

Coal Ash and the JED Solid Waste Management Facility

Safe Handling and Disposal of Coal Combustion Residuals from Puerto Rico

Waste Connections of Osceola County LLC and AES Puerto Rico have partnered on a project to dispose of coal ash at the JED Solid Waste Management Facility in St. Cloud, Florida. The project provides safe management of materials from a critically important power station in Puerto Rico while creating significant economic benefits for Osceola County in the form of jobs and tipping fee revenue.

About Coal Ash

Coal is the fuel source for approximately one-third of electricity generation in the United States and produces large volumes of solid coal combustion residuals — primarily ash and synthetic gypsum from emissions control devices.

- **Volume** – According to the American Coal Ash Association, 111.3 million tons of coal combustion residuals were produced in the United States in 2017.¹ About 64 percent of these materials were safely used in products such as concrete and wallboard that people come into contact with every day. But recycling markets at this time cannot accommodate all of the material, leading to nearly 40 million tons of ash disposal annually. Ash is routinely transported across state lines for both use and disposal.
- **Toxicity** – Coal ash is not “toxic.” It contains trace quantities of metals similar to the levels of metals found in common soils.² When properly used or disposed, those metals are prevented from leaching out and coming into contact with humans and the environment.
- **Regulation** – Coal ash disposal is regulated as a non-hazardous waste on both the state and federal levels. Federal standards enacted in 2015 were “the culmination of extensive study on the effects of coal ash on the environment and public health.”³ These regulations address potential risks from coal ash disposal, including leaching of contaminants into ground water and blowing of contaminants into the air as dust, as well as create record keeping and reporting requirements.

About Coal Ash from Puerto Rico

AES Puerto Rico operates a 454-megawatt coal-fueled power plant in Guayama, Puerto Rico. While AES is working diligently to develop new, renewable electricity generation resources on the island, the Guayama plant remains a critically important component of the island’s electricity grid. It supplies approximately 17 percent of Puerto Rico’s total electricity to serve homes, schools and hospitals; provides reliable, around-the-clock baseload power; and is the lowest cost electricity available on the island, at around 8-9 cents kWh compared to 20-25 cents paid by consumers. AES Puerto Rico’s emissions are moreover among the lowest of coal-generated power in the United States, with SO₂ emissions that are among the lowest 3 percent of coal-fired plants in the US, and NO_x emissions that are among the lowest 13 percent. The plant also provides 110 direct jobs and over 600 indirect jobs on the island.

AES Puerto Rico has been transporting and disposing of coal ash in compliance with state and federal environmental regulations inside the mainland United States for several years. Several factors have led AES Puerto Rico to dispose of coal ash off the island in compliant landfills such as the JED Solid Waste Facility. Included in these factors are:

- AES Puerto Rico's efforts to support Puerto Rico's reconstruction of its energy sector.
 - Logistical challenges that limit the amount of coal ash that can be moved for disposal to the few Resource Conservation and Recovery Act Subtitle D landfills in Puerto Rico that are permitted to take the facility's coal ash.
 - The JED facility is one of multiple options for AES PR's coal ash management program. To ensure safe and efficient operation of the generating facility, it is necessary to have multiple disposal options, similar to multiple fuel suppliers.
- **Project Volume** – JED has received 44,000 tons of Puerto Rico coal ash to date and could receive up to 200,000 total tons by the end of 2019. The facility receives approximately 1.8 million tons of all types of waste each year, meaning the coal ash project would represent about 10 percent of the facility's total volume. The total project potential would represent approximately 0.005 percent of national coal ash disposal volumes.
 - **Project Material Characteristics** – The Puerto Rico ash has been thoroughly tested at certified laboratories to confirm it is below relevant regulatory thresholds used to determine acceptability prior to disposal at the JED facility. All results for the material are well within the EPA established limits. Analytical results include the required eight metals: Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver. The most limiting level established by the EPA is for Mercury at 0.2 mg/L or 0.2 parts per million, followed by Cadmium and Selenium at 1.0 ppm each. (A part per million is equivalent to one inch in sixteen miles, one second in 11.5 days, or one minute in two years.) Results for the Puerto Rico ash indicate levels of Mercury at 0.00009 mg/L. This means the Puerto Rico ash has Mercury levels at nearly one million times less than the regulatory limit to be disposed at a permitted Class I landfill.

About the JED Solid Waste Facility

The JED Solid Waste Facility is a Class 1 landfill that is permitted by the Florida Department of Environmental Protection and built to meet federal Resource Conservation and Recovery Act Subtitle D requirements. The permit allows JED to accept industrial waste, including coal ash. The facility features redundant liners and leachate collection systems to prevent any leakage into ground water. These systems include:

- Six (6) inch prepared subgrade.
- Secondary geosynthetic clay liner.
- Secondary 60 mil textured geomembrane.
- Secondary geocomposite drainage layer.
- Primary 60 mil textured geomembrane.
- Primary geocomposite drainage layer.
- Two (2) foot protective cover layer.
- Leachate collection system. (All leachate is collected onsite and disposed of at FDEP permitted facilities.)

About the Project Participants

AES Puerto Rico is a wholly owned subsidiary of the AES Corporation, a Fortune 500 global power company providing affordable, sustainable energy to 15 countries through a diverse portfolio of distribution businesses as well as thermal and renewable generation facilities.

Waste Connections is the premier provider of solid waste collection, transfer, recycling and disposal services in mostly exclusive and secondary markets across the United States and Canada. Waste Connections has safely managed the receipt of coal ash at JED and various others of its nearly 100 landfills across 41 states and 6 Canadian Provinces.

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SOURCES:

1. "Coal Combustion Products Production and Use Survey," American Coal Ash Association, 2018.
2. "'Coal Ash Material Safety – A Health Risk-Based Evaluation of USGS Coal Ash Data from Five US Power Plants," American Coal Ash Association, 2012.
3. "Disposal of Coal Combustion Residuals from Electric Utilities Final Rule," U.S. Environmental Protection Agency, April 17, 2015.