AmerenUE

Response to MPSC Data Request

MPSC Case No. EA-2012-0281

Certificate for Public Convenience and Necessity to Construct Landfill

Data Request No.: MPSC 0014.2 - Claire Eubanks

The NPDES Permit mentioned in response to DR 14 (Permit # MO-0004812) is for the Osage Hydro-electric plant. Please provide the NPDES permit renewal application for the Labadie Energy Center ash ponds that is under review by MDNR.

RESPONSE

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Date: May 23, 2013

Attached is a copy of the most recent Labadie NPDES permit reapplication, dated December 20, 2011.
Note that it was a voluntary update to the pending reapplication, originally submitted in September 1998.

Attachment H
Environmental Projects

The following is a summary of current environmental projects at Labadie Energy Center. None of the projects described below are required by Federal, State, or local authorities. Rather, these descriptions are being supplied as optional information as noted in Form C, Item 2.60 B.

Ash Sales

Based on a review of data from the last five calendar years (2006-2010), Labadie Energy Center generates on average approximately 390,000 tons of fly ash and 166,000 tons of bottom ash each year.

Bottom ash is wet-sluiced to the old ash pond where it can be reclaimed for beneficial use. Annual utilization of ponded bottom ash is highly variable, averaging approximately 70,000 tons per year in the last three years, although by comparison approximately 600,000 tons were removed for beneficial use in 2006. Beneficial uses of bottom ash include use as a highway traction enhancement material, and as an aggregate replacement in a commercial dry-concrete product. Ameren has contracted with the firm Charah to market bottom ash and manage ponded material sizing/sorting, removal, and transport off-site. Charah supplies Labadie bottom ash to the independently operated Quikrete Plant adjacent to the Labadie Energy Center.

Fly ash is conveyed by a dry handling system to a series of silos operated by the ash marketing firm Mineral Resource Technologies (MRT) from which it can be pneumatically transferred into trucks or railcars for transport off-site. Ash can also be transferred from silos operated by Ameren, for placement into the fly ash pond after wetting for stabilization. Dry fly ash from the Labadie Energy Center is utilized primarily as a feedstock in ready-mix concrete production. It can also be used for flowable fill, soil stabilization, and as a road base material. Based on data from the last five calendar years, over 50% of the fly ash produced annually is managed by MRT (transferred off-site for utilization) while the balance is deposited into the fly ash pond.

Ash Pond Seeps

Recently, there has been considerable press coverage regarding historic seeps associated with the "old" ash pond at the Labadie Energy Center. The presence of these surface seeps was first identified by Ameren in the 1992 NPDES renewal application. These seeps consist of (relatively) minor flows of water emanating from locations on the external slopes of the "old" ash pond berm. In that application, we described two locations, one adjacent to the ash pond discharge pipe (at Outfall 002) and a second, at a low-lying area on the south-west corner of the pond. The latter of these was eliminated several years ago, when the low-lying area was filled in anticipation of a development project.

In 2010 Ameren's own contractors, along with independent contractors of the US Environmental Protection Agency, conducted dam safety assessments as part of a national initiative focusing on coal combustion waste impoundments. Two seeps were identified at the Labadie Energy Center as part of these reviews. These included the

previously identified seep associated with the Outfall 002 discharge pipe and a section (comprised collectively several distinct seeps), along the western toe of the ash pond levee, further south along the entrance road from Outfall 002. We note that EPA's contractor did not consider either of these seeps to be urgent as they posed no near term threat to the structural integrity of the impoundment.

Ameren completed construction of two projects in November with the goal of eliminating both seeps.

An anti-seep collar was placed around the Outfall 002 discharge pipe on the western side of the pond berm to address the small amount of seepage occurring below the pipe. The majority of the excavation to install the anti-seep collar was dry and the soil encountered above the pipe consisted of clayey sand fill material. Approximately 12 inches of gravel and sand bedding material was encountered below the pipe. This material was found to be saturated and it is likely that the seepage originated from this layer. An approximate 7-foot long plug of soil mixed with bentonite was placed below the pipe and used to backfill the excavation above the pipe.

A soil-bentonite slurry wall was installed within the berm, along the southwest portion of the old ash pond to cutoff seepage occurring along this section. The wall was initially designed to be 500 feet in length and 30 feet deep. It was constructed by excavating a 30 inch wide trench to a depth of 30 feet into natural cohesive soils, while pumping bentonite slurry into the trench to prevent caving. The trench was then backfilled with a mixture of soil and bentonite. While excavating the trench, a broken rock layer was encountered that continued beyond the planned southern end of the trench. In response, the trench length was extended an additional 90 feet to avoid terminating the slurry wall in the permeable broken rock material.

By early December, flows from both seeps had been greatly reduced. Ameren expects that following 'curing' and allowing time for residual fluids to drain out of the pond berms, the seepage will continue to decrease. Recent rains have saturated the berms and thus it is difficult to judge the final effectiveness of these remedies. A follow-up inspection planned by MDNR Saint Louis Regional office staff for mid-December, was postponed to await dry weather.

Dry Bottom Ash Handling Conversion – Unit 4

A project is currently underway to convert the Unit 4 boiler to allow dry removal of bottom ash by installation of a flight conveyor system. Installation of this system will allow bottom ash to be transferred to a hopper, outside the building where it can then be transported dry, for utilization or ultimately discharged into the old ash pond, increasing the flexibility in management of this wastestream. As shown on the Water Balance Diagram, bottom ash sluicing flows are approximately 12 mgd. Conversion of Unit 4, may ultimately allow the reduction in these flows of up to 25%.

Planned Coal Combustion Waste Landfill

Ameren is currently engaged in the process to permit and construct a new landfill on plant property. It is anticipated that wastewater generated from the landfill operation will be managed via plant waste water treatment systems. However, designs have not yet progressed sufficiently to allow incorporation of these future changes into the current

reapplication. We note that one or more wastewater collection and transfer ponds will be constructed to receive storm water runoff from the active landfill cell(s) and landfill leachate collection system. While some of this wastewater may be utilized (for instance for dust control or solids wetting within the landfill), excess flows will be routed to the plant for ultimate discharge via Outfall 002. Construction of these facilities is not expected to commence for two or more years. Ameren intends to file for appropriate construction and operating permit modifications to assure timely receipt of the required authorizations.