the project scope and approach
  • Establish schedule milestones (including permitting) and predecessor activities
  • Estimate costs/cash flows

• Regularly discuss project status, changes, etc. (impact of related drivers)

• Involve regulatory authorities in strategic decisions
Impacts to Existing CCP Facilities

Modification to existing facilities

Complex Planning Process
Impacts to Existing CCP Facilities

Complex Planning Process

Current
Operational

Plant
Legacy Issues

Challenges
Functional Problems

Modification to existing facilities
Impacts to Existing CCP Facilities

Consider:
- Spillways
- Siting Criteria
- Capacity Requirements
- Conveyance Methods
- Capacity
- Etc.
Impacts to Existing CCP Facilities

Solution

• Define the existing facilities to allow for resolution and a review of the regulatory approach
  • Operational challenges
  • Legacy issues
  • Functional problems

• Review key decisions and impact to adjacent operations

• Strategic and early planning will anticipate impact(s)
...and Management

New CCP Streams
Solution

• Identify possible changes and explore outcomes
  • Impacts to the CCP streams characteristics
  • Evaluate management practices and the impact of changes
    • Beneficial reuse
    • Disposal source elimination
• Execute bench scale and field scale testing
• Explore all options
Understanding the challenges will help to prepare to navigate past each, but
• Planning
• Preparation
• Evaluation of “big picture” will assist in all areas.

Summary

Regulatory uncertainty
(“Regulatory Purgatory”)

Wastewater management and treatment

Adherence to schedules

Potential site impacts

Experienced team members

Seismic requirements for new facilities and closure

Availability and cost of materials

Inclusion of a strategic planning process

Impacts to existing CCP facilities

Changes to CCP and Management
Questions & Answers

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