

Division of Waste Management

Solid Waste Section

Coal-Fired Power Plants With Landfills On Site (See Figure 2):

- Catawba County (Duke Energy Marshall)
 - 1804-INDUS-1983 (closed)
 - 1809-INDUS-
 - 1812-INDUS-2008 * #
- Gaston County (Duke Energy Allen)
 - 3612-INDUS-2008 * #
- New Hanover County (Duke Energy Sutton)
 - 6512-INDUS-2016
- Rockingham County (Duke Energy Dan River)
 - 7906-INDUS-2016
- Rutherford County (Duke Energy Rogers)
 - 8106-INDUS-2009
- Person County (Duke Energy Roxboro)
 - 7302-INDUS-1988 *
- Person County (Duke Energy Mayo)
 - 7305-INDUS-2012
- Stokes County (Duke Energy Belews Creek)
 - 8503-INDUS-1984 (closed)
 - 8504-INDUS-
 - 8505-INDUS-
- Halifax County (Westmoreland Partners
Roanoke Valley Energy Plant)
 - 4204-INDUS-1994

Notes:

* Constructed on top of retired ash basin

No groundwater monitoring (double lined)

Coal-Fired Power Plants Without Landfills On Site:

- Buncombe County (Asheville)
- Robeson County (Weatherspoon)**
- Chatham County (Cape Fear)**
- Gaston County (Riverbend)**
- Rowan County (Buck Steam)*
- Wayne County (Lee)*

Notes:

* Converted to combined cycle turbine

** Retired Power Plants (no electricity production)

Quick Facts about the 13 coal combustion residuals (CCR) landfills:

- Eleven (11) open lined landfills (2 inactive)
- Two (2) closed unlined landfills
- All landfills are located at power plants except for Halifax County 4204-INDUS-1994
- The program has regulated CCR landfills since 1983 and the beneficial use of CCP since 1994.
- The program has required lined landfills for CCR since 1994 with the Halifax Co Ash LF Permit 4204-INDUS-1994 being the first.
- Required buffers from edge of waste:
 - 50 feet between property lines, streams and rivers
 - 500 feet between private dwellings and potable wells
 - 4 feet between bottom of waste and groundwater



POWER PLANT COAL COMBUSTION RESIDUALS

The Division of Waste Management's Solid Waste Section regulates the management of coal combustion residuals (CCR) from coal-fired electric power plants that are disposed of in CCR landfills or beneficially reused in structural fills. CCRs primarily consist of coal ash (bottom and fly ash) and flue gas desulfurization residuals. The program regulates CCR in industrial landfills in accordance with the North Carolina Administrative Code 15A NCAC 13B .0503 (Siting and Design Requirements), .0504 (Application Requirements), and .0505 (Operational Requirements) and the beneficial use of coal combustion products (CCP) in accordance with 15A NCAC 13B .1700. On August 20, 2014, the NC General Assembly passed Senate Bill 729 into Session Law 2014-122 creating the State's first Coal Ash Management Act (CAMA) with revised House Bill 630 being passed by the NCGA into Session Law 2016-95 on July 14, 2016.

Industrial landfill regulations require a natural and synthetic bottom liner, a leachate collection system, a natural and synthetic closure cap, and a water quality monitoring plan. Slope stability analysis is also required. Typically, industrial landfills have a single liner, but some have a double liner design allowable under NCGS 130A-295.4. A double-lined landfill has a leachate detection system and a leachate collection system between the two liners, where both systems are continuously monitored. A double-lined landfill system may be required for landfills constructed on existing CCR disposal areas such as old dry ash pond impoundments, closed unlined landfills or structural fills. Leachate at lined facilities is routed via gravity-fed piping to an active coal ash pond on-site, which then flows to a permitted National Pollutant Discharge Elimination System (NPDES) outfall. DEQ's Division of Water Resources issues the NPDES permits.

Structural Fills

The Solid Waste Section regulates the beneficial reuse of CCP under 15A NCAC 13B .1700 and CAMA with the most common use being structural fills. Currently, there are 80 structural fills regulated under the .1700 rules. One structural fill, Brickhaven No. 2 Mine Track "A", Permit 1910-STRUC-2015 located in Chatham County was issued under CAMA. This structural fill has a synthetic liner with groundwater monitoring. Structural fills under the .1700 rules are unlined and without groundwater monitoring and an impervious cap.

Environmental Monitoring

All industrial landfills, both active and closed, are required to conduct semi-annual water quality monitoring to ensure groundwater quality standards prescribed by 15A NCAC 2L .0202 (2L Standards) are met. Single-lined and unlined landfills require groundwater and surface water monitoring, while double-lined landfills require leachate monitoring. The contaminants of concern for CCR landfills are heavy metals, specifically boron, chromium, iron, manganese and selenium.

Environmental Assessment

CCR landfills are required to conduct semi-annual water quality monitoring to ensure groundwater quality standards do not exceed the 2L Standards at the compliance boundary, which is 250 feet from the edge of waste. If groundwater quality is found to exceed the 2L Standards at or beyond the compliance boundary, the facility must undergo an environmental assessment. Six CCR landfills (Permit 1804, 1809, 7305, 8503, 8504 and 8505) have performed environmental assessments and submitted assessment reports. Five of the assessments (Permit 1804, 1809, 7305, 8503 and 8504) showed that the CCR landfill was not the cause of contamination exceeding the 2L Standards. The assessment for Permit 8505 is ongoing and new groundwater monitoring wells have been installed to further assess the groundwater contamination. No CCR landfills are undergoing corrective action. Four structural fills are undergoing assessment (CCB0003, CCB0070, CCB0057 and CCB0064). Structural fill CCB0057 located in Nash County has completed their environmental assessment and will be performing corrective action in 2017.

News

The EPA Administrator signed the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule) final rule on December 19, 2014 and published it in the Federal Register, 40 CFR Parts 257 and 261, April 17, 2015. After amending the rule on July 26, 2016 and comment period ending August 22, 2016, the CCR Rule became effective on October 4, 2016. On December 18, 2016 Congress passed the Water Infrastructure Improvements for the Nation (WIIN) Act, where under Subtitle C authorizes EPA to approve state permitting programs for coal ash. <https://www.epa.gov/coalash/coal-ash-rule>

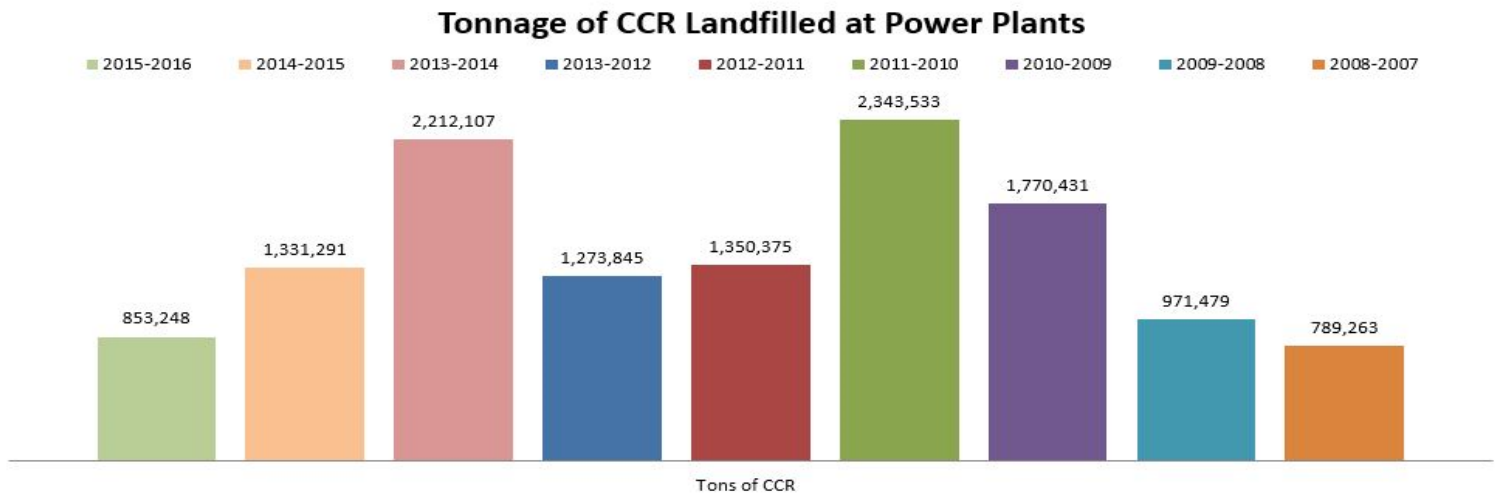


Figure 1: Tonnage of CCR Disposed in Landfills as Reported Annually in the Facility Report per G.S. 130A-309.09D.

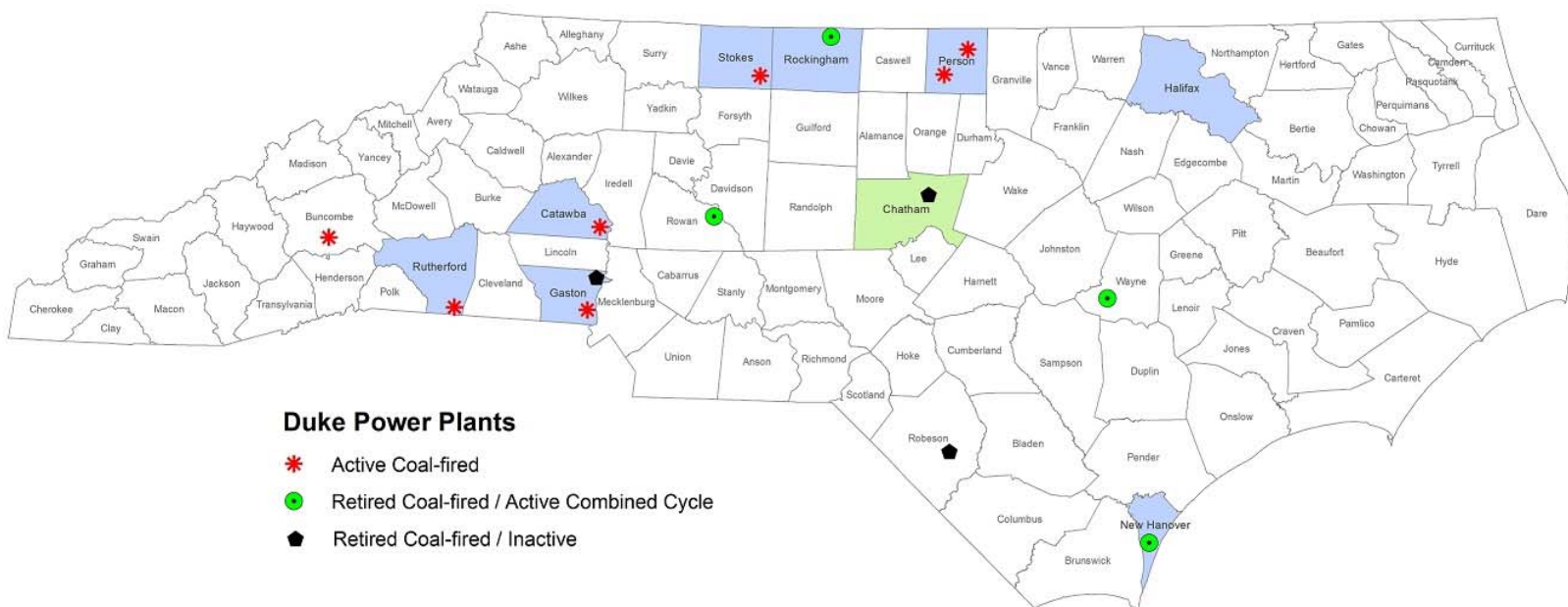


Figure 2: N.C. County Map with Blue Highlighted Counties Indicating CCR Landfills and Green Highlighted County Indicating Structural Fill