PA Asphalt Pavement Association

John R. Kibblehouse Jr.
Safety Committee Chairman
The H & K Group

PA ASA Safety Committee

PAPA’s 57th Annual Conference
January 16-18, 2017
The Hotel Hershey, PA
PAPA SAFETY COMMITTEE CHARTER

• **PURPOSE:** This Charter establishes the PAPA Safety Committee and defines its Establishment, Vision, Mission, Focus Areas, Membership, and Meetings.

• **VISION:** The PAPA Safety Committee will be the Association’s focal point to address pertinent safety focus areas to reduce or eliminate workplace injuries and/or deaths.

• **MISSION:** The mission of the PAPA Safety Committee is to identify, prioritize, and address issues, problems, concerns and opportunities to enhance the effectiveness of member company’s safety programs.
PAPA SAFETY COMMITTEE FOCUS AREAS

• **FOCUS AREAS:** The major focus areas of the PAPA Safety Committee are:

  1) Regulation
  2) Education & Training
  3) Enforcement Issues
  4) Technology
  5) Safety Culture
  6) Lessons Learned
## PAPA SAFETY COMMITTEE MEMBERS

<table>
<thead>
<tr>
<th>MEMBER</th>
<th>COMPANY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan Bauman</td>
<td>Glenn O. Hawbaker</td>
</tr>
<tr>
<td>Scott Bergman, Secretary</td>
<td>Axeon Specialty Products</td>
</tr>
<tr>
<td>Steven Durbin</td>
<td>Lane Construction Company</td>
</tr>
<tr>
<td>Billy Godfrey</td>
<td>Blakeslee Asphalt Supply LLC</td>
</tr>
<tr>
<td>Steven Kammeyer</td>
<td>Marathon Petroleum Company</td>
</tr>
<tr>
<td>John R Kibblehouse, Jr., Chairman</td>
<td>The H &amp; K Group</td>
</tr>
<tr>
<td>Mark Kurcis</td>
<td>New Enterprise Stone and Lime Company</td>
</tr>
<tr>
<td>Tom Loughery</td>
<td>Glasgow Inc</td>
</tr>
<tr>
<td>Gregory Lutz</td>
<td>J.D. Eckman Inc.</td>
</tr>
<tr>
<td>Matt Mileski</td>
<td>HRI Inc.</td>
</tr>
<tr>
<td>Michael Minkler</td>
<td>CMS Engineering</td>
</tr>
<tr>
<td>Joe Knouse</td>
<td>The H &amp; K Group</td>
</tr>
<tr>
<td>Neil Seidenstricker</td>
<td>The Stewart Companies</td>
</tr>
<tr>
<td>Doug Sturtevant, Vice Chairman</td>
<td>Allan Myers</td>
</tr>
<tr>
<td>Brett Thorius</td>
<td>Old Castle Materials</td>
</tr>
<tr>
<td>Gary Hoffman, Charles Goodhart, Ex. Officio</td>
<td>PAPA</td>
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</tbody>
</table>
PLANT – MATERIALS SESSION AGENDA

1) Confined Space & New OSHA Regs – Matt Mileski
2) Arc Flash – Dan Bauman
3) Structural Integrity – Dan Bauman
4) Stockpile Safety – Dan Bauman
5) Silo Loadout – Dan Bauman
Confined Spaces
1st Is it a confined space?
What is a confined space?

1) You can fit inside
2) Harder than normal to enter or exit
3) Not intended for continuous occupancy
Not a confined space
Exterior stairs, normally covered with grating?
2nd Is it dangerous?
Choose

1. No Danger – no problem - **No Permit**
2. Remove danger and **Reclassify** as non-permit
3. **Constant ventilation** keeps it safe
4. **Permit Entry** – we control the danger
5. Dangerous – **Do not enter** – post sign
1. No Danger – no problem - **No Permit**
Cold Feed Bins

Remove danger and **Reclassify** as non-permit
2. Remove danger and **Reclassify** as non-permit
Must document that danger is removed

Remove danger and **Reclassify** as non-permit
2 Remove danger and **Reclassify** as non-permit
Constant ventilation keeps it safe
Constant ventilation keeps it safe

- Document
- Entrant must be **trained**
- 100% **gas detector**
Permit Entry
we control the danger
• Permit
• Retrieval line
• Attendant
• Rescue service
• Cancellation
Permit Entry – we control the danger
5 Dangerous – **Do not enter** – post sign

![Sign with text: Danger, Permit Required, Confined Space, Do Not Enter]
Asphalt Tanks

5 Dangerous – **Do not enter** – post sign
H2S venting off asphalt tank
www.osha.gov
Do the Simplest Safe thing

And document what you did
Walking Working Surfaces

OSHA’s Final Rule to Update, Align, and Provide Greater Flexibility in its General Industry Walking-Working Surfaces and Fall Protection Standards

www.osha.gov
Arc Flash

- Why is it a concern
- Arc Hazards and the survey
- Labeling
- Training and PPE
Arc Flash / Blast

- Concentrated energy explodes outward
- High intensity flash
- Temperatures can reach 35,000 deg. F
- Pressure wave can reach 200lbs/sq. inch
- Vaporize conductors and explode particles like buckshot.
Arc Flash Effects

• Severe burns
• Broken bones
• Vision damage
• Hearing loss
• Brain/internal injuries
• Punctures and lacerations
• Death
Arc Hazard Survey

- Single line diagram
- Incident energy levels
- Current limiting device coordination
- Calculates a hazard risk category and approach boundaries
- Recommendations to reduce high hazard risk categories
REDUCE THE HAZARDS

- Change fuses
- Develop a maintenance program
- Adjust circuit breakers
- Install additional limiters
## ARC RATINGS

<table>
<thead>
<tr>
<th>Hazard / Risk Category</th>
<th>Incident Energy (cal/cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 / 1</td>
<td>0 – 4 (1.2)</td>
</tr>
<tr>
<td>2</td>
<td>4 - 8</td>
</tr>
<tr>
<td>3</td>
<td>8 - 25</td>
</tr>
<tr>
<td>4</td>
<td>25 - 40</td>
</tr>
<tr>
<td>Dangerous</td>
<td>Over 40</td>
</tr>
</tbody>
</table>

*NFPA 70E Table 130.7(C)(11)
**ARC FLASH LABEL**

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>WARNING</td>
</tr>
</tbody>
</table>

Arc Flash and Shock Hazard
Appropriate PPE Required

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 inch</td>
<td>Flash Hazard Boundary</td>
</tr>
<tr>
<td>0.40</td>
<td>cal/cm² Flash Hazard at 18 inches</td>
</tr>
<tr>
<td>Category 0</td>
<td>Untreated Cotton</td>
</tr>
<tr>
<td>480 VAC</td>
<td>Shock Hazard when cover is removed</td>
</tr>
<tr>
<td>00</td>
<td>Glove Class</td>
</tr>
<tr>
<td>42 inch</td>
<td>Limited Approach (Fixed Circuit)</td>
</tr>
<tr>
<td>12 inch</td>
<td>Restricted Approach</td>
</tr>
<tr>
<td>1 inch</td>
<td>Prohibited Approach</td>
</tr>
</tbody>
</table>

Bus: EDDY CURRENT PANEL Prot: PD-EDDY
# ARC FLASH LABEL

<table>
<thead>
<tr>
<th></th>
<th>Detailsmont</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DANGER</strong></td>
<td></td>
</tr>
<tr>
<td>NO SAFE PPE EXISTS</td>
<td></td>
</tr>
<tr>
<td>ENERGIZED WORK PROHIBITED</td>
<td></td>
</tr>
<tr>
<td><strong>156 inch</strong></td>
<td>Flash Hazard Boundary</td>
</tr>
<tr>
<td><strong>41</strong></td>
<td>cal/cm^2 Flash Hazard at 18 inches</td>
</tr>
<tr>
<td><strong>Dangerous! NO SAFE PPE EXISTS</strong></td>
<td></td>
</tr>
<tr>
<td><strong>480 VAC 00</strong></td>
<td>Shock Hazard when cover is removed</td>
</tr>
<tr>
<td><strong>42 inch</strong></td>
<td>Glove Class</td>
</tr>
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</tr>
<tr>
<td><strong>1 inch</strong></td>
<td>Restricted Approach</td>
</tr>
<tr>
<td><strong>Bus: FERROUS</strong></td>
<td>Prohibited Approach</td>
</tr>
<tr>
<td><strong>BALE MCC MAIN BKR Prot: F-UTILIT</strong></td>
<td></td>
</tr>
</tbody>
</table>
PPE – HAZARD RISK CATEGORY

Category 1

To

Category 4
ARC-RATED FR CLOTHING & PPE

• Layering
  ▫ Outer layers must be flame resistant
  ▫ Under layers must be non-melting

• Fit – Clothing shall fit properly (loose), w/ least interference

• Coverage – Clothing must cover potentially exposed areas
  • (wrist, neck)

• Care & Maintenance
  ▫ Inspect before use
  ▫ Launder according to mfg.'s instructions
Changes to Boundary Requirements

- "Prohibited Approach Boundary" removed
- Conductive articles of jewelry and clothing must be removed
- Working space shall not be used for storage
- Barricades shall not be placed closer than the arc flash boundary when it is greater than the limited approach boundary
- Insulated tools must be used when working inside the restricted approach boundary
NFPA 70E Approach Boundaries

Warning label provides boundary information

Flash Boundary – 4 ft. or calculated

Limited

Restricted

Prohibited
Arc Flash Hazard Training

- Labeling system
  - Hazard Recognition, Available energy

- PPE Requirements
  - Glove selection and testing
  - Shock protection
  - Arc flash rated clothing

This has nothing to do with work or repairs to be done!
### Glove Labeling Chart

Choose the right glove by voltage rating

<table>
<thead>
<tr>
<th>Class Color</th>
<th>Proof Test Voltage AC / DC</th>
<th>Max. Use Voltage AC / DC</th>
<th>Rubber Molded Products Label</th>
<th>Insulating Rubber Glove Label</th>
<th>Insulating Rubber Dipped Sleeve Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 Beige</td>
<td>2,500 / 10,000</td>
<td>500 / 750</td>
<td></td>
<td>10 SALISBURY</td>
<td></td>
</tr>
<tr>
<td>0 Red</td>
<td>5,000 / 20,000</td>
<td>1,000 / 1,500</td>
<td></td>
<td>10 SALISBURY</td>
<td></td>
</tr>
<tr>
<td>1 White</td>
<td>10,000 / 40,000</td>
<td>7,500 / 11,250</td>
<td></td>
<td>10 SALISBURY</td>
<td></td>
</tr>
<tr>
<td>2 Yellow</td>
<td>20,000 / 50,000</td>
<td>17,000 / 25,500</td>
<td></td>
<td>10 SALISBURY</td>
<td></td>
</tr>
<tr>
<td>3 Green</td>
<td>30,000 / 60,000</td>
<td>26,500 / 39,750</td>
<td></td>
<td>10 SALISBURY</td>
<td></td>
</tr>
<tr>
<td>4 Orange</td>
<td>40,000 / 70,000</td>
<td>36,000 / 54,000</td>
<td></td>
<td>10 SALISBURY</td>
<td></td>
</tr>
</tbody>
</table>

**ASTM Labeling Chart**

**Salisbury’s** Natural Rubber and SALCOR® Rubber Electrical Protective Equipment

**Request the Best with Salisbury**

**ASTM Specification Reference**

- D120 Rubber Insulating Gloves
- D178 Rubber Insulating Mats
- D1048 Rubber Insulating Blankets
- D1049 Rubber Insulating Covers
- D1050 Rubber Insulating Line Hose
- D1051 Rubber Insulating Sleeves
- F478 In-Service Care of Line Hose & Covers
- F479 In-Service Care of Insulating Blankets
- F486 In-Service Care of Gloves & Sleeves
- F489 Leather Protectors for Insulating Gloves
- F1238 Inspection Guide for Rubber Products
- F1742 PVC Insulating Sheathing
- F2320 Rubber Insulating Sheeting

**Type I** Designates natural rubber.

**Type II** Designates SALCOR® UV and ozone resistant rubber.
Voltage-Rated Gloves

- First line of defense
- Leather protectors must be worn over the rubber gloves
- Gloves must be tested
  - Before first issue and every 6 months
  - If tested, but not issued for service, glove may not be put into service unless tested within previous 12 months.
- Checked before use
  - Roll-up test
  - Inflator test
STRUCTURAL INTEGRITY

- MSHA Alert
PREVENTATIVE MEASURES

• Thickness Measurements
  ▫ Bins
    • Line or Patch
  ▫ Floors
    • How Thick Is The Hardened Layer

• Silo’s
  ▫ Cones
  ▫ Measure Above the Cone
  ▫ Any Ceramics or Overlaps
PREVENTATIVE MEASURES

- Structure
  - Visual Inspection
  - House keeping
  - Proper Repairs
STRUCTURAL INTEGRITY

- Asphalt Tanks

  - NAPA Guide (IS-137) – Guidance for the Inspection of Above Ground Storage Tanks Containing Asphalt Cement at Asphalt Pavement Production Facilities

  - API 653, Tank Inspection, Repair, Alteration and Reconstruction.
LAB SAFETY

- Stock Piles and Sampling
- Asphalt Sampling
- Lab Activities

https://www.youtube.com/watch?v=wKiezhYSp1s
STOCKPILE AND SAMPLING

- Communications (Plant and Lab)
- Blind spots for the equipment onsite
- Maintain eye contact
- Understand the equipment blind spots
- Always face vehicle routes when doing work task adjacent to a haul road
STOCKPILE AND SAMPLING

• Stockpile
  ▫ Overhanging material
  ▫ Stay clear of draw points above surge tunnels
  ▫ Prohibit people from walking on a surge pile without taking safety measures
  ▫ Never place yourself between the equipment and the stockpile
ASPHALT SAMPLING

• Plant
  ▫ Mobile equipment
  ▫ Sampling racks
  ▫ Tools for sampling
  ▫ Carrying or lowering samples
  ▫ Housekeeping

• Field
  ▫ Live or dead lane
  ▫ Mobile equipment in and out of the work zone.
LAB ACTIVITIES

• Chemicals – SDS sheets

• Temperature

• Work area layout (Design & Production)

• Housekeeping

• Air monitoring for silica particulate
SILO LOAD OUT

Hood Shots

- Auto Load out / Manual Buttons
  - Acknowledge the truck is
  - Under correct silo
  - Proper location for each drop
  - One click and loading begins
  - Lights or signs to communicate with the drivers
SILO LOAD OUT

Other Approaches

- Photo or Laser Eyes for Truck Position
- Silo Selector Switch- Only (1) Silo Will Open
- Timers for No-Flow or Scale Errors
- Emergency Stops
SILO LOAD OUT

- Equipment Design / Automation
  - Batcher Operation - Time or Tons
    - Completely Empty?
    - **Batch when Silo Gates are Open?**
  - Equipment Design for Loss of Power or Air
    - Batchers - Fail Open or Fail Closed
    - Silo Gates - Fail Open or Closed
- Emergency Stop
Thank you for your attention & questions!

Please contact any committee member should you wish to join this very important committee!