NEXUS
Water and CCRs

CIBO

Energy and Environmental Meeting

March 22-23, 2016

Arlington, Va.

Areas to be covered

- RCRA – Proposed Rule - Hazardous Waste Generator Improvements
  - Proposed Rule Published in Federal Register on Sept. 25, 2015
  - Comment Period Closed December 24, 2015.
- NEXUS with Water and Coal Combustion Residuals at the State and Federal Level Revisited
  - Federal Programs vs State Programs
    - Water Quality Standards
    - NPDES Permit
    - CCR Rule
    - Groundwater
      - Drinking Water Standards
      - Brownfield Remediation Standards

Hazardous Waste Generator Improvements Rule

- **Federal Register** / Vol. 80, No. 186 / Friday, September 25, 2015 / Proposed Rules, pp 57918 – 58012
- Comment period ended Dec.24, 2015
- To be finalized in2016
- See website: https://www.epa.gov/hwgenerators/proposed-rule-hazardous-waste-generator-improvements

Goals of the Proposed Rule

- The 2015 HW Generator Improvements Proposed Rule seeks to—
  - 1.Reorganize the regulations to make them more user-friendly and thus enable improved compliance by the regulated community
  - 2.Provide greater flexibility for hazardous waste generators to manage waste in a cost-effective manner
  - 3.Strengthen environmental protection by addressing identified gaps in the regulations
  - 4.Clarify certain components of the hazardous waste generator program to address ambiguities and foster improved compliance

Overview of changes

- Allowing small quantity generators to avoid a higher generator status when generating episodic waste
- Allowing conditionally exempt small quantity generators (CESQGs) to send hazardous waste to a large quantity generator (LQG) that is under the control of the same person, provided certain conditions are met;
- Allowing generators to apply for a waiver from the "50 feet requirement" (containers holding ignitable or reactive waste must be placed 50 feet from the site's property line) from their local fired department or emergency response organization;
- Replacing the term "conditionally exempt small quantity generator" (CESQG) with the phrase "very small quantity generator" (VSQG) to be consistent with the other two categories of large and small quantity generators (LQGs and SQGs)

Overview (continued)

- Reorganizing the regulations to make them more user-friendly
- Increasing communication about hazardous waste with emergency responders – for example, requiring executive summaries
- Requiring biennia reporting for owners or operators of facilities tht recycle but do not store hazardous waste before recycling
- Requiring re-notification by SQGs and LQGs every two years

Overview (continued)

- Revising the regulations for making hazardous waste determinations – the proposed rule would require LQS, SQGs (and possibly CESQG) to keep detailed records not only for waste determined to be hazardous but also wastes determined not to be hazardous; both the initial determination if the waste is solid or not, and also if the waste "changed in property"
- Revising the regulations for labeling and the marking of containers, tanks, drip pads, containment buildings when accumulating hazardous waste. EPA is proposing to revise the marking and labeling standards for transporters to be consistent with the proposed marking and labeling standards for containers for SQGs, LQGs, and satellite accumulation areas
- Revising the closure provisions for LQGs
- Revising biennial reporting provisions to specifically include facilities receiving hazardous wastes without a permit, such as reclaimers that do not store incoming materials and reclaimers operating under a variance

Stay Tuned

- Revising the regulations for making hazardous waste determinations – the proposed rule would require LQS, SQGs (and possibly CESQG) to keep detailed records not only for waste determined to be hazardous but also wastes determined not to be hazardous; both the initial determination if the waste is solid or not, and also if the waste "changed in property"

- This aspect of the proposed regulation could open up the rules on how wastes are from a long-term perspective is reopening the hazardous waste rules relative to waste classification! Not now but the future!

The CCR-Water Nexus

- EPA's developed two rules to address CCRs from EGUs
  - 40 CFR Part 423 - Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category
  - 40 CFR Parts 257 and 261 Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities
- These rules along with existing programs is creating a NEXUS tied to interrelationships of water and waste. In this case, water and coal combustion residuals

Effluent Limitation Guidelines for EGUs

- ELG address the issues dealing with water management dealing with coal combustion residuals (fly ash, bottom ash, and flue gas desulfurization residuals)
- Developed criteria related to discharged of leachate from coal combustion residual landfills.
- Criteria to minimize waste water discharges from EGUs
- Overall design is to push for zero discharge of waste water from EGUs including their CCR management programs

Areas related to water

- Clean Water Program
  - Water Quality Standards
  - NPDES Program
  - ELGs
  - Groundwater
- Federal Implementation vs State Implementation

Areas

- Stream Quality Standards
  - Triennial Review
  - Establishes Water Quality Standards to protect streams and their use
- NPDES Program
  - Triennial Review
  - Establishes Water Quality Standards to protect streams and their uses
  - The EPA continues to upgrade the information needed relative to the water balance at a plant including not only quantity but quality (with an ever expanding list of analysis)
  - Uses EGLs to establish minimum treatment levels
  - However, may establish more stringent effluent limits to insure water quality standards are protected
    - Results in Best Professional Judgement being used to establish effluent limits to meet stream quality standards and in the absences of ELGs for certain aspects of the Facilities water handling and water treatment.
    - To the extent that another industrial sector has had ELGs developed to manage certain waste streams (i.e., ELGs for EGUs for CCRs) is used by the NPDES Writer and Certain Groups to push for more stringent effluent limits

Treatment

- National regulations for industrial wastewater discharges set technology-based numeric limitations for specific pollutants at several levels of control:
  - BPT- Best Practicable Control Technology Currently Available
  - BAT – Best Available Technology Economically Achievable
  - BCT – Best Conventional Pollutant Control Technology
  - NSPS - New Source Performance Standards
  - PSNS - Pretreatment Standards for New Sources*
  - PSES - Pretreatment Standards for Existing Sources*

(*Discharges to Public Owned Treatment Works

Discharges regulated via

Type of Sites Regulated	BPT	BCT	BAT	NSPS	PSES	PSNS
Existing Direct Dischargers	•	•	•			
New Direct Dischargers				•		
Existing Indirect Dischargers					•	
New Indirect Dischargers						•

Pollutants Regulated via

Pollutants Regulated	BPT	BCT	BAT	NSPS	PSES	PSNS
Priority Pollutants	•		•	•	•	•
Conventional Pollutants	•	•		•		
Nonconventional Pollutants	•		•	•	•	•

Water Nexus Summary

- Permit Writer must insure that the discharges will not result in water quality violation.
- If there is a potential water quality violation, the Permit Writer would impose more stringent effluent limits requiring additional treatment based on water quality based effluent limits.
- In addition, if there is no control criteria established to address discharges from coal combustion residual impoundments and/or landfill, the Permit writer can impose effluent limits based on Best Professional Judgement.

Water Nexus Summary

- EGL for EGUs points to the fact that most of the CCR damage cases were related to wet handling systems with discharges o impoundments
- This point and the ELG for EGUs relative to CCRs opens the door on other industrials CCR water quality related permits

The Waste Nexus

- State vs Federal
  - RCRA Subtitle D Program
    - Open Dumps
    - Focus on Coal Combustion Residuals regulations
    - CCR Impoundments
      - Groundwater Monitoring and Abatement
      - Site Closure
  - Citizens Suits
    - EPA encouraging citizens suits
    - Suits directed at Companies with CCR Impoundments
    - Use the lack of State Enforcement to have EPA and Congress revisit the rule
    - (next year, 4 or 8 years, or use as a tool to make managing CCRs to be to expensive!
    - Next Phase will be to go after CCR landfills and attempt to use the "open dump" aspects of the rule!

Impoundments Lawsuits – A Major Driver

- Besides going after CCR impoundments to have them eliminated, the other aspects of the litigation will be forcing NPDES Permit modifications for CCR Impoundments, and forcing comprehensive groundwater monitoring systems with the potential for groundwater remediation.

Coal Combustion Residuals

- Subtitle D
  - EPA's final rule to regulate the disposal of coal combustion residuals (CCR) as solid waste is under ***Subtitle D*** of the Resource Conservation and Recovery Act (RCRA).
  - (Note-The Subtitle C battle is not over. It is just put on hold for the present.)
- What are coal Combustion Residuals?
  - **Coal combustion residuals** (CCR) means fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by **electric utilities and independent power**. **producers**

Minimum National Criteria

- EPA establishes national minimum criteria for
  - existing and new CCR landfills;
  - existing and new CCR surface impoundments; and
  - all lateral expansions.

The Criteria

- The criteria consists of:
  - location restrictions;
  - design and operating criteria;
  - groundwater monitoring and corrective action;
  - closure requirements and post closure care; and
  - recordkeeping, notification, and ***internet posting requirements***.

Requirements

- The rule requires
  - any existing unlined CCR surface impoundment that is contaminating groundwater above a regulated constituent's groundwater protection standard to stop receiving CCR and either retrofit or close, ***except in limited circumstances***.
  - the closure of any CCR landfill or CCR surface impoundment that cannot meet the applicable performance criteria for location restrictions or structural integrity.
  - ***those CCR surface impoundments that do not receive CCR after the effective date of the rule, but still contain water and CCR will be subject to all applicable regulatory requirements, unless the owner or operator of the facility dewaters and installs a final cover system on these inactive units no later than three years from publication of the rule.***

Closer Look at the Final Rule

Open Dump

- **§ 257.1 Scope and purpose.**
  - * * * Unless otherwise provided, the criteria in §§ 257.50 through 257.107 are adopted for determining which CCR landfills and CCR surface impoundments pose a reasonable probability of adverse effects on health or the environment under sections 1008(a)(3) and 4004(a) of the Act.
    - (1) Facilities failing to satisfy any of the criteria in §§ 257.1 through 257.4 or §§ 257.5 through 257.30 or ***§§ 257.50 through 257.107*** are considered open dumps, which are prohibited under section 4005 of the Act.
    - (2) Practices failing to satisfy any of the criteria in §§ 257.1 through 257.4 or §§ 257.5 through 257.30 or ***§§ 257.50 through 257.107*** constitute open dumping, which is prohibited under section 4005 of the Act.

Groundwater Monitoring & Corrective Action

- Within 30 months after publication of the final Rule, owners and operators of CCR units will: install a professional engineer-certified groundwater monitoring system, develop a sampling and analysis program including statistical analysis methods, define background and downgradient groundwater quality, initiate detection monitoring (eight independent sample events), and begin evaluating groundwater monitoring data.
- By the end of the 30-month period, the professional engineer-certified groundwater sampling plan and statistical analysis of results are required to be ***posted on the facility's public website***.

Groundwater Monitoring & Corrective Action

- The groundwater monitoring system consists of two elements: Detection Monitoring and Assessment Monitoring.
- If detected monitoring parameters are measured at a "statistically significant level over the established background concentrations," the owner or operator of the CCR disposal unit must notify the relevant state regulatory authority, conduct assessment monitoring, and, if necessary, initiate corrective action responses.
- ***Post closure will require a minimum of 30 years of ground water monitoring***.

Closure & Post-Closure Care

- Closure and post-closure requirements are effective 18 months after the Rule publication. Closure of a CCR unit is triggered in one of three ways:
- 1. When a CCR unit receives the known final waste shipment or when the owner or operator removes the known final volume of CCRs from the unit for the purposes of beneficial use, closure must begin ***within 30 days*** of such receipt or volume removal.
- 2. For "Idled Units" (where the unit has remaining storage capacity or where there has been a temporary suspension of removal activities), closure is required ***two years*** after the most recent receipt of CCRs or the last removal for beneficial use, whichever is later.
- 3. When a unit fails to meet certain technical criteria (for example, if any CCR unit fails to meet location criteria; if an unlined surface impoundment has a groundwater exceedance of Appendix IV constituents, or if a surface impoundment fails to meet the safety factor requirements), closure must be initiated within ***six months*** under any of these conditions.

Closure & Post-Closure Care

- The Rule provides timing requirements for closure of landfills and surface impoundments.
- Landfills must complete closure within six months of commencing closure and surface impoundments must complete closure within five years of commencing closure.
- There is some flexibility in the Rule for potential

Closure & Post-Closure Care

- The final rule establishes requirements for the closure of existing CCR disposal units
  - (a) in the event of the failure to meet technical criteria;
  - (b) after receipt of the known final waste shipment or removal of the final volume of CCRs from the unit for beneficial use; or
  - (c) two years after the most recent receipt of CCRs or two years after the most recent removal of CCRs for the purpose beneficial use.
  - Closure must be achieved by removing the CCRs and decontaminating the unit or by leaving the coal ash in place and installing a final cover system. Groundwater monitoring programs and corrective actions (if necessary) are required to continue after closure.

Closure & Post-Closure Care

- Closure shall include adding a note to the property deed that CCR is present.
- Post closure will require a minimum of 30 years of ground water monitoring.

Inactive Landfills

- The requirements of the Rule do not apply to inactive CCR landfills, which are defined as CCR landfills that do not accept waste after the effective date of the regulations.

Inactive Impoundments

- An owner or operator of an inactive CCR surface impoundment that completes closure and meets all of the requirements in §257.100 [Inactive CCR Surface Impoundments – Closure and Post-Closure Care] within ***36 months*** after date of publication, is exempt from all other requirements in the Federal Rule.
- CCR surface impoundments that do not receive CCR after the effective date of the Rule, but still contain water and CCR, will be subject to all applicable regulatory requirements, unless the owner or operator of the facility dewaters and installs a final cover system on these inactive units ***no later than three years*** from publication of the Rule.

Inactive Impoundments

- States may provide their own guidance and requirements for inactive closure.
- f the owner of an inactive surface impoundment elects to close under §257.100 of the Rule, notification must be provided within eight months from the date of publication in the Federal Register, and the means of closure must be defined.
- Inactive units can elect to close by leaving the CCR in place or by removing and decontaminating all areas affected by releases from the CCR surface impoundment (including the liner).
- If the owner or operator of the CCR surface impoundment fails to complete closure of the inactive CCR surface impoundment within the 36 month timeframe, the CCR unit must comply with all of the requirements applicable to existing CCR surface impoundments.

Closure of Impoundments

- Concerns to be addressed
  - Is the impoundment and open dump?
  - Are there surface and ground water quality impacts?
  - Is a Surface and Ground Water Monitoring Program required?
  - How do you insure long term structure stability?
  - What are the surface water runoff controls to insure no erosion problems develop?
    - This means controlling runoff from the reclaimed surface area as well as he outslopes
  - Is there a need for a top liner to prevent infiltration?
  - Do you have adequate cover to protect the surface (including liners) and will sustain vegetation?
  - What is the timing of closure?

NEXUS Problems

- Citizens Suits – Beware
- CCR Regulation (open Dump Definition)
- State Program adopts Federal Program or a hybrid based on their existing regulations with minor tweaks
- Using the Water Program to force closure by driving compliance costs higher
- Providing permit writers concerns to minimize lawsuits from citizens group

QUESTIONS