Green Jobs and Worker Fatalities: Causes and Prevention. The California Fatality Assessment and Control Evaluation (FACE) Program

Laura Styles, MPH; Hank Cierpich, BS; James Rogge, MD, MPH; Egils Kronlins, BA; Robert Harrison, MD, MPH
California Department of Public Health, Occupational Health Branch

BACKGROUND / OBJECTIVE

The FACE program is designed to identify and investigate the causes of fatal occupational injuries. The objective of the program is to prevent occupational fatalities by:

- Identifying high-risk work situations
- Developing prevention strategies
- Informing those who can intervene in the workplace

California is one of nine FACE states funded by NIOSH

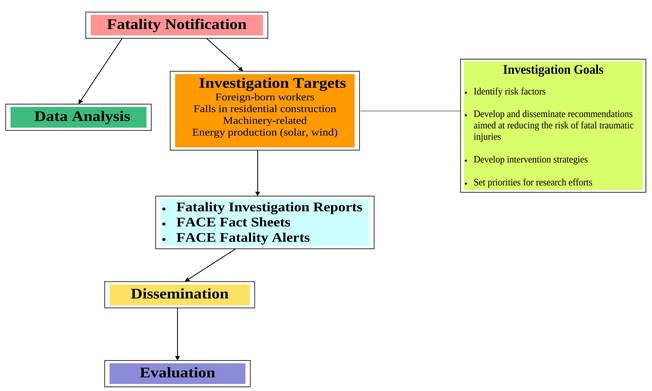
California FACE focuses on Los Angeles County– where 24% of California's occupational fatalities have occurred since 1992

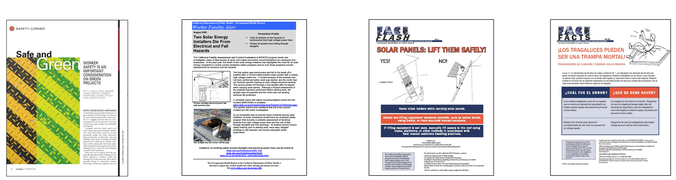
METHODS

Multi-Source Surveillance

The FACE program uses multiple sources of notification for the rapid identification of fatal occupational injuries:

- Los Angeles County Coroner Reports
- Death Certificates
- Newspaper Reports
- Division of Occupational Safety and Health (Cal/OSHA) Documents
- Census of Fatal Occupational Injuries (CFOI)





Dissemination Partners

- Unions
- Trade Associations
- UCLA Labor Occupational Safety and Health (LOSH) program
- Foreign Consulates
- Health & Job Fairs
- NIOSH
- Worker Centers
- Community Colleges / Vocational Schools
- Cal/OSHA

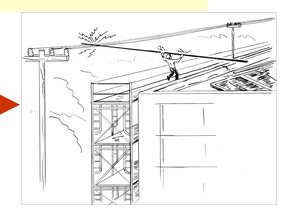
RESULTS AND CONCLUSIONS: LOS ANGELES COUNTY

Green Jobs in California:

- Green jobs grew by 36% between 1995 and 2008.
- The number of full-time solar jobs is expected to increase from 31,000 in 2009 to 214,000 in 2016.
- The growth in the California solar industry is forecast to continue at a rate of 45% to 50% per year, to reach one million solar roofs by 2017.

ROOFTOP SOLAR INSTALLATION

Fatality Investigation #08CA006
Laborer Dies When He Falls 35 Feet From a Scaffold After Being Electrocuted



INVESTIGATION
A 4,800 volt utility pole was located 10 feet from the scaffold.

The hot water heater strapping material (20 ft. aluminum channel bracket) made contact with the high voltage power lines.

RECOMMENDATIONS
- Conduct a daily job hazard analysis of the work area, including any electrical hazards from high voltage power lines.
- Establish and maintain safety programs that include electrical hazard recognition training, including high voltage power lines.

Fatality Investigation # 09CA003
An Electrical Worker Dies When He Falls Through a Skylight While Installing Solar Panels on the Roof of a Warehouse.

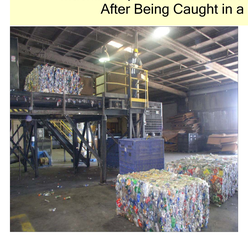
INVESTIGATION
The victim was carrying solar panels and walking backwards because of limited space around the sky light.

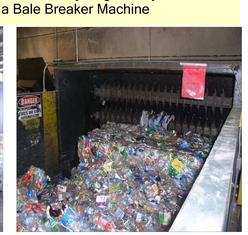
The victim tripped on the lip of the skylight and fell onto the skylight.

RECOMMENDATIONS
- Develop, implement, and enforce a fall protection program that incorporates engineering controls such as screens and guard rails as well as personal fall protection.
- Use skylights that conform to standards for material strength.

PLASTIC BOTTLE DE-BALING & CARDBOARD BALING MACHINERY

Fatality Investigation #08CA007
Machine Operator in a Plastic Bottle Recycling Facility Dies After Being Caught in a Bale Breaker Machine



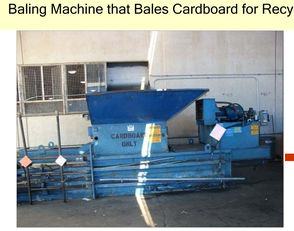


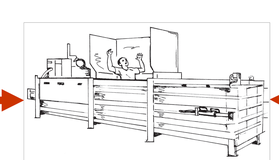
INVESTIGATION
There were ineffective safety interlocks and protective guarding to prevent workers from entering the conveyor area.

The victim entered the conveyor belt area while the machine was still running and his foot was caught by the rotating blades of the machine.

RECOMMENDATION
- Employers and bale breaking machine manufacturers should collaborate on designing and installing effective safety features to keep workers away from moving parts.

Fatality Investigation # 09CA005
Maintenance Worker Dies when He Falls into a Baling Machine that Bales Cardboard for Recycling





INVESTIGATION
The victim climbed into the chute and was crushed by the compressing ram.

The guard on the side of the chute did not fully enclose the chute to prevent entry.

The machine constantly cycled because the electronic sensors were blocked.

RECOMMENDATIONS
- Make sure guards around chutes are fully enclosed to prevent worker entry.
- Ensure electronic sensors are not disabled or bypassed.
- Ensure lockout/tagout procedures are enforced when servicing or maintaining the machine.
- Ensure inspection of the baling machine is performed periodically by the supervisor in order to verify the machine's condition.

Fatality Investigation #09CA009
Janitor Dies When He Falls into a Baling Machine that Bales Cardboard for Recycling

INVESTIGATION
The victim climbed inside the compacting chamber while the machine was running and was crushed by the compressing ram.

The machine's point of operation was not guarded to prevent workers from entering.

RECOMMENDATIONS
- Make sure the area around the machine's point of operation is guarded by barriers or interlocked safety gates.
- Ensure lockout/tagout procedures are implemented and enforced.
- Have safety and warning signs affixed to the machine in a language workers can understand.

Funded by the National Institute for Occupational Safety and Health (NIOSH)