

Case 277. 37-year-old prep cook at a restaurant died from complications of heat stress.

A 37-year-old male prep cook at a restaurant died from complications of heat stress. He started work at 9:00 a.m. He usually worked until either 2:00 p.m. or 4:00 p.m., depending upon the day and the lunch crowd. Before lunch, he would chop food, prepare soups and sauces and baked bread. He was not directly over the grill, but would stir sauces and soups during the lunch hours. There was an exhaust fan over the grill. The kitchen was not air conditioned. During the lunch hour, employees were not permitted to take a break. Health rules do not permit water “on the line” – it can be kept a specified distance away, but not right next to them. The restaurant had an air conditioned room where employees could go on break, wrap napkins around eating utensils, etc. At work, he wore cotton clothing; he did not wear a chef’s jacket over his clothes. His work shift on the day of the incident was 8:50 a.m. to 12:20 p.m. He complained to his supervisor of not feeling well and he was sent home. When he went home, he went to his garage where his “man-cave” was located. Neither his home nor the garage was air conditioned. The garage had a fan. He was found dead on his couch in the garage in the late afternoon. The outside temperatures the week prior to his death ranged from 89°F – 98°F.

MIOSHA conducted wet bulb glove temperature (WBGT) measurements during their inspection. In the afternoon kitchen temperatures reached 83°F, when breaks were required. The WBGT is an index of the heat stress in humans when work is being performed in a hot environment. The dry bulb temperature was measured at 87°F. During the MIOSHA investigation, the compliance officer noted:

- a. Employees were exposed to radiant heat during the cooking process at the oven and at the simmering pots in prep cook, at the pizza oven, and the oven, fryer, stove, and steam table at the cooking station.
- b. Breaks were not taken by employees according to the ACGIH® recommendations for frequency found in Table 2 of the Heat Stress section of the Threshold Limit Values (TLV) booklet. Employees were not allowed sufficient recovery time for heat exposure. The employer did not establish a break scheduled for kitchen employees.
- c. Neither management nor employees had received training on the signs of symptoms of heat stress.
- d. The employer did not screen employees to identify those employees more susceptible to heat.

The MIOSHA General Industry Safety and Health Division issued the following Serious citations to the employer at the conclusion of its investigation.

SERIOUS: MICHIGAN OCCUPATIONAL SAFETY AND HEALTH ACT, ACT 154, P.A. 1974, AS AMENDED, SECTION 11(a)

The employer did not furnish to each employee, employment and a place of employment which was free from recognized hazards that were causing, or were likely to cause, death or serious physical harm to the employee: Employees were exposed to hazards associated with working in a hot environment (i.e. hot and humid conditions) during cooking and kitchen job tasks that could lead to serious harm or death to employees. One employee died due to heat-related illness from heat exposure while performing prep cook job duties.

One feasible abatement method, among others, to correct this hazard is to develop a heat stress management program that provides specific procedures to be followed for heat-related emergency situations; and provisions requiring first aid to be administered immediately to employees displaying symptoms of heat-related illness and also ensure that employees were

protected from heat-related illnesses to help them recognize and avoid heat stress-related illnesses; and hazards associated with working in a hot environment.

A comprehensive and effective heat stress management program includes:

Heat reduction and Ventilation – shield employees from radiant heat sources. Provide good hood extractor maintenance over the stoves, grills, and ovens so they capture the heat and humidity that comes from foods and to avoid that it crosses into the kitchen prep area. Provide cooling garments (vests, bandanas) that can be worn to reduce the heat exposure to employees and provide air conditioning or portable air chillers.

Administrative Controls – Establish provisions for a work/rest regimen so that employee exposure to high temperatures is decreased by decreasing the work rate and increasing the length and frequency of rest periods. This regimen should include mandatory, regularly scheduled hourly breaks. Set acceptable exposure times to heat to allow for sufficient recovery for employees exposed to heat, and limit physiological strain by reducing heavy activity. Provide routine breaks in a cool environment according to the ACGIH recommendations for frequency. Purchase a temperature monitoring device and use a tracking procedure to monitor actual temperature in all areas of the restaurant.

Training – train employees and supervisors by providing accurate verbal and written instructions about heat stress, including self-determination of exposures, reporting of illnesses, and specific procedures to be followed for heat-related emergency situations.

Heat stress hygiene practices – encourage fluid replacement and the use of proper clothing. Employees should drink small volumes (approximately 1 cup) of cool water every 20 minutes.

Medical surveillance – allow pre-placement screening to identify those employees susceptible to systemic heat injury.

The employer is not limited to the abatement methods suggested by MIOSHA; the methods explained are general and may not be effective in all cases. Other methods of abatement may be equally or more appropriate. Ultimate responsibility for determining the most appropriate abatement rests with the employer, given its extensive knowledge of specific conditions at its worksite(s).

SERIOUS: RECORDING AND REPORTING OF OCCUPATIONAL INJURIES AND ILLNESSES, PART OSH 11, RULE 1139(1):

An oral report of a work-related incident resulting in a fatality or the inpatient hospitalization of three or more employees was not made within eight hours after the occurrence to the Michigan Department of Energy, Licensing and Regulatory Affairs, Michigan Occupational Safety and Health Administration, State Secondary Complex, 7150 Harris Drive, P.O. Box 30644, Lansing, MI 48909, phone 1-800-858-0397.

One employee died due to heat-related illness from heat exposure while performing prep cook job duties. The employer did not report the fatality to MIOSHA.