



## Hawk's Nest Tunnel Disaster:

### *Worst Industrial Disaster in U.S. History*

An observer in 1930 said, "That's where the water's going in. They'll build a dam across the river there, and then the water will run in that hole. It comes out down near Gauley Bridge." The completed tunnel would be three miles long, with a descent of 162 feet, straight through Gauley Mountain in West Virginia. The water coming out the other end of the tunnel would flow over four Westinghouse turbines, and "the generated electric power would then be carried over six miles of cable, strung on 23 towers. Crossing and re-crossing the river and surmounting other natural obstacles, it would reach the plant at Boncar." Boncar (subsequently renamed Alloy) was a village where Union Carbide Corporation planned to build a new metallurgical complex to manufacture ferro-silicate alloys that required far greater power than was available before 1930.

The problem with building the tunnel was that hundreds of men, possibly 764 (estimates vary) or more (of a total 5,000 on the work force), died of an acute rapidly progressive form of silicosis during the breakneck construction. Most of the deceased workers were African-American migrants who worked underground.

"What worsened the health conditions inside the tunnel was the use of dry drill bits and inadequate ventilation systems in violation of standard practice. The practice of wetting drill bits controlled airborne dust to some degree, but wet drill bits also made for slower drilling, impeding the progress of the tunnel, and thereby cut into contractor profits. Drilling began in March 1930 and was completed in December 1931, three months ahead of schedule.



One indicator of the stress of the tunnel work was the extraordinary work force turnover rate, as documented in payroll statistics. "Sixty percent of the men worked on the tunnel less than two months, 80 percent less than six months, and 90 percent less than a year. The average length of employment was 15 weeks for a black worker, 16 for a white worker."

The epidemic of silicosis that slew hundreds of men during the building of the Hawk's Nest Tunnel qualifies as perhaps the worst industrial disaster in American history.



Together with TOSHA is the newsletter of the Division of Occupational Safety and Health.

Karla Davis  
Commissioner

John Winkler  
TOSHA Administrator

220 French Landing Drive  
Nashville, TN 37243

(615)741-2793

FAX (615)741-3325

Accident Reporting  
1-800-249-8510

TDD 1-800-475-1351

[www.tn.gov/labor-wfd](http://www.tn.gov/labor-wfd)

Editor Sandra Bennett  
Layout & Design  
Jeff Hentschel

Comments and suggestions are welcome.

Inquiries regarding Together With TOSHA should be directed to the TOSHA Division Training Section:  
(615)741-5726



Together with TOSHA is a quarterly publication of the Tennessee Department of Labor and Workforce Development; April 2011; Auth. No. 337352; 17,500 copies; \$0.7 per copy. The Tennessee Department of Labor and Workforce Development is committed to principles of equal opportunity, equal access, and affirmative action. Auxiliary aids and services are available upon request to individuals with disabilities.

## Special Emphasis Program

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### U P D A T E

In order to focus inspection activity in the areas of the most concern, federal OSHA has instituted several National and Special Emphasis Programs. TOSHA is participating in a number of them. Here is an update on that activity, also with information on the Compliance Directives that describe policies and procedures for inspection of relevant workplaces. The directives can be found on [www.osha.gov](http://www.osha.gov).

#### **Combustible Dust (Reissued)-CPL 03-00-008**

For workplaces that create or handle combustible dusts. In some circumstances these dusts may cause a deflagration, other fires, or an explosion. TOSHA is participating in this program.

#### **Flavoring Chemicals/Diacetyl-CPL 03-00-011**

To identify and reduce or eliminate exposures to butter-flavoring chemicals used in microwave popcorn manufacturing facilities. TOSHA is participating in this program, although there are not identified companies in Tennessee engaged in this activity.

#### **Hazardous Machinery-CPL 03-00-003**

To identify and to reduce workplace machinery and equipment hazards which are causing or likely to cause amputations. TOSHA is participating in this program.

#### **Hexavalent Chrome-CPL 02-02-076**

TOSHA is participating in this program.

#### **Lead-CPL 03-00-009**

To direct inspection efforts to address lead exposures in the workplace, including General Industry and Construction. TOSHA is participating in this program.

#### **Nursing Home Industry**

TOSHA has completed this activity.

#### **Petroleum Refineries- CPL -3-00-010**

TOSHA has completed this activity.

#### **Shipbreaking-CPL 02-00-136**

TOSHA will not participate in this program.

#### **Silica-CPL 03-00-037**

TOSHA will not participate in this program.

#### **Trenching and Excavation-CPL 02-00-069**

To inspect trenching and excavation activities wherever they are found in Tennessee. TOSHA is participating in this program.

#### **OSHA 300 Log Recordkeeping-10-02 (CPL 02)**

TOSHA has completed this activity.

In addition TOSHA has state special emphasis programs on occupational noise, carbon monoxide, amputations, and fall protection. TOSHA also has a targeting initiative on sharps injury prevention in hospitals and ambulatory surgery centers. You may find information on these initiatives at [www.tn.gov/labor-wfd/tosha.html](http://www.tn.gov/labor-wfd/tosha.html).

## Heat Stress Alert Water, Rest, Shade

Summer in Tennessee brings the sun and high temperatures outdoors. Working in the sun and heat can cause heat illness, which can be a matter of life and death. Workers die from heat stroke every summer, and every death is preventable.

Deaths from working in the heat have occurred in Tennessee in recent years.

When heat stroke doesn't kill immediately, it can shut down major body organs causing acute heart, liver, kidney and muscle damage, nervous system problems, and blood disorders. Having a serious injury or death occur at work affects everyone at the worksite. Workers suffering from heat exhaustion are also at great risk for accidents since they are less alert and can be confused.

### *Signs of Heat Stress*

Headache  
Dizziness or fainting  
Weakness  
Wet skin  
Irritability  
Thirst  
Nausea or vomiting  
**WARNING:** If you feel faint, confused or if you vomit - you need help fast!

### *Signs of Heat Stroke*

May be confused  
May be unable to think clearly  
May pass out  
May have seizures (fits)  
May stop sweating

### *Daily Checklist to Prevent Heat Stress or Stroke*

Drink water often  
Report heat symptoms early  
Rest in the shade  
Know what to do in an emergency

A training program designed to train workers to recognize heat stress is vital. A program can be obtained at [http://www.osha.gov/SLTC/heatillness/osha\\_heattraining\\_guide\\_0411.pdf](http://www.osha.gov/SLTC/heatillness/osha_heattraining_guide_0411.pdf)

Other information about heat stress is to be found at <http://www.osha.gov/SLTC/heatstress/index.html>

## **TOSHA TIPS**

**Condition:** No engineering and work practice controls used to eliminate or minimize exposure to bloodborne pathogens

**Potential Effects:** Exposure incidents involving contact with blood and body fluids infected with hepatitis B and/or C and HIV with possible transmission of infection to employees

**Standard:** 29 CFR 1030(d)(2)(i)

**Correction/prevention:** Section (d) of the bloodborne pathogen standards requires use of many engineering and work practice controls. Review this section of the regulation and ensure that all procedures as described are in place. Requirements include, among others, providing handwashing facilities which are readily accessible to employees and ensuring that employees wash their hands as soon as feasible after removal of gloves and other personal protective equipment. Never bend, recap, or remove contaminated needles or other sharps. Ensure that all sharps that are used for patient care are designed with engineered sharps injury prevention. Dispose of contaminated sharps, after the safety feature has been activated, in sharps containers that are puncture resistant, leakproof, closable, and labeled or color coded. Sharps with engineered sharps injury prevention protect not only the employee using the sharp, but downstream workers such as housekeeping staff and garbage handlers. If possible, all sharps used should be a safety sharp. If there are procedures for which such a device is not available or its use in a medical procedure would jeopardize the successful outcome of the procedure, document that in the Exposure Control Plan. Make sure the documentation can be substantiated by qualified medical personnel.

A Tennessee manufacturer of front and rear end suspensions for automobiles uses stamping presses, automated welders and manual-rework welders in their process. A formal complaint from an employee was filed with TOSHA, and an inspection was conducted at the facility. Monitoring revealed that employees were exposed above the Permissible Exposure Limit for welding fume in the rework booths, and press operators were overexposed to noise. A hearing conservation program was in place at the facility, but it was ineffective in protecting employees' hearing as evidenced by standard threshold shifts (STS) suffered by many employees. Recordable STS were not logged on the OSHA 300 log.

**To Prevent Incidents of Hearing Loss and Welding Fume Overexposure**

1. Institute engineering controls where feasible to reduce noise to levels as low as possible
2. Establish or monitor an existing hearing conservation program to ensure that the program is effective in protecting employees' hearing
3. Retrain and refit with hearing protectors all employees who sustain an STS
4. Monitor welders' exposure to welding fume and institute engineering controls to maintain exposure levels below the Permissible Exposure Limit
5. Ensure that welders wear appropriate respiratory protection while engineering controls are being instituted
6. Complete OSHA 300 logs and 301 forms and monitor the entries periodically to ascertain any trends that are occurring in the workplace
7. Contact TOSHA Consultative Services at 1-800-325-9901 for help