MSHA Spring Thaw
Redding Cement Plant - Landslide and Fires
Landslide on Limestone Beltline

- 13 Feb 2019 large landslide occurred on taking out the limestone belt and electrical power
- Happened on the off shift ~ 4:00 am
Arial View of Landslide
Landslide

- Root Cause Analysis
  - high rainfall (and 10+” in 12 hrs prior to slide),
  - old road
  - poor drainage
- Slide material had to be properly disposed of and had to transported back to quarry, slope stabilization
- Electrical poles down – isolate
- Mechanical repairs to conveyor
- Temporary system set up to get limestone to the plant
  - Additional traffic on access road
- Total cost - ~ $1.5 m
Landslide Rehabilitation
Safety Challenges

- Competent contractor aware of the safety hazards
  - Manage the risk of additional slope failure during excavation
  - Safe angle of repose
  - Spray seeds for prevention

- Manage people-vehicle interactions
  - Additional traffic on road to move rock and dispose of waste material
  - People and equipment (electrical & mechanical)

- Hazards
  - Tension in belt
  - Electrical isolations
Lessons Learned

- Pay attention to Warning signs
  - Some very minor cracks in the bank
  - Access to the area difficult
  - Geologist to do a ground hazard survey

- Pay attention to abnormal weather conditions
  - Exceptionally high rainfall after many years drought
  - Hydraulic pressure, drainage
  - Check/know where drainage points are and maintain

- No Complacency
  - Just because it’s been like that for 60 years

- Alternative access to the quarry
  - No other access road
Carr Fire, Redding California

- Carr fired started 23 July near French Gulch
- Delta and Hirz fires
Maps of Fires

- Carr, Delta & Hirz fires
- Emergency services needed to erect an new cell phone tower to prevent confusion in the communication of fighting all 3 fires
Chain of Events

- Winds picking up and blowing towards the plant
- The helicopter launch zone was relocated, local fire chief informed us of his concern for the plant
- Had to make a decision on the plant that was 1.5 miles north of helicopter zone
- It takes 24 hours to shutdown a kiln to avoid damage to the equipment
- Made the decision to take it down as so much could happen/change in a 24 hour period
- Fortunately winds changed and fire did not impact the plant physically
Impact on Us

- **Impact on Workforce**
  - Evacuation orders - mandatory
  - Employees evacuated – stay with family, hotels all full,
  - Employees families affected – need to help them
  - Defending own property – some people 4 weeks

- **Communication**
  - Phone & power lines out of action
  - Employees phone left/not charges
  - How to contact everyone, employee addresses

- **Air conditions**
  - Water
  - Masks for smoke

- **Hot ash & embers**

- **Traffic issues, closed roads**
Emergency Preparedness

- Critical to have up to date, good information
  - Twice daily team up dates
  - Weather reports, wind
  - Contact with fire chief
  - Calfire web page, TV stations

- Head of fire season
  - Defensible space
  - Water hydrants
  - Consumables – masks etc.

- Emergency updates/exercise
  - ensure everyone knows escape routes (on foot from plant & vehicles)
  - Understand process impact
Questions

Whiskeytown Lake