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Coal Combustion Residuals: Understanding the Final Rule and Next Steps for Electric Utilities

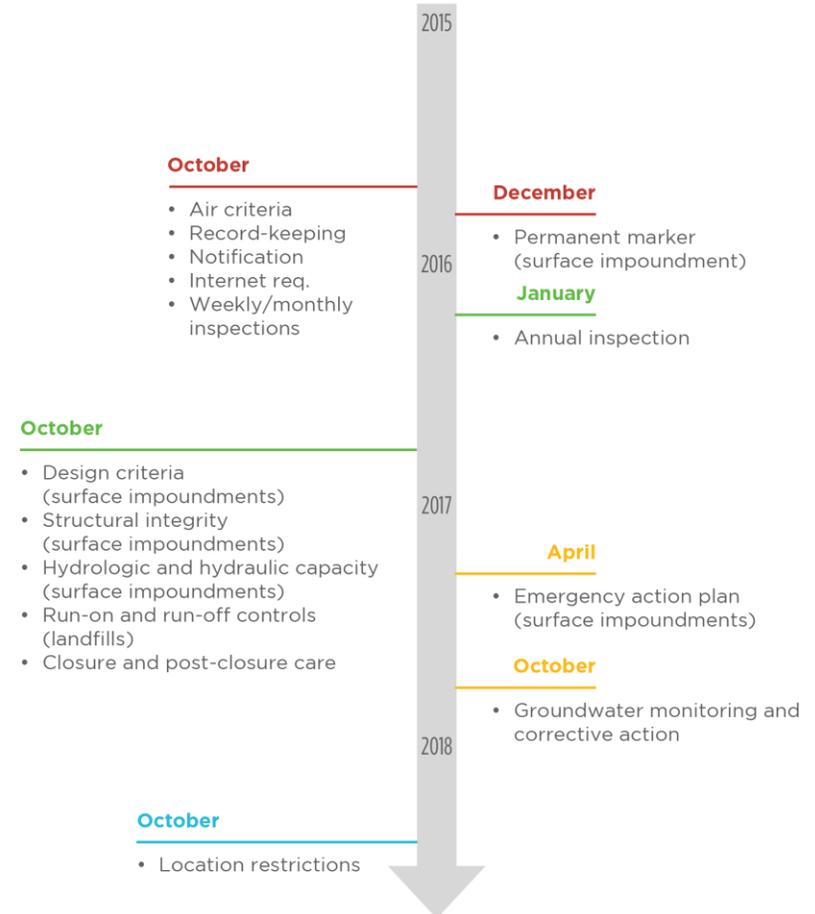
November 2015

EPA Publishes Its Long-Awaited Final CCR Rule

EPA publishes its long-awaited final Coal Combustion Residuals (CCR) rule, but spares CCRs “hazardous” treatment

- Originally proposed in July 2010 and previewed in December 2014, EPA formally published its final CCR rule in April 2015
- The rule regulates the disposal of CCRs from active electric generating units as nonhazardous waste under Subtitle D of the Resource Conservation and Recovery Act. The rule becomes effective October 14, 2015
 - Hazardous waste classification would have increased costs by an estimated \$10B to \$15B per year
- The final rule establishes minimal national criteria for CCR landfills and CCR surface impoundments. Sites must retrofit or close if they fail to meet criteria established by the new rule. Specific criteria include:
 - Location restrictions
 - Structural integrity requirements
 - Liner design criteria
 - Groundwater monitoring and corrective action requirements
 - Operating criteria (e.g., fugitive dust)
 - Closure and post-closure care requirements
 - Recording, notification, and internet posting requirements

A Tall Order: Timeline of Implementation Deadlines



In order to comply, owners and operators will need to:

- Develop a **formal compliance strategy** and execute plans to meet requirements by the EPA deadlines in a way that adequately demonstrates compliance
- Establish **organizational infrastructure to govern and oversee ongoing compliance responsibilities**, thereby fixing the lack of organizational oversight that led to the current situation and need for EPA rule

Overview

Develop Compliance Strategy and Organizational Capabilities

Develop an effective CCR compliance strategy: “quickly fix the problem and/or demonstrate compliance”

- A CCR compliance strategy should use the following process to develop a compliance strategy (see figure to the right)
- The compliance strategy should result in a master strategy for each site that:
 - Identifies all planned activities to address long-term ash handling and storage requirements
 - Identifies key coal combustion product activities and associated timing, anticipated ash production levels based on the generation plan, facility capacity limits, and amounts planned for marketing
 - Provides an effective communication tool for plant-level strategy at a glance and a mechanism for issue and/or gap identification in planned project dates

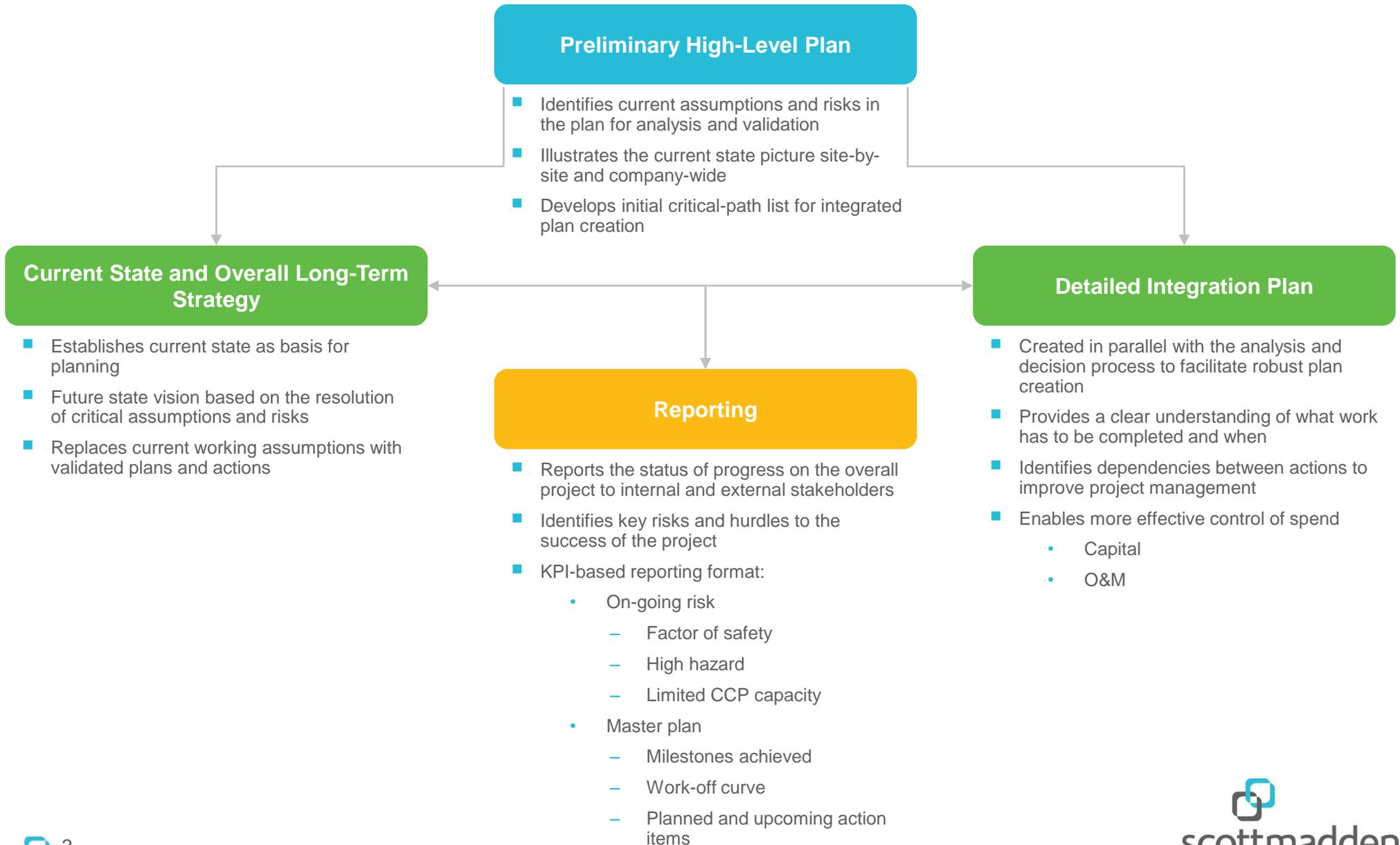


Develop organizational infrastructure: “fix the underlying gaps in oversight that could lead to problems down the road”

- In addition to a compliance strategy, organizational capabilities must be developed to ensure effective, ongoing oversight by using the following steps:



Approach for Integrated Plan Creation

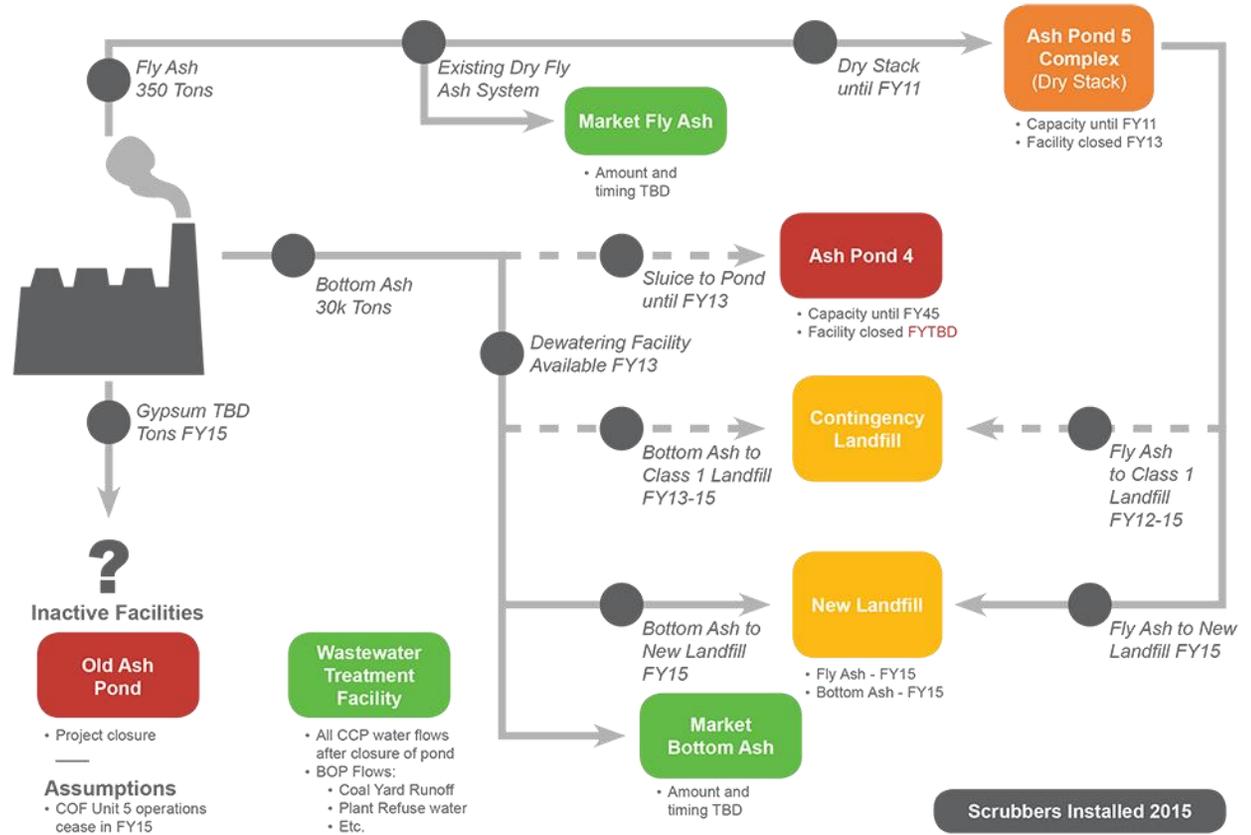


Overview of Master Strategies Document

Potential Improvements

- CCP Streams (charcoal circles)
 - Type
 - Amount produced
- Generation Considerations (assumptions)
 - Unit shutdowns
 - CCP mixture (e.g., % ash and % gypsum from scrubber)
- Marketing Plans (green boxes)
 - Annual amount
- Disposal Plans (yellow and orange boxes)
 - Disposal facility type (e.g., pond, dry stack, landfill)
 - Capacity of disposal site (FY)
 - Closure date of facility
- Future Clean Air Plans (2015 installations)
 - Scrubbers
 - Coal Mix

Schematic View of the Overall Plan for Each Site
(Including Disposition Strategy and High-Level Timing)



Potential Improvements

- Developed for each plant to identify all planned activities related to addressing long-term ash handling and storage requirements
- Identifies key CCP activities and associated timing, anticipated ash production levels based on the generation plan, facility capacity limits, and marketing plan amounts
- Effective communication tool for the plant-level strategy at a glance and a mechanism for issue and/or gap identification in planned project dates
- Must be maintained and aligned with capital plan and project schedules

CCR Expertise



COAL COMBUSTION RESIDUALS

Large Federal Utility Coal Combustion Product Remediation

ScottMadden supported a progress assessment of the coal combustion product (CCP) remediation efforts being performed by a large federal utility focused on converting all coal generation ash ponds from wet- to dry-storage facilities. ScottMadden's focus included identifying critical tasks associated with all CCP projects and defining high-level CCP strategies for all fossil sites. ScottMadden also assisted with the identification and integration of cross-team dependencies (e.g., environmental operations and maintenance, capital projects group, etc.)

Large Investor-Owned Utility Coal Combustion Product Change Management Support

ScottMadden assisted a large investor-owned utility build a CCP department by developing a comprehensive training plan and implementation plan. The plan was designed to ensure that training materials, venues, and schedules ensured that personnel were trained prior to assumption of operational control. The training plan was role based and customized to the specific positions in the organization. In addition, ScottMadden developed an implementation plan for training activities and communications.

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