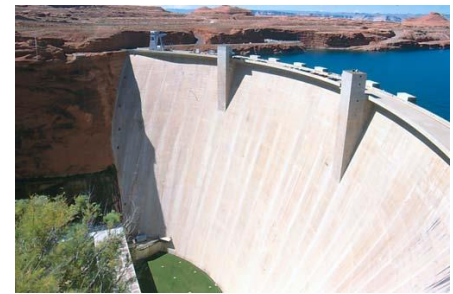
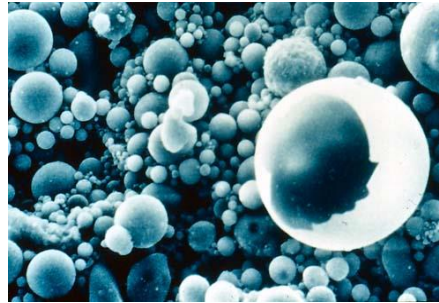


CCR Beneficial Use in Transportation



ASTSWMO 2019 Training

August 14, 2019

Milwaukee, WI

What is ACAA?

- **ACAA was founded in 1968**
- **Headquartered in Farmington Hills, MI**
- 130 members including **utilities, marketers, contractors, equipment and material suppliers, engineering consultants, and academics.**
- Member of the **World Wide Coal Combustion Products Network**

Our Mission

- The mission of the ACAA is to encourage the beneficial use of coal combustion products in ways that are protective of the environment, technically appropriate, commercially competitive, and supportive of a more sustainable society.

CCPs in Transportation

- Fly ash – Portland cement as raw feed, concrete mixtures as a supplementary cementitious material, base stabilization, structural fill as an aggregate
- Bottom ash – Portland cement as raw feed, structural fill as an aggregate, (concrete mixtures on the horizon)
- FGD gypsum – Portland cement manufacture to control rate of hardening

Fly ash in concrete mixtures –the good things

- Improves compressive and flexural **strength**
- Reduces **permeability**
- **Mitigates ASR**
- Improves **workability**
- **Reduces GHG** by reducing the amount of Portland cement used

Fly ash in concrete mixtures – the bad things

- May extend setting time increasing labor costs
- May result in extended stripping times slowing use of formwork
- May cause finishing problems in floors and slabs
- May cause air entrainment problems

Fly ash in concrete mixtures – the ugly things

- Coal-fueled power plants are injecting various materials to control emissions. These injections may make the fly ash unusable in concrete mixtures.
- Coal-fueled generation is declining resulting in fewer sources increasing logistical problems.
- Demand is running well-ahead of supply.

A critical need

- Departments of Transportation are facing major durability issues in concrete mixtures used in pavements and bridges.

- 1. Alkali-silica reactivity (ASR)**
- 2. Premature deterioration due to deicer applications**

Harvesting can help

- “Harvesting” is recovery of CCP from storage in landfills and ponds.
- It is estimated that well over 2 billion tons of CCP is in storage in the U.S.
- Storage practices have varied widely.
- Harvesting has been used for many years on a small scale.

ASTM International Assistance

- [ASTM E3183-18 Standard Guide for Harvesting Coal Combustion Products Stored in Active and Inactive Storage Areas for Beneficial Use](#)
- This guide provides a framework to address critical aspects related to the harvesting of CCPs placed in active (operational) and inactive (closed or no longer receiving CCPs) storage areas . These storage areas may be used for wet or dry material, and may be located at active or inactive facilities.

What you can do....

- Learn if you have landfills or ponds that have been used for CCP storage. If so, investigate what materials are in those landfills and ponds.
- Talk to your Department of Transportation and see if they have an adequate supply of CCP. If not, open a conversation on harvesting from local facilities.
- Engage the owners of the landfills and ponds (usually a utility).

Thank You!

American Coal Ash Association

Name

Phone

Email Address

