

## **Farm Worker Burned in Explosion<sup>1</sup>**

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California NURSE Project<sup>2</sup>

### **SUMMARY: CASE 193-208-01**

A farm worker told the following story. He was fixing a tomato harvester in the shop area of a farm. The farm owner (his boss) came by and told him to burn some boxes full of empty containers. To do so, he was to pour gasoline over the boxes out in a field. Burning was not a usual job for the worker. He had been an irrigator, tractor driver and service person, but he had never burned anything at work. He noticed the containers used to hold liquid pesticides. Still, he went out to a field and threw a match on the boxes after pouring gasoline on them.

Seconds later the boxes exploded. Standing about three feet away, blistering burns covered the worker's face, arms and neck from the flames. He ran back to the shop in horrible pain. His boss poured cool water over the burns. This did not help the pain, so the worker asked his boss to drive him to the doctor.

At a medical clinic, a doctor cleaned the burns and gave the injured worker pain control medication. He then requested the injured worker go to the burn unit of a trauma center for more treatment. The farm owner drove him to the nearest trauma center.

How could this injury have been prevented?

- Employers should not have workers do jobs they are not trained to do.
- Plastic pesticide containers should not be burned.
- Employers should not have workers work in unsafe work environments.

- Workers and employers should call 911 if someone is injured.

### **BACKGROUND**

On June 23, 1993, NURSE staff received a written report of an agricultural injury from a rural health center. The health center had treated a 23 year-old Hispanic male farm worker for first and second degree burns (skin reddening and blistering) to his face, arms, hands and neck on June 18, 1993. The farm worker's employer told him to burn boxes containing empty containers in a field. While doing so, they exploded and severely burned the farm worker's face and body.

A nurse from the NURSE Project interviewed the injured worker by telephone on June 30, 1993. The nurse discussed the incident, by telephone, with one of the farm owners on July 6, 1993. The owner stated the nurse could not conduct an on-site investigation due to production time constraints with the tomato harvest. NURSE staff reviewed medical records and received information from the county Pollution Control Board, who is responsible for issuing agricultural burn permits. Agricultural burn permits are issued to farmers for approved burns such as wheat or rice. Also, the Pollution Control Board reports on a daily basis if the area is a burn day or not. Although the owner stated he had a burn permit, the Pollution Control Board reported June 18, 1993 was a no burn day in the incident area.

The California Occupational Health and Safety Administration (Cal/OSHA) was not notified and did not investigate this incident.

The incident took place on a family owned and operated 3,800 acre farm. It produces a variety of crops,

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1. This document, CDHS(COHB)-FI-93-005-29, was extracted from a series of the Nurses Using Rural Sentinel Events (NURSE) project, conducted by the California Occupational Health Program of the California Department of Health Services, in conjunction with the National Institute for Occupational Safety and Health. Publication Date: October 1993.

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including tomatoes, cotton, wheat, cantaloupe and garbanzo beans. The farm employs 8 full-time workers, 10 casual workers (working 1-12 weeks per year), 10 seasonal workers (working 13-37 weeks per year) and 5 family members.

The farm owner stated he has a written injury and illness prevention program, set up by his workers' compensation insurance carrier. However, because a site visit was not allowed, the nurse was unable to review it. A written program is required to comply with Title 8 California Code of Regulations 3203 -- Injury and Illness Prevention Program. (As of July 1, 1991 the State of California requires all employers to have a written seven point injury prevention program: 1. designated safety person responsible for implementing the program; 2. mode for ensuring employee compliance; 3. hazard communication; 4. hazard evaluation through periodic inspections; 5. injury investigation procedures; 6. intervention process for correcting hazards; and 7. provide safety training and instruction.)

The injured worker had worked for the farm owners as a seasonal worker for the past two years. During this time he had worked as an irrigator, tractor driver and service person (providing maintenance on different farm machinery). On the day of the incident (approximately four months after he started working during this season) he was being trained to service and operate tomato harvesters. He said he had received health and safety training for the work tasks previously assigned, such as tractor safety and electrical safety relating to irrigation. However, he had not received any safety training on burning materials.

## INCIDENT

At approximately 3:00 p.m. on June 18, 1993, a 23 year-old Hispanic male farm worker was servicing tomato harvesters in the shop area of a farm. During his interview with NURSE staff, the injured worker said that on the day of the incident one of the farm owners assigned him a new work task. The owner told him to load some boxes full of empty containers into a bin towed by a tractor. The injured worker mentioned to the nurse that the empty containers originally contained a liquid pesticide. He was instructed to drive the tractor to a field approximately one-quarter mile away and burn the boxes and containers by pouring gasoline over them.

A few seconds after throwing a match on the boxes an explosion occurred. Standing approximately three feet away, the farm worker was burned on the face, arms, hands and neck by the flames. The injured worker

ran back to the shop area. The owner was still in the shop. Certified in first aid, he poured cool water over the worker's burns. However, the injured worker was in extreme pain and asked the farm owner to take him to the doctor. The owner then drove the farm worker to the nearest medical clinic approximately 20 miles away.

Upon arrival at the clinic, the owner told the medical staff the injured worker was burned while burning a wheat field using a butane torch. During the telephone interview with NURSE staff, the owner also gave the same details regarding the incident. Medical clinic staff noted the injured worker's scalp and nasal hair were singed. He also had first and second degree burns to his nasal bridge, upper and lower lip, cheeks, forearms, hands and neck. He was given an injection for pain control. His burns were cleaned and covered with an antibacterial ointment.

The doctor referred the injured worker for further evaluation to the emergency department of a Level 1 Trauma Center because of the extent and nature of his burns. The farm owner drove the injured worker to the trauma center approximately 40 miles away. Upon evaluation, he was referred to the burn unit where his burns were further treated, and he was released.

The injured worker returned to the burn unit for continuing follow-up. Follow-up appointments consisted of changing his dressings and receiving pain control medication. He did not require skin grafts or any other plastic surgery. On the follow-up visit of July 7, 1993, the injured worker was released to return to work. Returning to the same farm where the incident occurred, the farm worker worked for approximately three weeks and then was laid off. Since then, he has been working intermittently 2-3 days at a time. However, the owner does not assign the injured worker his previous job tasks; instead, he has been assigned tasks that require a lower skill level.

## PREVENTION STRATEGIES

1. Employers should not allow farm workers to be exposed to hazardous work environments. Burning materials of any kind under any circumstances can create a hazardous environment for a worker. Wheat fields are burned to remove wheat stubble to allow planting the following year. For this, agricultural burn permits are issued to farmers by the Pollution Control Board. Besides a permit, there is a daily advisory issued, depending on atmospheric and environmental conditions, which tells farmers if they can burn any agricultural materials that day.

Although in this incident the farm owner stated he had a burn permit, there was an advisory issued not to burn on the incident day. In this incident, the farm owner should not have instructed the injured worker to burn any materials. Furthermore, under no circumstances should containers with pesticides (empty or full) be disposed of by burning.

2. Employers should provide and require workers to use personal protective equipment. In this incident, because the farm worker was instructed to burn materials, he should have been provided with fire protective clothing, including gloves, coat and a helmet equipped with a face shield. If the injured worker had been wearing protective clothing his burns could have been prevented (Title 8 California Code of Regulations 3380(a): Personal protective devices of the proper type and design shall be provided to eliminate the hazard.)
3. Employers should not ask workers to accomplish tasks they are not trained to perform. In this incident, the injured worker was asked to perform a job that he had no safety training in. Burning materials exposed the farm worker to flames and fumes, which are potentially hazardous. The farm worker was not trained to recognize and control these hazards. In this incident, if the farm worker had received safety training on burning materials, he may have known he was exposing himself to a hazardous situation and been able to prevent being burned (Title 8 California Code of Regulations 3203: Injury and Illness Prevention Program.)
4. Workers should be issued portable communication devices to call for help in emergencies. Also, employers should assign potentially hazardous work tasks in isolated locations to teams of at least two workers. In this incident, the farm worker, who was working alone, had to run approximately one-quarter mile after being burned to get help. In this incident, the lack of immediate communication with the farm owner resulted in a delay of first aid and medical treatment for the injured worker.
5. Employers should have an appropriate emergency medical response plan. This includes supervisors and workers immediately calling 911 when someone is injured. In this incident, the owner did not call 911, but drove the burned farm worker by private vehicle to a medical facility. If the injured worker's condition had deteriorated (e.g., if he developed breathing problems due to smoke inhalation), the

owner could not have provided adequate emergency medical care to the injured worker.

### FURTHER INFORMATION

For further information concerning this incident or other agriculture-related injuries, please contact:

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The NURSE (Nurses Using Rural Sentinel Events) project is conducted by the California Occupational Health Program of the California Department of Health Services, in conjunction with the National Institute for Occupational Safety and Health. The program's goal is to prevent occupational injuries associated with agriculture. Injuries are reported by hospitals, emergency medical services, clinics, medical examiners, and coroners. Selected cases are followed up by conducting interviews of injured workers, co-workers, employers, and others involved in the incident. An on-site safety investigation is also conducted. These investigations provide detailed information on the worker, the work environment, and the potential risk factors resulting in the injury. Each investigation concludes with specific recommendations designed to prevent injuries, for the use of employers, workers, and others concerned about health and safety in agriculture.