- The wood/brush chipper should be fed from the side of the centerline.

- The chipper operator should immediately turn away from the feed chute when brush is taken into the rotor.

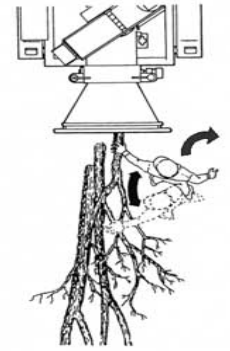

Illustration is viewed from above, looking down on the machine (Courtesy of Michigan Occupational Safety and Health Administration, Pub OSC-6125).

- The chipper chute should never be raised or removed while the rotor is turning.

- Loose clothing, gauntlet-type gloves, rings, and watches are not to be worn by workers feeding the chipper.

- Small branches should be fed into the wood/brush chipper with longer branches or by utilizing a long stick for pushing.

- Hands or other parts of the body should not be placed into the in-feed hopper.

- Leaning into or pushing material into the in-feed hoppers with your feet is prohibited.

- Always stop the wood/brush chipper before clearing any obstructions from the in-feed hopper.

- Use lockout/tagout procedures when performing any maintenance on wood/brush chippers.

Had the victim received training in the proper use and safe work practices of using wood chipper machinery, he would have been aware that his chipper was missing important features that are essential to safe operation. With appropriate training, it would have been more likely that the victim would have recognized that brush cannot be fed safely into a chipper without a feed chute and would not have used his foot to push brush into this machine.

Recommendation #3: Ensure that wood chippers are never operated alone.

Discussion: Using a co-worker as a safety watch is mandated in many high-risk occupations to help prevent injuries. When a wood chipper is in operation, at least one worker in addition to the operator should be located in the immediate vicinity of the work area and in close contact with the operator. In this incident, the victim's son was the only other person at the work site, and he was performing other functions. A designated safety watch stationed near the chipper may have prevented the victim from using his foot to push the material into the chipper, or may have been able to shut the machine off before the victim's injuries were so extensive.

References:

California Code of Regulations, Subchapter 7. General Industry Safety Orders Group 3. General Plant Equipment and Special Operations Article 12. Tree Work, Maintenance or Removal §3424. Mobile Equipment. (c) Brush Chippers. §3428. Operating Rules.

Safety Note – University of California, Agriculture and Natural Resources, Environmental Health and Safety. November 2005 Safety Note #91 - BRUSH CHIPPER SAFETY

The International Society of Arboriculture (ISA): http://www.isa-arbor.com

The Tree Care Industry Association (TCIA) http://www.tcia.org/index.aspx

http://www.cdc.gov/niosh/face/In-house/full200021.html

http://www.cdc.gov/niosh/face/stateface/ny/05ny034.html

http://www.cdph.ca.gov/programs/ohb-face/Documents/00ca010.pdf

http://www.osha.gov/dts/shib/shib041608.html

http://safety.ucanr.org

http://www.youtube.com/watch?v=cDzqMBDnPKI&feature=related

http://www.youtube.com/watch?v=hme313QXkIE

http://www.youtube.com/watch?v=7NKZM9IISEk&feature=youtu.be

http://www.tcia.org/articles/magazine/TCI0309_p8.htm

OSHA Hazards of Wood Chippers
http://www.osha.gov/dts/shib/shib041608.html

ANSI Z 133.1 – 2006, American National Standard for Arboricultural Operations Safety Requirements.

EXHIBITS:

Exhibit 1. The wood chipper involved in this incident.

Exhibit 2. Front view of the wood chipper.

Exhibit 3. Side view of the wood chipper.

Exhibit 4. A rear view of the wood chipper.

Exhibit 5.
The in-feed hopper where brush and limbs are fed into the wood chipper.

Exhibit 6.
Alternate view of the in-feed hopper without a feed table.

Exhibit 7. The blades attached to the rotating drum that chip brush.

Exhibit 8. The control panel on the wood chipper.

Exhibit 9. The wire clip used to shut off power to the wood chipper.

Exhibit 10. The steep hillside where the incident occurred.

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September 20, 2011

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FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The California Department of Public Health, in cooperation with the Public Health Institute and the National Institute for Occupational Safety and Health (NIOSH), conducts investigations of work-related fatalities. The goal of the CA/FACE program is to prevent fatal work injuries. CA/FACE aims to achieve this goal by studying the work environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact. NIOSH-funded, state-based FACE programs include: California, Iowa, Kentucky, Massachusetts, Michigan, New Jersey, New York, Oregon, and Washington.

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Additional information regarding the CA/FACE program is available from:

California FACE Program
California Department of Public Health
Occupational Health Branch
850 Marina Bay Parkway, Building P, Third Floor
Richmond, CA 94804