



Coal Combustion Residuals (Coal Ash)

Coal Combustion Residuals (CCR) Closure Plan

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Introduction

Coal combustion residuals (also called coal ash) are produced primarily from the burning of coal in coal-fired power plants. Coal ash contains metallic compounds, and it is disposed of or used in different ways. Some power plants may dispose of it in surface impoundments or in landfills. Coal ash may also be beneficially reused as an ingredient in products like concrete or wallboard.

Disposal of coal ash is regulated under state rules and/or federal regulations. Many facilities have multiple coal ash management units, such as surface impoundments or landfills. These units are subject to requirements under state rules, and some are subject to requirements under federal regulations as well. In many cases, the Indiana Department of Environmental Management (IDEM) and the subject facilities are working to address compliance with the applicable rules and regulations in a comprehensive, facility-wide manner since, regardless of the program under which coal ash is governed, the constituents of concern are the same.

Indiana State Rules for Coal Ash

IDEM's current solid waste program regulates disposal of coal ash in restricted waste site (RWS) landfills under the rules in the Indiana Administrative Code (IAC) at 329 IAC 10. IDEM's solid waste program does not regulate coal ash surface impoundments that are subject to a National Pollutant Discharge Elimination System (NPDES) permit except to the extent they are also subject to 40 CFR 257, Subpart D (see 329 IAC 10-3-1(8)). The final disposal of solid waste in all surface impoundments is subject to IDEM approval under 329 IAC 10-3-1(9). Coal ash surface impoundments may also be subject to additional state and federal regulation as discussed below.

Federal Regulations for Coal Combustion Residuals

To address risks from disposal and discharge of coal ash, the U.S. Environmental Protection Agency (U.S. EPA) established federal regulations for the disposal of coal combustion residuals (CCR). On October 19, 2015, a new U.S. EPA regulation titled Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments became effective. These regulations apply to electric utilities and independent power producers that manage or dispose of CCR in landfills and surface impoundments after enactment of the regulations. Regulations governing CCR can be found in the Code of Federal Regulations (CFR) at 40 CFR 257, Subpart D. The CCR regulations were originally written to be "self-implementing" for purposes of federal law because U.S. EPA was not authorized to enforce the program. This changed in 2016 with Congress's passage of the Water Infrastructure Improvements for the Nation Act (WIIN Act), which authorizes U.S. EPA or a state to implement a permit program to enforce CCR regulations for purposes of federal law.

Indiana Rulemaking for Coal Combustion Residuals

Effective December 10, 2016, IDEM incorporated into state law a portion of the U.S. EPA CCR regulation governing CCR surface impoundments (see 329 IAC 10-9-1(b) and (c)). Governor Eric J. Holcomb signed House Enrolled Act 1230 on February 23, 2017, which amended IC 13-19-3-3 to allow the Indiana Environmental Rules Board to adopt rules consistent with the federal CCR regulations.

For surface impoundments not subject to 40 CFR 257, Subpart D, closure is subject to IDEM approval under 329 IAC 10-3-1(9). For surface impoundments that are subject to 40 CFR 257, Subpart D, closure is also subject to IDEM approval under 329 IAC 10-9-1(c), which partially incorporates 40 CFR 257, Subpart D.

Effective April 22, 2021, Senate Enrolled Act 271 (codified at IC 13-19-3-1 and IC 13-19-3-3) directs IDEM to establish a state permit program under Section 2301 of the WIIN Act, 42 U.S.C. 6945(d), for the implementation in Indiana of the federal CCR rule for purposes of both state and federal law. IDEM has initiated rulemaking to comply with that statutory directive. The First Notice of Comment Period (LSA Document #21-458) for that rulemaking was published on October 13, 2021. The establishment of a comprehensive state-operated permit program for CCR units will replace the current partial incorporation of the federal rule at 329 IAC 10-9-1 and will be at least as protective as the federal standards at 40 CFR 257, Subpart D, for both CCR surface impoundments and CCR landfills.

Closure Plan Review Process

Indiana utilities must submit closure plans for landfills and surface impoundments to IDEM for review and approval. All closure plans will be reviewed by IDEM to determine whether they meet state and, where applicable, federal requirements and are protective of human health and the environment. Requests for additional information and revised plans will be exchanged until IDEM deems the closure plan complete. Complete closure plans will be available for review in IDEM's Virtual File Cabinet (VFC) and/or the local library. A public meeting outlining the closure plan, and a public comment period, will be scheduled as well.

Environmental Impacts

A groundwater monitoring program is required for coal ash management units subject to the state rules and/or federal regulations. Groundwater monitoring programs consist of a three-step process.

1. The first step is detection monitoring, during which the groundwater monitoring system is installed, and the system is monitored for a limited set of waste-specific parameters that can indicate a statistically significant change in the groundwater signaling a potential release.
2. If a release is determined, then the next step is assessment monitoring, during which the number of waste-specific parameters is expanded, groundwater protection standards (which include U.S. EPA's maximum contaminant levels) are established, and the vertical and horizontal extent of contamination is investigated.
3. If groundwater protection standards are exceeded, then the final step is corrective action, in which the facility develops and implements a selected remedy to contain the release and protect human health and the environment. Typical corrective measures may include closure of the unit, groundwater extraction wells, or construction of slurry walls to keep the groundwater from moving off-site, etc.

Facilities with coal ash management units subject to the CCR regulation are required by 40 CFR 257.90(e) and (f) to include in their facility operating record, and post on their facility's website, an *Annual Groundwater Monitoring and Corrective Action Report* documenting their relevant activities during the previous calendar year. These reports are to be included in the operating record no later than January 31 of each year and posted to the facility's website annually, within 30 days after the information is placed in the operating record.

IDEM is fully committed to ensuring and protecting the safety of Hoosiers' drinking water supply. If groundwater protection standards are exceeded and the proximity of drinking water wells is of concern, then expanded sampling will be implemented to determine impacts to drinking water sources.

Reducing Risk and Catastrophic Failure

To prevent the damage associated with structural failures of CCR surface impoundments, units subject to federal regulation must comply with structural integrity requirements. The regulations establish structural integrity design criteria and require owners and operators to periodically conduct a number of structural integrity-related assessments. These assessments include: structural stability; periodic safety factor assessments to document the unit achieves minimum engineering factors of safety; hazard potential classification assessments to assess the damage that could occur if there were a failure of the CCR surface impoundment; and routine inspections. Further, where there is heightened risk, facilities must develop an emergency action plan which details the actions to be taken to protect communities if there is an issue with the structural safety of the unit.

Citizen's Role

Public notices related to IDEM's review of surface impoundment closure plans, including public comment periods and final decisions, are available on IDEM's Public Notices webpage (www.idem.IN.gov/publicnotices).

329 IAC 10 governs public involvement in the closure of CCR surface impoundments and landfills. All final agency decisions are subject to appeal by the applicant or other affected parties. Details on how to file an appeal, and the timeframe within which an appeal must be filed, are included with all final decisions.

Facility Web Postings

Utilities subject to CCR regulation are required to post documents and reports to a publicly accessible website they maintain. Examples of the documents and reports required to be posted include: structural integrity of existing surface impoundments, design criteria and location restriction demonstration, emergency action plan, updates to dust controls, run-on/run-off controls, closure and post-closure care, and annual groundwater monitoring and corrective action report. Links to U.S. EPA and IDEM's websites are provided below, and links to facility-specific websites can be accessed through those webpages.

Additional Information

- To receive email or text updates every time IDEM posts new information on its CCR webpage, subscribe to IDEM updates at www.idem.IN.gov/pages/subscribe. Provide an email address or phone number and check the box for Coal Combustion Residuals (CCR) in the drop-down menu under Land.
- IDEM Virtual File Cabinet at <https://vfc.idem.IN.gov/DocumentSearch.aspx>
- U.S. EPA CCR website at www.epa.gov/coalash
- CCR facility reports at www.idem.IN.gov/waste/resources/permits-registrations-approvals-and-closures/coal-combustion-residuals/