Coal Combustion Products (CCP)

FHWA/IRC Conference

Austin, TX **November 2, 2011**

American Coal Ash Association

40 YEARS ACAA

American Coal Ash Association

- Founded in 1968
- Headquartered in Aurora, CO
- 160 members – utilities, marketers, contractors, equipment suppliers, consultants, academics
- Active with similar organizations around the world

ACAA Mission

The mission of the American Coal Ash Association is to encourage beneficial use of CCP in ways that are *environmentally safe, technically appropriate, commercially competitive and supportive of a more sustainable society.*

CCP Types and Uses

- Fly ash – cement manufacture, concrete products, base stabilization, structural fill
- Bottom ash – aggregate, structural fill, traction control
- Boiler slag – roofing granules, traction control, blasting grit
- Flue gas desulfurization gypsum – drywall, agriculture

By the Numbers

- Over 125 million tons generated per year – second only to municipal solid waste
- 45 to 50% of electricity is generated from coal fired plants
- Since 2000 over 125 million tons of GHG avoided by the use of CCP in concrete products
- Economic benefits

  Direct - $9 to $10 billion per year

  Direct and indirect – as much as $23 billion per year

CCP for Transportation

- Fly ash in concrete manufacture
- Fly ash in cement manufacture
- Fly ash and bottom ash for geotechnical fill
- FGD for cement manufacturing

ASTM Specifications for CCP

- ASTM C 618 is used for concrete manufacture
- In all ASTM specifications, there are 654 specifications which cover fly ash use
  - 565 involving construction
  - 40 involving environmental issues
  - 15 involving petroleum and fuels
  - 9 involving paints and coatings
  - 4 involving plastics

Benefits of Fly Ash in Concrete

- Helps reduce GHG emissions
- Enhances cement performance
- Improves workability/pumpability
- Reduces permeability
- Improves compressive and flexural strength
- Mitigates alkali-silica reaction

Fly Ash in Base Stabilization

- Alternate to asphalt, cement, and lime
- Either type C or type F can be used
- Ash quality requirements not as stringent as in concrete products
- Provides superior support over unstabilized bases

Bottom Ash as Fill

2 primary reasons to consider the use of bottom ash as structural fill

1. Reduces the need to mine virgin and process fill materials
2. Improved logistics

How Much CCP is Used?

- The ACAA has conducted a survey of production and use every year since 1968.
- The survey is currently the only source of such data as federal agencies that had done this type of study in the past have curtailed their study.
- The survey is intended to demonstrate trends over time.

2010 Production and Use

- 127 million tons of CCP were generated
- 52 million tons used (41%)
- Fly ash use – 38%
- Bottom ash use – 42%
- Boiler slag use – 61%
- FGD gypsum use – 49%

Fly Ash in 2010

Produced – 68 million tons

Used – 26 million tons (38%)

Concrete products – 11 million tons

Cement manufacture – 2 million tons

Structural fill – 5 million tons

Mine fill – 2 million tons

Waste stabilization – 3 million tons

Modern History

- Through the 1990s the recycling rate was 25% to 30%
- In 2000 the recycling rate was 30%.
- In 2007 the recycling rate was 45%
- In 2010 the recycling rate was 41%
- What happened??????????

Kingston, Boxer, and Jackson

- Not a Washington, D.C. law firm
- December 22, 2008 – TVA Kingston Plant spills 5.5 million cubic yards of CCP
- Senator Barbara Boxer demands action
- Lisa Jackson is nominated to be EPA Administrator and promises to create CCP disposal rules

Toxic, Hazardous Coal Ash

- Environmental NGOs begin to demand hazardous waste regulation of CCP claiming the material is toxic and hazardous
- Media adopts the ENGOs scare language
- Word spreads to the users that hazardous waste regulations may be applied to CCP
- Fearing litigation markets begin to react
- Truth takes a holiday

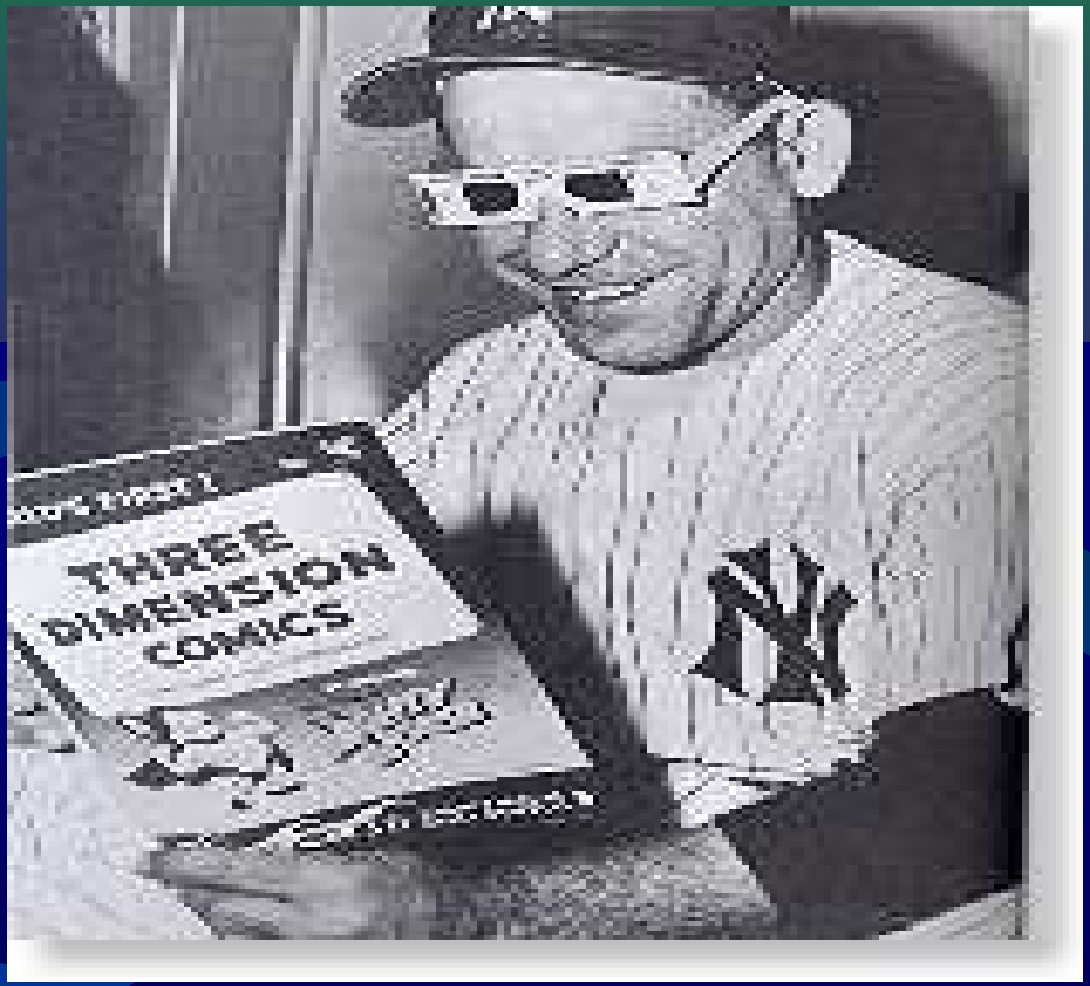
EPA Proposal on Disposal

- EPA drafts a proposal published in 2010
- Over 450,000 comments submitted to the docket
- EPA wants enforcement authority available only under hazardous waste regulations
- No regulation expected before the end of 2012

Capitol Hill Steps In

- David McKinley, R-WV, elected to the US House
- McKinley introduces HR 1391
- 1391 becomes 2273
- Energy and Commerce passes HR 2273 with bipartisan support
- House passes HR 2273 with bipartisan support
- Senators Kent Conrad and John Hoeven introduce S 1751 with bipartisan cosponsorship of 4 Democrats and 4 Republicans

What's Next?



The great philosopher Yogi Berra once said, “Predictions are hard – especially about the future.”

Action Ideas

1. Encourage your senator to support S 1791 – governors, state agencies and individuals needed
2. Encourage your trade groups to support S 1791
3. Encourage the White House to support S 1791

This is a states-first solution that provides protection of human health and the environment and protects recycling of CCP.

Websites

American Coal Ash Association

www.info@acaa-usa.org

Citizens for Recycling First

www.recyclingfirst.org

Separation Technologies

www.smartash.info

Questions?

American Coal Ash Association

40 YEARS
ACAA

Thank You!

AMERICAN COAL ASH ASSOCIATION

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