



CCR & ELG Rule Revisions: Impacts on Plant Operations and Related Challenges

USWAG CCR Workshop
Crystal City, VA
9-10 August 2022

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AGENDA

- CCR Rule Developments
 - Regulatory Timeline
 - Pending Issues
- ELG Rule Developments
 - Regulatory Timeline
 - Pending Issues
- Operating Considerations



The information in this presentation is not legal advice and is not intended as legal advice.



Coal Combustion Residuals Rule

Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule– 40 CFR Part 257 (CCR Rule)

2 years later – we are still here

Milestone	Date
Proposed CCR Rule Published	2010 ✓
Final CCR Rule Published	2015 ✓
Final Rule: Partial Vacatur – Inactive Impoundments	2016 ✓
Final Rule: Phase One, Part One	2018 ✓
Final Rule: Holistic Approach to Closure Part A	2020 ✓
Final Rule: Holistic Approach to Closure Part B	2020 ✓
The Next round of CCR Rulemakings	2022-23 ???





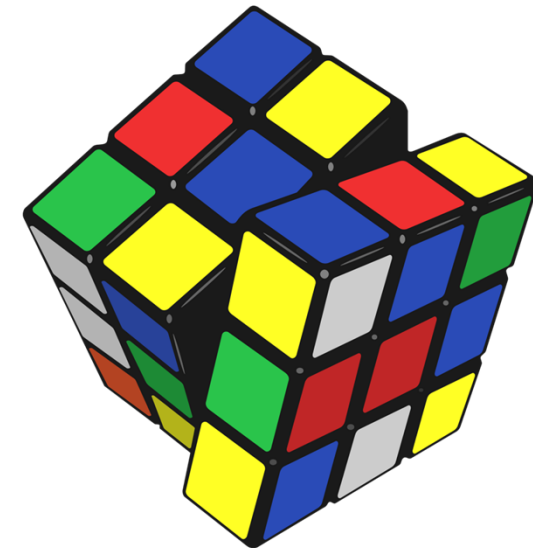
Pending Actions: CCR Proposed Rules, WIIN Act, Challenges





Pending Actions: CCR Proposed Rules, WIIN Act, Challenges

Action	Initiated	Potential Rulemaking
Water Infrastructure Improvements for the Nation (WIIN) Act (re: CCR permit programs)	2016	Permit Program
Proposed Rule: Phase One	2018	
Proposed Rule: Reconsideration of Beneficial Use Criteria and Piles and Boron GWPS	2019	TBD
Proposed Rule: Federal CCR Permit Program	2020	10/2022
Proposed Rule: Holistic Approach to Closure Part B	2020	9/2022 → 3/2023
Advanced Notice of Proposed Rulemaking - Legacy CCR Impoundments	2020	Proposed 11/2022 Final 11/2023
Initial EPA Responses to Part A Extension Applications	Jan 2022	TBD
Challenges to EPA Part A Responses	April 2022	TBD





2022 EPA Part A Proposed Responses

Disposal Unit Closure Extension Applications

52 Applications

- 47** Administratively complete
(required information provided)
- 1** N/A “Ineligible”
- 4** Incomplete

Round 1 EPA Reviews & Proposed Decisions 1/11/2022

EPA Technical Review

4 Initial Determinations To Date

- 3** Denied
- 1** Conditional approval

2 Subsequent Determinations

- 2** Conditional approval (7/12/2022)

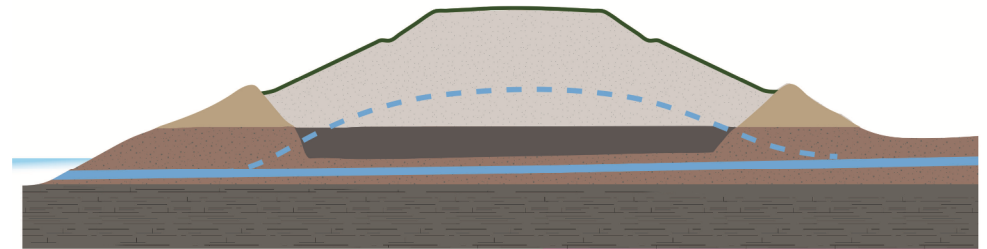
Additional Letters issued 1/11/2022



2022 EPA Part A Proposed Responses & Letters

Key Compliance Issues

1. Closure Plan Insufficiency
2. Closure in Place Performance Standards
 - Removal of free liquids
 - Infiltration
3. Groundwater Monitoring Program Adequacy
 - Monitoring System
 - ASDs: Lines of Evidence
4. Corrective Action
 - MNA: Dilution and Dispersion
 - ACMs: Characterization and Data
 - Selection of Remedy: As Soon As Feasible
5. CCR Beneficial Reuse in Closure
6. “Inactive” CCR Surface Impoundments
7. Infrastructure over Closed Impoundments





Pending CCR Rulemaking Issues

- Federal Permit Program
- Boron: App IV & GWPS
- Risk based elements (if no MCL)
- Use of CCR during closure
- Beneficial use revisions
- Legacy units



Compliance decisions have to be made!



Steam Electric Power Generating Effluent Limitation Guidelines

Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category – 40 CFR Part 423 (ELGs)

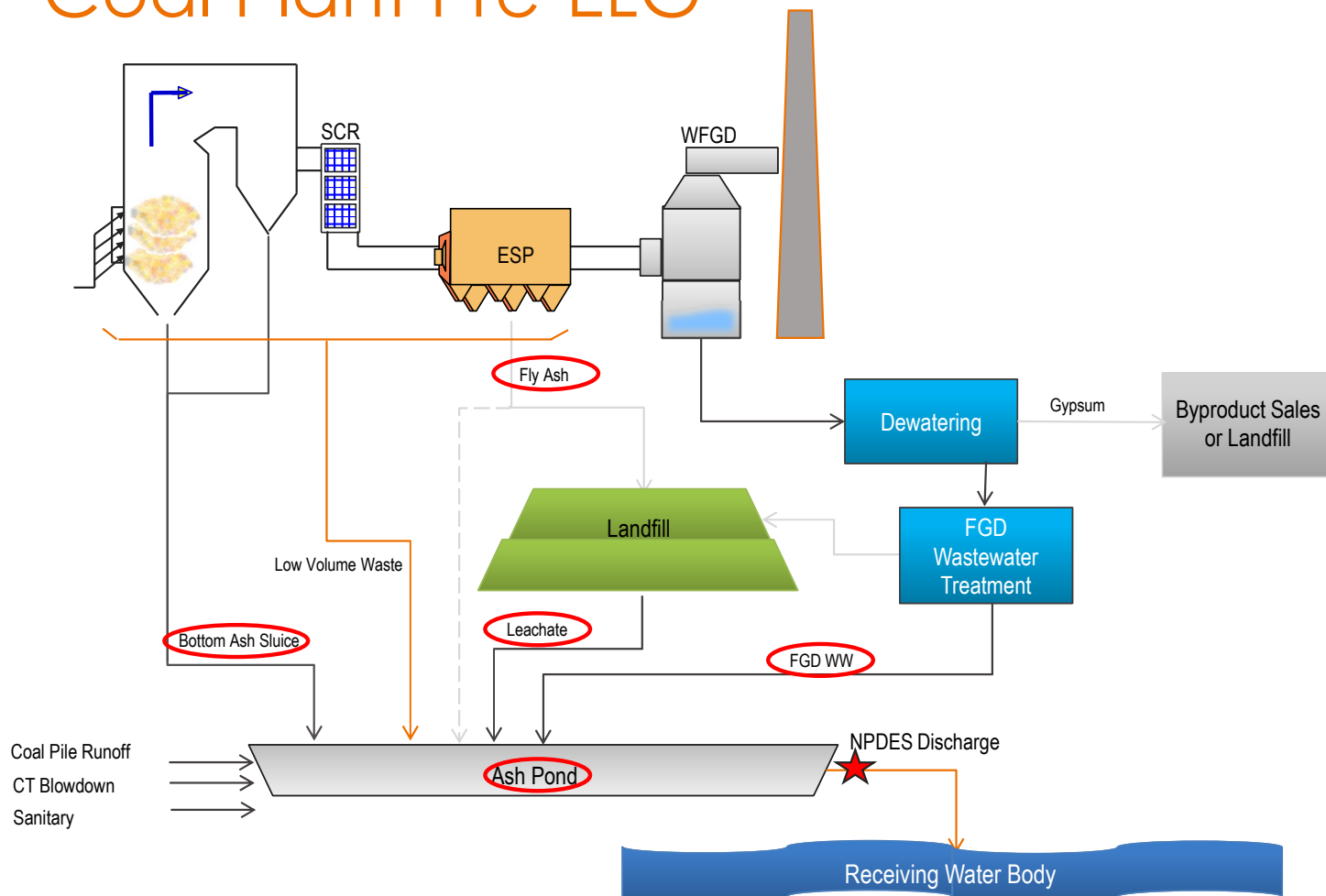
First published in 1982

Milestone	Date
Proposed Revision Published	2013 ✓
“Final” Rule Published	2015 ✓
Portions Postponed	2017 ✓
Proposed Revision Published	2019 ✓
“Final” Rule Published	2020 ✓
Reconsideration	2022 ???
The Next “Final” Rule Published	2023 ???





“Typical” Coal Plant Pre-ELG





Steam Electric Power Generating Effluent Limitation Guidelines

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Proposed Revision Published	2013 ✓
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- Landfill Leachate
- Legacy Wastewaters

2021 ELG Revisions



EPA 2021 Reconsideration of ELGs

- EPA directed to review regulations issued within the past four years to ensure they are aligned with science, adequately protect the environment, and provide equal protection to minority or low-income communities (Exec. Order 13990, 1/20/21)
- EPA announced intent to issue a proposal to revise the ELGs for FGD and BATW if warranted
- EPA to reconsider whether ELGs for FGD and bottom ash transport water are sufficiently stringent or if appropriate to modify

2021 ELG Revisions



EPA 2021 Reconsideration of ELGs

- EPA to address whether membrane technology should be BAT for FGD wastewater instead of phys-chem + bio + UF
- EPA to review the three subcategories (low utilization, retirement, and high flow for FGD systems) to determine if revision needed
- Notice of proposed rulemaking scheduled for Fall of 2022
- During notice and rule making the 2020 ELGs continue to be applicable



Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category (Steam Electric ELG)

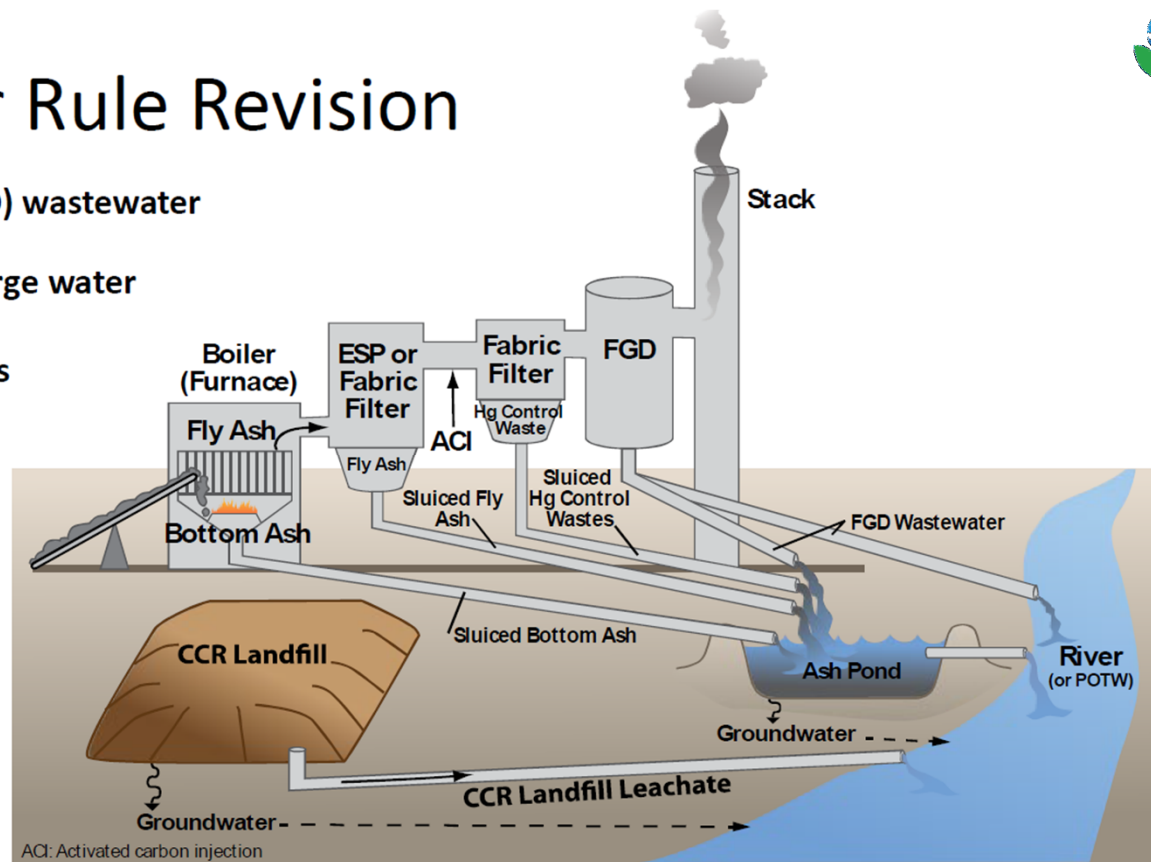
Federalism/UMRA Consultation Meeting
January 27, 2022

<https://youtu.be/Qbyasom1-38>



Key Areas for Rule Revision

- 1) Flue Gas Desulfurization (FGD) wastewater
- 2) Bottom ash transport and purge water
- 3) Leachate from ash/FGD ponds and landfills
- 4) Legacy wastewaters (i.e., those generated before the new limitations go into effect)
- 5) Subcategories (i.e., facilities receiving less stringent limitations)





Key Areas for Rule Revision: *Flue Gas Desulfurization Wastewater*

New Considerations

- Zero-discharge requirement based on membrane filtration and/or thermal treatment.
- Appropriate timing for implementation of potentially more stringent limitations.

Environmental Benefits

- Removal of pollutants remaining after implementation of 2020 rule
 - Toxic pollutants such as mercury, arsenic, selenium, lead, and thallium, and
 - Salts (e.g., bromide, fluoride, boron) which can impact downstream drinking water treatment plants by generating toxic disinfection byproducts,
 - Nutrients (e.g., nitrogen) which impact downstream drinking water sources, bays and estuaries, and associated fisheries



Key Areas for Rule Revision: *Bottom Ash Transport Water*

New Considerations

- The ELG will now set zero discharge requirements based on dry handling and closed loop circulation systems
- Tighter limits for site-specific purges based on high recycle rate systems.
- Appropriate grace periods for implementation of potentially more stringent limitations.

Environmental Benefits

- Decreasing or eliminating the allowable purge would result in a reduction in remaining toxic pollutants, salts and nutrients found in bottom ash transport water (the list is similar to FGD wastewater).



Key Areas for Rule Revision: *Combustion Residual Leachate*

Several Possible New Considerations

1. Zero-discharge requirement based on membrane filtration and/or thermal treatment.
2. Numeric limitations based on chemical precipitation treatment.
3. Grace period for implementation of potentially more stringent limitations.

Several Possible Environmental Benefits

1. Installing zero discharge technologies will remove toxic pollutants, salts and nutrients found in combustion residual leachate.
2. Installing chemical precipitation will only remove some toxic pollutants.
3. More stringent limitations will remove more toxic pollutants.



Key Areas for Rule Revision: *Legacy Wastewater*

Several Possible New Considerations

1. Zero-discharge requirement based on the performance of membrane filtration and/or thermal treatment.
2. Numeric limitations based on chemical precipitation.
3. Appropriate timing for implementation of potentially more stringent limitations.

Several Possible Environmental Benefits

1. Installing zero discharge technologies will remove toxic pollutants, salts and nutrients.
2. Installing chemical precipitation will only remove some toxic pollutants.
3. More stringent limitations will remove more toxic pollutants.



Key Areas for Rule Revision: *Subcategories*

New Considerations

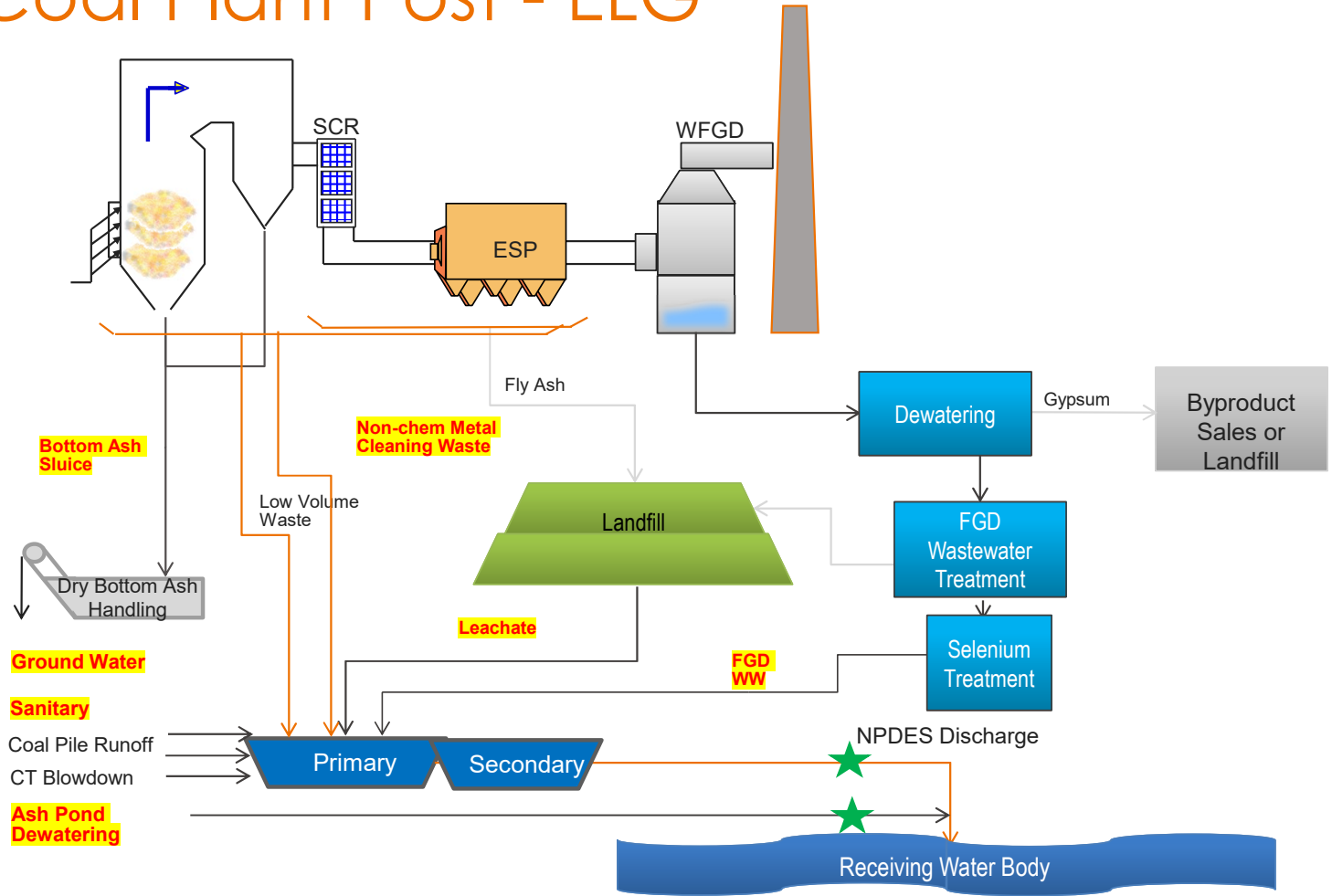
- Removal of any/all of the subcategories.
- Modification of the permanent cessation of coal combustion subcategory.

Environmental Benefits

- More stringent technologies will remove toxic pollutants, and salts and nutrients found in these various wastewaters.
- Incentivizing further retirements and fuel conversions could reduce pollution of surface water, groundwater, land, and air.

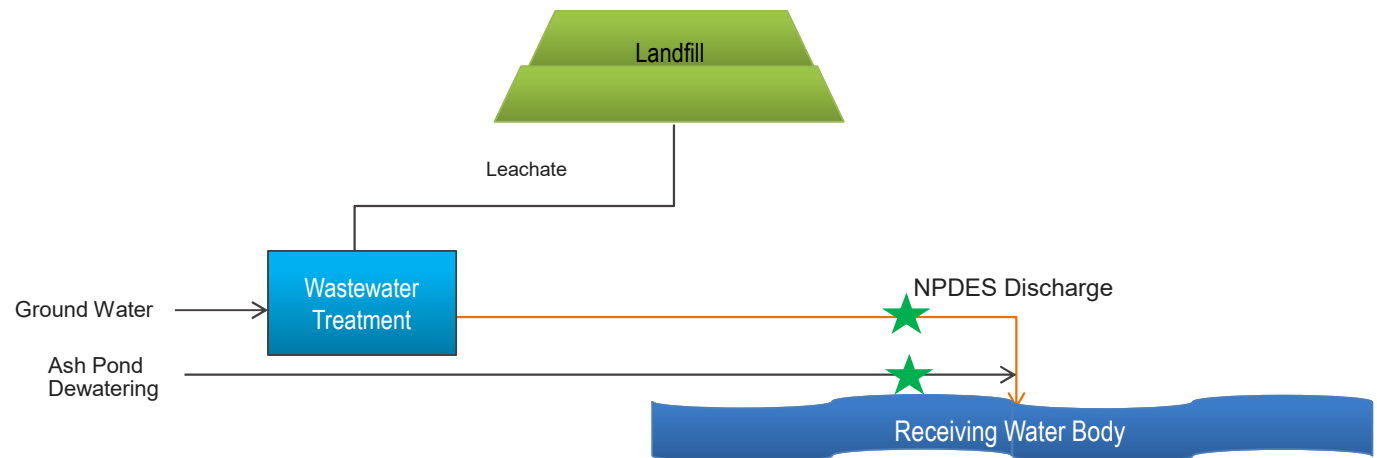


“Typical” Coal Plant Post - ELG





“Typical” Coal Plant post Reconsideration?





West Virginia vs. EPA

Holding: Congress did not grant the Environmental Protection Agency in [Section 111\(d\) of the Clean Air Act](#) the authority to devise emissions caps based on the generation shifting approach the agency took in the Clean Power Plan.

Issue: Major Questions Doctrine. Administrative agencies must be able to point to “*clear congressional authorization*” when they claim the power to make decisions of vast “*economic and political significance*.”

Ramifications: May cause EPA (and other federal agencies) to attempt more creative regulatory enforcement through policy guidance interpretations.



Times Have Changed

- Has your **sanitary package plant** been adequately maintained? A 10 acre basin does not provide the same dilution as a 300 acre pond.
- **Minimize water usage.** It used to be relatively free. Now there is a real cost per 1000 gal treated. Know the cost and share with management to help guide decision making.
- Does everything need to be cleaned with a fire hose? Can water be recycled or repurposed?
- What is your CCR impoundment operational timeline and associated alternatives?





...And Will Keep Changing

- Do you need to treat **Ground Water**? In-situ or ex-situ? Is your monitoring program adequate? Boron?
- What about **Leachate**? Can it be minimized or co-treated? For how many decades?
- Has **Ash Pond Dewatering** been completed?
- Where do contract vs. staffed operations make sense? Mobile vs. permanent?
- What about **Zero Discharge** technologies?
- Status of closed and other maintained impoundments?





The Challenge

- Regulatory Uncertainty – Moving Target
- Changing Timelines for Compliance
- Limited Available Capital
- Limited Staff
- Extremely Low Discharge Limits
- Limited Operations Budgets
- Short Life Cycle
- Politically Driven Regulations
- Public Scrutiny





Work Together

Internally

- Operations
- Environmental Permitting
- Regulatory Policy
- Engineering
- Strategic Planning
- Legal Counsel

Externally

- Industry Groups (EPRI, EEI, UWAG, USWAG)
- Regulatory Authorities (State & Federal)
- Utility Working Groups



Be Prepared

- Read the rule as a complete document, 40 CFR Part 257 & 423
- Assess your existing compliance strategy related to pending issues
- Educate leadership
- Collect data
- Know what it is that you want/need (dates/limits)
- Communicate, educate and support your local regulatory authority
- Do not wait
- Develop contingency plans





Communicate – Educate – Coordinate
Holistically



QUESTIONS?

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