

Tennessee Valley Authority
Regulatory Submittal for Kingston Fossil Plant

Documents submitted:
Lime Application Work Plan

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Lime Application Work Plan

1.0 Purpose

Recent excessive rains have limited the ability to move material out of the ballfield into storage or onto trains. These rains have resulted in very sloppy roads and ponds in the ballfield, despite significant efforts to drain the area. These same rains have lessened the ability of the storage facilities (test embankment and west of Dike 2) to receive even dry ash. In addition, there are significant sources of very wet ash (especially in the east embayment) that may not dry in the time frame to support a completion of the time critical removal action by the spring of 2010.

Tests run both by Mt. Carmel and Severson using two very different techniques showed that lime application, be it by road stabilization equipment or by excavator mixing, can reduce the moisture content of ash. During the tests, application of lime varied from 3 to 9% with the higher application rates resulting in lower moisture content. In cases where 6-9% of lime, by weight, was added, the resultant ash met moisture content requirements for shipping.

2.0 Design

The primary uses of lime in the time-critical removal action include treating ash to render it loadable (candidate waste streams include the sluice trench material and the east embayment material-although any wet ash may be considered), treating the surface of dry ash stacking storage areas after a rain event to allow quicker continued storage, and treatment of sloppy roads to first remove the slurry on the roads and second to stabilize the roads for truck traffic. Any of these applications could occur routinely.

ADEM has approved the disposal of lime treated ash up to 6% by weight. All lime used on site will be tracked by weight and compared against the tonnage sent off by train to calculate a percent of lime in the train. Because of mixing of treated ash with other non-treated ash, lime may be applied to portions of the ash at higher content than 6%.

While using lime near the ash pond, the pH of the water body will be monitored. Wherever the lime is applied, controls will be used to limit migration of the lime to surface water.

Dust is a concern with lime application. Some of the techniques of application are more prone to dust generation than others. In those cases, the lime would be applied under wetter conditions or when personnel are removed from the area. Evening application will be used often to allow the lime to work over night. IH sampling will be used to ensure that all safety requirements are met. The existing air monitoring results will also be evaluated.

3.0 Construction

There are several techniques that may be used for lime application. Proposals are due in shortly for long-term application that are likely to include injection and road stabilization techniques. In these cases, specialty contractors will bring their equipment on site and they will perform lime application.

In other cases, much as was tested in the sluice trench area by Severson, lime may be applied by heavy equipment, such as dozers, excavators, tractors and disks, or even the Brown Bear roto-tiller. The equipment selected will depend on the application. For instance, liming the top of a storage area would not be done by excavator but a dozer may blade lime that had been spread with a front-end loader. But adding in lime in a bermed-in area at the sluice trench would be ideal for mixing with an excavator.

As the specialty contractors become available, more of the lime application may be conducted with specialized equipment. Until then, existing heavy equipment would be used.

4.0 Schedule

This work will begin upon approval of this plan. It is anticipated that this effort would occur throughout the duration of time critical actions, depending on the need.

5.0 Waste Management

As mentioned above, lime disposal has been approved by ADEM for up to 6% by weight.

6.0 Health and Safety

The activities in this work plan will follow the site-wide health and safety plan. The greatest concern is dust generation. Health and safety personnel will review MSDS information about any product being applied and depending on the type of application, they may enhance PPE requirements. For dryer type applications, a water truck will be in the vicinity to reduce dust, should it occur.