

# SAFE, RESPONSIBLE CLOSURE

Demonstrating our ongoing commitment to our customers and the environment

At Ameren Missouri, we are implementing a proactive comprehensive plan to safely and responsibly close our basins, the storage facilities that hold the byproducts of generating electricity from coal. A federal rule passed in 2015 during the Obama Administration requires us to close these basins and address impacts to groundwater.

## Our Plan

The ash will be compacted, graded and sloped to permanently shed water. After that, an engineered capping system, far stronger than regulations require, will be constructed over the top of the basins and the river-side embankment walls armored with rock. This system will take approximately two years to construct and isolates the ash from infiltration. Precipitation will be routed to newly-constructed storm water basins. The limited groundwater impacts localized to our property will diminish over time, and experts are evaluating methods to accelerate this process.



This Ash Basin At The Meramec Energy Center Closed In The Spring Of 2018.

Safe, Responsible Closure in Place:

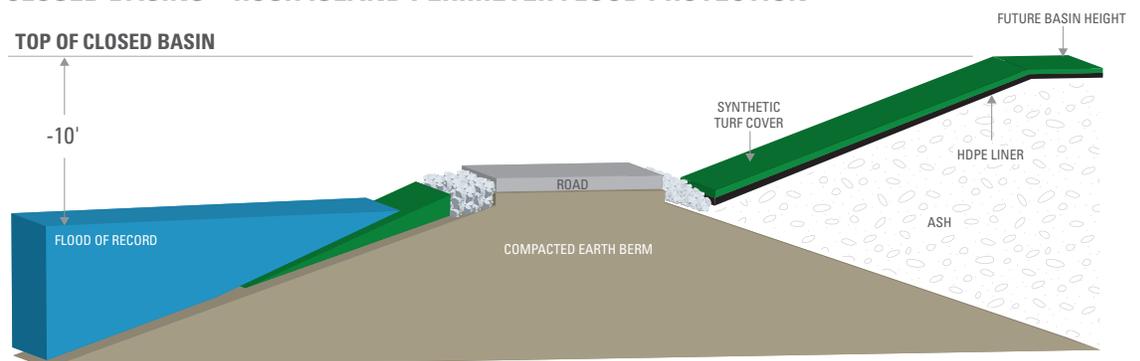
- Is the most efficient path to achieve the groundwater protection standards set under the federal rule
- Protects the environment because, as verified by third party structural engineers, the basins are built to withstand extreme events such as floods and earthquakes
- Limits the burden on the communities Ameren serves and calls home
- Fully complies with applicable state and federal requirements

As confirmed by independent, third-party experts, **Ameren's basins do not impact drinking water sources, including residential wells that rely on groundwater** or nearby rivers that serve both municipal and public water supplies, and modeling confirms they will not be impacted in the future.

Even after the basins are closed, Ameren will continue to:

- Monitor water resources near each of our facilities for years to come
- Inspect the basins to ensure structural integrity and perform regular maintenance to prevent erosion

## CLOSED BASINS – RUSH ISLAND PERIMETER FLOOD PROTECTION





## Answers to Customer Questions

Below are answers to some frequently asked questions from the public about the comprehensive steps Ameren has taken to manage coal combustion residuals (CCRs).

### What is Ameren doing to close the ash basins?

EPA says basins can be closed in place by installing a protective cover system, or by excavating the material; both methods are effective in protecting the environment. The EPA does not prefer one method over the other and acknowledges that most CCR basins across the country will not be excavated. Ameren has thoroughly explored closure and corrective measures options, carefully considering the best way to address groundwater issues while limiting impacts on the communities we serve and call home.

### Is CCR hazardous?

No. CCR is regulated as a solid waste, just like the everyday trash sent to municipal landfills. CCR comes from coal and, like rocks, clay and other carbon-based materials that form the Earth's crust, it contains low-levels of metals. CCR is used in construction materials and as a base material for concrete.

### Are there impacts on public health?

No. As demonstrated in numerous reports over many years, expert sampling results demonstrate that Ameren's CCR units do not impact public drinking water sources such as nearby rivers or aquifers used by drinking water wells near the energy centers. Groundwater impacts are limited to a handful of parameters and are localized to our property. Concentrations will diminish over time as pH levels stabilize after the basins are properly capped and closed.

### Are CCR basins stable and safe?

Yes. Energy center personnel inspect the basins weekly with annual inspections by specially trained dam safety engineers. Because of their construction and design, the CCR basins at Ameren's energy centers are in no danger of collapse, as has happened in other parts of the country. The basins have thick earth walls and are constructed to withstand up to an 8.0 magnitude earthquake. Even in cases of extreme flooding, as seen in the spring of 2019, the basins performed as designed.

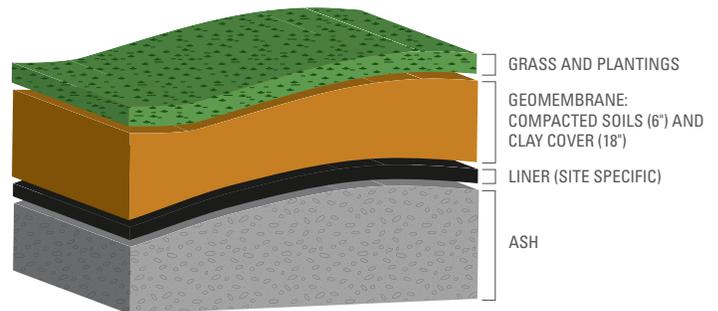
### Have you closed CCR basins before?

Yes. In Illinois we have closed basins at three facilities using the exact same approach we are planning in Missouri. Those closures were supervised and approved by Illinois EPA and are fully protective of the environment.

### What studies have been done?

For the past several years, Ameren has commissioned dozens of environmental studies by certified toxicologists, hydrogeologists and other experts in their fields of study. These ongoing inspections of groundwater, drinking and surface water conclude **there is no risk to public health**. Additional studies, posted to our CCR website, looked at transportation and deep excavation issues associated with basin closure methods.

## COVER SYSTEM EXAMPLE



### How has the community been involved in the process?

Ameren has maintained a public CCR website since 2016 providing access to information developed pursuant to the federal rule. Ameren also held four public meetings, one near each of the four energy centers, in May 2019. Attendees asked questions and left written comments. Additional comments were received through a dedicated email address. Ameren has posted responses to those comments on its CCR website.

### Why not dig it up?

It is not necessary to achieve compliance. Large scale excavation projects would pose a tremendous burden on the local community and we can meet our compliance obligations through a safer and faster route. There is simply a practical limit to the amount of ash that can be excavated, loaded into haul trucks and taken to a landfill during any given work day. Assuming we could maintain a loading rate of **one truck every 2.5 minutes**, it could still take up to **thirty years** to excavate our larger basins, resulting in increased likelihood of dangerous roadway accidents and burdening local communities with prolonged truck traffic. Access roads to Rush Island on (Big Hollow, Johnson and Danby), all have narrow, 11-foot winding lanes and are unsuitable for heavy traffic. Travel time to the closest landfill with sufficient capacity is nearly 45 minutes (34.7 distance to site), and would require an army of trucks to maintain a sufficient daily haul rate. No other form of transport such as barge or rail transport is realistically viable and **during this entire time the basins remain open and exposed to ongoing infiltration**. Under our chosen method, cap construction can be completed in two years. In addition, sophisticated computer modeling indicates that once the basins are closed, we can meet groundwater standards set under the federal rule through corrective action measures long before excavation could be completed.

### Where can I learn more?

All of the studies mentioned above, and much more, are available at [Ameren.com/CCRFacts](http://Ameren.com/CCRFacts).