

In situ full pond stabilization provides a less expensive green solution to ash pond closure

We are well aware of the environmental impact of coal ash in the United States with potential hazards to both the air and water. This is a concern to all parties involved. Loose particles of fly ash can float into the air to surrounding communities, causing various respiratory issues to nearby residents. Both abandoned and operational ash ponds have a high potential to seep into the groundwater carrying chemicals such as lead, arsenic, and mercury to the municipal water supply.

What to do with these ponds has been at the center of much debate among power generation providers and environmental advocates. Finding an acceptable solution that will provide a safe, permanent solution that is economically feasible has been the challenge. The EPA permits two methods, closure in place and closure by removal. Each method presents its own challenges and downsides.

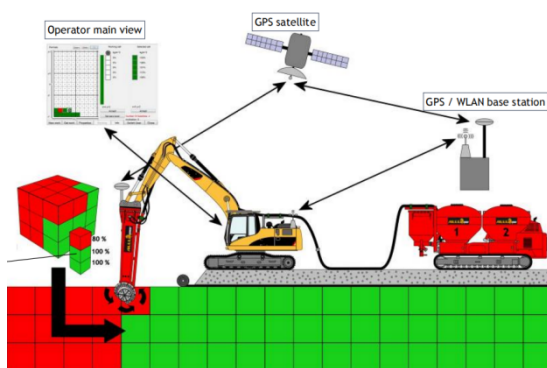
Closure in place or “capping” the pond is typically done utilizing a process known as “bucket mixing”. This is accomplished by dumping sacks of powdered binder, usually Portland Cement, onto the surface of the pond. The binder is then mixed with the buckets of a tracked excavator. A shallow cap is formed as the cement hardens. This process is less expensive than removal. The problem, however, exists beneath the “cap”. Moisture remains in the unstable contaminated soil allowing continued seepage into the groundwater. The capped ground is unsuitable for building and difficult to repurpose. In addition, dust pollution is created during the bucket mixing process.



Bucket mixing in use

Closure by removal minimizes the overall risk of ground water pollution, but presents its own set of problems. Removal costs and time can add up to more than five times that of closure in place. Relocation to an approved dump site (land fill) may also prove difficult with ash and contaminants being released during transport. Regulation of the dump site can also be challenging. If not properly maintained, these sites can often be affected by the wind carrying the contaminants great distances. Storm water can also seep through the ash and contaminate ground water.

Full pond stabilization provides an innovative solution that solves problems existing in both capping and removal. The ALLU Soil Improvement System has been used throughout Europe for more than a decade. The system uses a powerful mixing head attached to the boom of a mid-sized excavator. Unique to the system is its ability to feed both a powdered dry binder or a traditional wet slurry. The mixing head is fed a powdered binder by a high pressure feeder creating a fast drying homogeneous mix. Unlike bucket mixing which inconsistently mixes the surface, the system is capable of depths that are only limited by the excavator size. The ash pond is stabilized from the bottom up, not just at the surface. The feeding system uses computer controlled scales and GPS to regulate with precision the exact amount and location of binder mix as designed by the site engineer. This fully encapsulates and permanently encloses the contaminated site.



Area is stabilize from the bottom up

As a solid mass, threats of potential ground water contamination along with dust pollution from transportation are eliminated. Costs are controlled by removing the need to build and maintain dump sites. Less fossil fuels are used without the need to transport the waste off site. A solid surface remains that continues to harden over time, allowing a re-purposing of the existing ash containment pond. When removal is necessary, the system can be used to solidify liquid waste to enable transportation and eliminate dust during transit. In situ full pond stabilization presents a truly green & sustainable solution. For further information, go to https://www.allu.net/allu_product/soil-improvement-system/



ALLU Soil Improvement system