

**Demonstration for Extension of Time Pursuant to 40 C.F.R. § 257.102(f)(2)**

Talen Energy (Talen) owns and operates the Brunner Island Steam Electric Station (Brunner), located in York Haven, York County, Pennsylvania. Basin 6 is located at the southern tip of Brunner Island, covers approximately 68 acres, and originally contained an estimated 4.5 million tons of coal combustion residuals (CCR). Pursuant to the federal CCR Rule (40 C.F.R. Part 257, Subpart D), Brunner placed the Notification of Intent to Close for Basin 6 in its operating record and on its CCR website on May 24, 2019, and closure began on June 3, 2019. A closure plan for Basin 6 was approved by the Pennsylvania Department of Environmental Protection (PADEP) in 2014.

Over 1.7 million tons of CCRs have been removed from the basin thus far, and most of this material has been beneficially used by the cement industry. However, it is not feasible to complete closure of the CCR unit within the timeframe required under 40 C.F.R. § 257.102(f)(1) due to factors beyond the facility's control. This demonstration documents the need to extend the timeframe for closure of Basin 6 by two years as allowed under 40 C.F.R. § 257.102(f)(2). Among other reasons, and as discussed in more detail below, the high moisture content of the material contained in Basin 6 limits the speed at which Brunner can safely remove CCR from the basin. To ensure safe working conditions during closure activities, Brunner had to implement additional safety controls and plans. In addition, in 2020-2021, closure activities were unexpectedly delayed by the COVID-19 pandemic, in part due to reduced demand for material to be beneficially used.

Since the Basin 6 size exceeds 40 acres, 40 C.F.R. § 257.102(f)(ii) authorizes up to five two-year extensions, providing for a total of 15 years to complete closure. This is the second such extension demonstration for Basin 6 closure.

**Closure Progress to Date**

Since closure began in 2019, the bulk CCR removal and the beneficial use project has been underway and progressing steadily. The following closure activities have been completed by Brunner at the Basin 6 closure site:

- Mobilization of necessary labor, materials, equipment, field activities, and development of safety measures. As mentioned previously, Basin 6's contents contain high moisture and have the potential to create an unsafe working environment. Safety is of the utmost importance for Brunner and Talen. Given the potential hazard associated with pore water instability, Brunner retained several CCR safety experts' approval of site field work safety protocols before excavation started to ensure that the safety and excavation plans established at the basin would result in a safe working environment. Brunner continues to consult with experts as the closure proceeds.
- Establishment of construction entrances and vehicle washes.
- Removal of soil and ash piles within the basin and subsurface CCR within two feet of the saturated ash elevation.

- Geotechnical testing and investigation activities have been completed including soil borings, cone penetration testing (CPT), aquifer testing, and ash characterization analysis. CCR removal contractors requested that Brunner obtain CPT data to better evaluation of basin conditions in order to develop a better excavation plan.
- Dewatering the basin was completed in 2021 and certified as dewatered by the PADEP. During dewatering, an estimated 40 million gallons of water was removed from the basin.
- Over 1.7 million tons of CCRs have been removed from the basin thus far, with the majority of the material being beneficially used by the cement industry. It is important that Brunner maximizes the amount of excavated CCR from Basin 6 that can be beneficially used, as beneficial use of CCR conserves natural resources and serves as an important alternative to disposal. Brunner has been evaluating additional vendors and opportunities to beneficially reuse the remaining 2.8 million tons of material.
- In addition to the current offsite beneficial use vendor (cement plant), Brunner supported the onsite beneficial use vendor to obtain PADEP approvals to conduct pilot tests for the processing of CCR removed from Basin 6. After obtaining the approvals, the onsite vendor conducted pilot testing for nearly 12 months to determine if additional CCR from Basin 6 could be effectively processed by the onsite beneficial use vendor. As noted below, use of this vendor, among others, for additional beneficial use capacity is being evaluated.

The complexity of completing this closure by removal is further documented in the 2019 Consent Decree signed by the Environmental Integrity Project (representing local environmental groups), PADEP, and Brunner/Talen. In that Consent Decree, the parties agreed to complete the removal of all CCR from Basin 6 by the end of 2031, which is 12.5 years from the start of the closure. The Consent Decree also requires Brunner to pursue actions to speed up the removal of the CCR.

### **Demonstration of Need for Extension of Closure Timeframe**

As described above, bulk CCR removal and the beneficial use project is ongoing and has been progressing steadily for five years. However, the facility is unable to complete closure within the timeframe required under 40 C.F.R. § 257.102(f)(1) due to a number of factors, which are beyond the control of Brunner:

- (1) Further evaluations of the site terrain determined that a larger quantity of CCR exists in Basin 6 than initially known in 2019 when closure activities began.
- (2) Due to a greater volume of ash in the basin, Brunner modified its PADEP Residual Waste Permit Traffic Plan, which originally permitted the trucking of 150,000 tons per year, to allow for a greater volume of CCR to leave the site. PADEP's approved traffic plan restricts the number of trucks per hour that can pass through an intersection due to road safety and traffic concerns. Therefore, even if a beneficial use vendor was able to take more CCR, they would be limited by the amount they could take offsite per hour.
  - a. The permitted traffic route requires the trucks to pass over a bridge, covering an unnamed channel to the Conewago Creek, on Wago Road in York Haven, Pennsylvania. This past year Brunner was notified that the bridge would be

undergoing construction, and a limit of 27 tons (54,000 lbs) was set for any vehicle traveling over the bridge. A truck loaded with ash weighs anywhere from 35 to 40 tons (70,000-80,000 lbs). As a result, CCR excavation activities slowed down while the haulers secured permits to exceed the posted weight limit as per state regulations.

- (3) While developing the initial safety plans and starting closure in the first year, there were unexpected delays in excavating the CCR caused by the COVID-19 pandemic. As the pandemic began to impact the economy, there was little demand for cement due to the shutdown of many projects. Due to the limited demand, Brunner's beneficial use contractor was unable to process CCR at previously anticipated quantities. There was also insufficient landfill space onsite. These factors resulted in less CCR being excavated compared to what would have been if demand for cement had remained at pre-pandemic levels.
- (4) The excavation of CCR from Basin 6 is limited by available beneficial use capacity. For instance, volatility in the construction market can significantly decrease the outlets capable of utilizing millions of tons of CCR in any given year. As noted above, Brunner is working to ensure that CCR removed from Basin 6 can be beneficially used, because such use conserves natural resources and serves as an important alternative to disposal. Brunner is currently evaluating proposals by additional beneficial use vendors to increase the amount of CCR that can be removed and beneficially used. In addition, to decreased demand for end products derived from beneficially used CCR, the excavation from Basin 6 is further limited by landfill capacity to receive the CCR removed, limited onsite space to build a new landfill, and community opposition to increased truck traffic.

The pace of the excavation of CCR from Basin 6 is limited by important safety considerations. Most of the material contained in Basin 6 has a high moisture content, which impacts the speed and safety of excavation work. Due to this, Brunner must be strategic with excavation and use extreme caution while implementing closure plans due to potential stability issues. Plan development and excavation take more time to conduct because of proper safety measures like assessing pore water pressure and conducting visual inspections to look for sloughing or other signs of potential danger. Accordingly, Brunner has taken time to develop and install appropriate safety controls and works closely with contractors who are working in the basin to prevent a pore water instability issue that could result in injury or loss of life, which has occurred at other CCR sites around the country. CCR pore water and safety experts were contracted during this time to ensure Brunner was implementing appropriate safety measures, including installation of in-basin piezometers, installation of vibrating-wire piezometers, and strategically excavating drainage ditches. Brunner continues to work with CCR excavation experts to ensure safety is maintained throughout the whole closure process. To ensure that the excavation can proceed in a timely and safe manner, in 2022, Brunner hired an experienced contractor to assist in excavation of wet CCRs. In addition to this contractor, Brunner has brought independent contractors onsite who have worked with CCR pore water pressure to properly evaluate if Basin 6 poses a potential threat to the safety of its workers. Brunner personnel regularly meet with its onsite contractor to review operations and modify the approach when required in order to safely remove material from Basin 6.

Brunner is continuing excavation and beneficial use efforts to close the basin in compliance with its PADEP-approved and federal CCR Rule closure plans and within the requirements of the 2019 Consent Decree. For the reasons discussed above, Brunner continues to require additional time to close Basin 6.

*I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.*

A handwritten signature in black ink that reads "Megan Toomey". The signature is written in a cursive style with a horizontal line underneath the name.

Megan Toomey

VP-Environmental

5/27/2026