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COMMONWEALTH OF KENTUCKY  
OCCUPATIONAL SAFETY AND HEALTH  
REVIEW COMMISSION

KOSHRC NO. 2285-93

SECRETARY OF LABOR  
COMMONWEALTH OF KENTUCKY

COMPLAINANT

VS.

ARMCO STEEL COMPANY, L.P.

RESPONDENT

UNITED STEELWORKERS OF AMERICA  
AFL-CIO LOCAL 1865

AUTHORIZED  
EMPLOYEE REPRESENTATIVE

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DECISION AND ORDER  
OF THIS REVIEW COMMISSION

The secretary of labor, enforcer of the Kentucky occupational safety and health act (KRS chapter 338), issued citations to Armco for not testing the atmosphere within tunnels (defined by the citations as confined spaces) and for not maintaining constant communications between employees working in the tunnels and a watcher (monitor) outside. Aggrieved by the recommended order of our hearing officer upholding the citations, Armco Steel Company filed a petition for discretionary review under section 48 (1) of our rules of procedure (ROP).<sup>1</sup> We granted Armco's-petition and ordered briefs. Local 1865 did not file a brief.

Of critical importance in this case is the issue whether Armco's underground, reinforced concrete tunnels some 60 to 70 feet long, 7 feet high and 4 feet wide with one entrance are confined spaces under Kentucky's occupational safety and health (OSH)

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<sup>1</sup> Enacted as section 48 (1), 803 KAR 50:010.

regulations.

803 Kentucky Administrative Regulations (KAR) 2:200, section 2 defines a confined space as:

- (1) A space having... (a) Limited means for exit and entry, and
- (b) Ventilation of the space is lacking or inadequate, allowing for the potential accumulation of toxic air contaminants, flammable or explosive agents, and/or depletion of oxygen. (emphasis added)

In other words, a confined space has, one, limited access and, two, a potential for bad air (toxic, explosive or lacking in oxygen). Notice there is no specification about the size of the space. We conclude this means the definition is not factually dependent on the size of the space.

Although limited means of access and the potential for bad air defines a confined space, not its size, in many reported cases confined spaces are fairly small with narrow openings. But in a steel mill (Armco manufactures steel) everything is large size.

Our hearing officer found the tunnels are 60 to 70 feet long. Transcript of the evidence. (TE) 164. To get to them, workers descend two sets of stairs, one with 30 steps and the second with 14. TE 164. The underground tunnels, constructed out of concrete, are 7 feet tall and 4 feet wide. TE 18. There was only one entrance - down the 44 steps. TE 108. The exit is back up the same steps.

We find (and the cited cases confirm our judgment) confined spaces have great potential to cause injury and death to employees. Typically a worker enters a confined space without testing the air. Because of lack of oxygen or a toxic atmosphere, he falls

unconscious. Then one or more workers go to the rescue and when the fire department finally arrives, there are three or four dead employees in the space.

In Ed Taylor Construction v. OSHRC and Dole, 938 F.2d 1265 (11th cir. 1991)), CCH OSHD 29,432, for example, three employees entered a manhole below an artificial pond in front of a newly constructed building. The manhole, made out of reinforced concrete, held a pump used to drain the artificial pond periodically for cleaning and maintaining the underwater lights. Nothing was in the manhole except for the pump; there was no sewer tie in and no obvious toxic substances. But when the foreman came back to check on his men later, he found the three of them dead - overcome by lack of oxygen.

In Sanitation District #1, KOSHRC<sup>2</sup> #1350, two employees entered an underground chamber with sewer sludge on the bottom. When the foreman came back to check on them, both men lay face down in the sludge. They died before they could be rescued.

Another case about a submarine suggests, as does Armco in its brief, that confined spaces are hard to get into and out of because of the tiny openings. CBI Services, Inc., a federal review commission decision, CCH OSHD 29,924. Obviously small doors, ports or passageways make it difficult for workers to enter and exit but more importantly present obstacles to those attempting to rescue downed employees in the confined space.

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<sup>2</sup> Kentucky Occupational Safety and Health Review Commission. KRS 338.071.

We find in the instant case a 70 foot long tunnel with no other way out except up the 44 steps also makes it difficult and hazardous to effect the rescue of a downed employee - a good working definition of ,limited access. Armco employees must don self contained breathing apparatus and carry the downed employee perhaps the entire 70 feet putting the rescued employee in further danger because medical assistance, obviously, could not be performed inside a tunnel with bad air. While it is difficult to rescue a downed employee in a small space with a small opening, it is similarly difficult for rescuers wearing air tanks to traverse a 70 foot long tunnel with **44** steps, put the unconscious employee on a stretcher and **carry him back out the tunnel.**

**Without constant communication between watchers and employees working within a 70 foot long tunnel, employees stand a remote chance of rescue since no one will know about them until it is too late. Armco's clarifier foreman said the company's policy that employees entering the tunnels would check in using hand held radios before entering and upon resurfacing (there was no radio contact within the tunnel) was not enforced. TE 234 and 246. In any event the regulation when in effect requires "constant communication". 803 KAR 2:200, section 3 (4).**

**Armco** employees enter the tunnels regularly to repair pumps which help to purify water used in the large amounts required by steel makers. TE 226. They enter the tunnels alone without testing the atmosphere and without constant communication with others outside the tunnels. So if the tunnels are confined spaces,

then the company has violated the standard. We conclude, based on the evidence and the arguments of the parties, the hearing officer properly affirmed both citations - the tunnels are confined spaces according to the cited standard.

Armco's theory that a confined space must have a tiny opening is not supported by the language of the regulation or by the facts of this case.' James Kratt, labor's expert witness, testified that because of the size of the tunnels, it would be very difficult to reach a downed employee and evacuate him - there was only one way out. TE 193. We conclude the tunnels' limited means of exit,. their size and their potential for bad air renders a rescue attempt as hazardous as a rescue from a confined space with tiny spaces and openings. The confined space standard, as we interpret it, is written to, one, make entry into confined space safer and, two, facilitate rescue if necessary regardless of the size of the space. 803 KAR 2:200, section 4.

Armco makes the point the secretary's compliance officers did not enter the tunnels to take physical measurements or sample air for oxygen and contaminants. That is true. But company witnesses proved the precise dimensions of the tunnels about which labor's witnesses had already testified generally. TE 224. Prior to the inspection, Armco performed no atmosphere testing and did not provide communications between employees entering the tunnels and

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<sup>3</sup> Armco argues that if its tunnels are confined spaces, so are basements. Perhaps a basement underneath a steel mill with concrete on all sides which has only one way out and has the potential for the accumulation of explosive gasses would be a confined space too.

workers outside. TE 26 and 28.

After the labor cabinet issued citations, however, Armco's own industrial hygienist took a sophisticated air sampling instrument into the tunnel. He sampled for oxygen, toxic gasses, explosive gasses and carbon monoxide. The instrument took readings every 12 seconds and the Armco hygienist left the instrument in the tunnel for 10 hours. TE 311. He testified the condition of the tunnel (at the time of his test) was the same as when inspected by the compliance officers.

The Armco hygienist's instrument found no carbon monoxide. The tunnel had sufficient oxygen. The instrument found no toxic gasses or fumes. But the instrument found explosive gasses in the tunnel at 3 percent of the "lower explosive limit." TE 314.

A limited means of exit and entry and a potential for bad air (toxic and explosive gasses, carbon monoxide, lack of oxygen) in the tunnel is sufficient to prove a violation of the standard, however.' 803 KAR 2:200. If testing found 3 percent of the lower explosive limit for flammable or combustible gasses, that proves the potential for its accumulation and that more could accumulate - either with or without ventilation. Now as Armco would argue, 3

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<sup>4</sup> Our dictionary defines potential as "...the inherent ability or capacity for growth." Webster's II, 1988. Merrit Lake, Armco's expert witness, discussed "potential" in terms of probability of an occurrence. We reject that analysis because the regulation itself rejects probability in favor of potential. 803 KAR 2:200, section 2 (1) (b). Dr. Lake said the hazard presented by a confined space had to be supported by quantitative measurements. We find the 3 percent of the lower explosive limit for explosive gasses found by Armco's hygienist is a quantitative measurement which confirms the potential for bad air.

percent is a low number. But we the 3 percent is sufficient to confirm the potential for the accumulation of explosive gasses which triggers the confined space definition and standard. 803 KAR 2:200, section 2 (1) (b).

Since the company did not believe it was dealing with a confined space, it did not test the atmosphere prior to entry which (given a finding of a confined space) confirms citation 1, item 1.

Since the company did not regard the tunnels as a confined space, it did not make provisions for constant communications with employees entering the tunnels, confirming a violation of citation **1, item 2.**


Each citation carried a penalty of **\$5,000. The compliance officer (CO) assigned each a high severity factor due to the likely injury or illness which might occur. She found death the likely consequence. TE 30. She also assigned a high probability factor due to the number of employees who would be exposed, 7. TE 31. She said the number could be higher depending on the amount of maintenance required. She said the number of exposures, the frequency of exposure, the proximity to the point of danger all contributed to her finding of high probability. TE 31. That yielded a gravity based penalty of \$5,000. TE 32. She awarded no adjustment factors. Three thousand employees eliminated a size adjustment factor. TE 32.** The company had a recent serious violation which eliminated good faith and they had had serious violations within the last three years. TE 32. The penalties are affirmed.

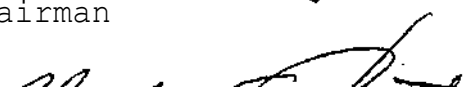
We affirm the recommended order which upholds citation 1, items 1 and 2 and adopt it as our own.


If abatement has not already been accomplished by respondent, we order him to do so within 30 days.

It is so ordered.

Entered June 4, 1996.

  
George R. Wagoner  
Chairman

  
Charles E. Yates  
Member

  
Donald A. Butler  
Member



Copy of the foregoing Order has been served upon the following parties in the manner indicated:

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This 5th day of June, 1996.



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