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United States Government **Department of Energy**

memorandum

DATE: DEC 24 2003

REPLY TO ATTN OF: Office of Health:C. Rick Jones:3-5926

SUBJECT: TWO-MAN/PERSON RULE CONCEPT REQUIREMENTS

TO: Paul M. Golan, EM-2

I wanted to bring to your attention the Occupational Safety and Health Administration (OSHA) and Department of Energy (DOE) requirements to assure that two workers, referred to as the "two-man rule," are present during some hazardous operations. Workers and their representatives have indicated concern that DOE contractors are reducing the use of the "two-man rule." To provide you with an accurate assessment of "two-man" requirements, the Office of Worker Protection Policy and Programs has undertaken a review of OSHA standards and DOE directives, including manuals and guides on the use of this concept, that you may use to evaluate the implementation of these requirements at your sites across the DOE.

The attached table provides this information in two sections: (1) OSHA Requirements; and (2) DOE Requirements. Each section provides a citation to the standard, as well as a short synopsis of the requirements. In addition to having a "two-man" requirement, OSHA also has standards that suggest the use of more than one person when performing certain hazardous operations. These standards are also included in the attached table.

DOE Order 440.1A, "Worker Protection Management for DOE Federal and Contractor Employees," requires that contractors follow all applicable provisions of 29 CFR part 1910 and part 1926; therefore, any work being undertaken by contractors who have included DOE Order 440.1A in their contracts are required to follow all OSHA requirements for a "two-man rule."

The attached is provided for your information and use should you desire to review implementation of these requirements across your sites to demonstrate your commitment to providing a safe workplace and address worker issues as they are brought to your attention. If you would like to discuss this further, please do not hesitate to give me a call at 301-903-5926.

C. Rick Jones

C. Rick Jones
Deputy Assistant Secretary
for Health

Attachment

cc w/attachment:
James J. Mangeno, NA-1
Milton D. Johnson, SC-3
Elizabeth A. Connell, NE-1

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Table 1
OSHA Regulations and DOE Policies Requiring the "Two-man/person" Rule Concept

OSHA Regulations/ DOE Orders/Manuals/Guides	Section	Requirement
OSHA Requirements		
29 CFR 1910.120 Hazardous waste operations and emergency response	(a)(3) Definition	Buddy system means a system of organizing employees into work groups in such a manner that each employee of the work group is designated to be observed by at least one other employee in the work group. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency. IDLH or Immediately dangerous to life or health means an atmospheric concentration of any toxic, corrosive or asphyxiant substance that poses an immediate threat to life or would interfere with an individual's ability to escape from a dangerous atmosphere.
	(q)(3)(v)	Procedures for handling emergency response. The individual in charge of the ICS shall limit the number of emergency response personnel at the emergency site, in those areas of potential or actual exposure to incident or site hazards, to those who are actively performing emergency operations. However, operations in hazardous areas shall be performed using the buddy system in groups of two or more.
	(q)(3)(vi)	Back-up personnel shall be standing by with equipment ready to provide assistance or rescue. Qualified basic life support personnel, as a minimum, shall also be standing by with medical equipment and transportation capability.
29 CFR 1910.134 Respiratory protection	(g)(3)	Procedures for IDLH atmospheres. For all IDLH atmospheres, the employer shall ensure that: (i) One employee or, when needed, more than one employee is located outside the IDLH atmosphere; (ii) Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere; (iii) The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue;

OSHA Regulations/ DOE Orders/Manuals/Guides	Section	Requirement
	(g) (4)	Procedures for interior structural firefighting. In addition to the requirements set forth under paragraph (g)(3), in interior structural fires, the employer shall ensure that: (i) At least two employees enter the IDLH atmosphere and remain in visual or voice contact with one another at all times; (ii) At least two employees are located outside the IDLH atmosphere;
29 CFR 1910.146 Permit required confined spaces	(b) Definition	"Attendant" means an individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program. "Authorized entrant" means an employee who is authorized by the employer to enter a permit space.
	(d)(6)	Provide at least one attendant outside the permit space into which entry is authorized for the duration of entry operations; NOTE: Attendants may be assigned to monitor more than one permit space provided the duties described in paragraph (i) of this section can be effectively performed for each permit space that is monitored. Likewise, attendants may be stationed at any location outside the permit space to be monitored as long as the duties described in paragraph (i) of this section can be effectively performed for each permit space that is monitored.
	(d)(7)	If multiple spaces are to be monitored by a single attendant, include in the permit program the means and procedures to enable the attendant to respond to an emergency affecting one or more of the permit spaces being monitored without distraction from the attendant's responsibilities under paragraph (i) of this section;
	(d)(8)	Designate the persons who are to have active roles (as, for example, authorized entrants, attendants, entry supervisors, or persons who test or monitor the atmosphere in a permit space) in entry operations, identify the duties of each such employee, and provide each such employee with the training required by paragraph (g) of this section;

OSHA Regulations/ DOE Orders/Manuals/Guides	Section	Requirement
29 CFR 156 Fire brigades	OSHA Standard Interpreta-tion dated 5/95 7, updated 4/99 to reflect change in policy.	Interior structural fire fighting. It is universally recognized that conditions present during an advanced Interior structural fire create an IDLH. The Fire Brigade standard does not directly address the minimum number of fire fighters required when engaged in operations presenting an IDLH atmosphere. Regarding the use or SCBA's in IDLH atmospheres, paragraph 1910.156(f)(1)(i) does refer to the Respiratory protection standard, 1910.134. The Respiratory Protection standard and industry practice (as codified through the NFPA standards) require that a minimum of four fire fighters be involved in emergency operations during interior structural fire fighting. Two act as a team in the hazard area, and two stand by outside the hazardous area to monitor the operation and provide assistance should a rescue be necessary. OSHA regulations and NFPA standards specifically require communication between members of the team. Fire fighters working in teams of two or more (buddy system) in hazardous areas (IDLH atmospheres) are required to maintain communications (voice, visual contact, or tethering with a signal line). Radios or other means of electronic contact shall not be substituted for direct visual contact between employees within the individual team in the danger area.
29 CFR 1910.180 Crawler locomotive and truck cranes	(h)(3)(xii)	When two or more cranes are used to lift one load, one designated person shall be responsible for the operation. He shall be required to analyze the operation and instruct all personnel involved in the proper positioning, rigging of the load, and the movements to be made.
29 CFR 1910.252 Welding, cutting, and brazing; General requirements	(a)(2)(iii)(A)	Fire watchers shall be required whenever welding or cutting is performed in locations where other than a minor fire might develop, or any of the following conditions exist:

OSHA Regulations/ DOE Orders/Manuals/Guides	Section	Requirement
	(a)(2)(ii)(B)	Fire watchers shall have fire extinguishing equipment readily available and be trained in its use. They shall be familiar with facilities for sounding an alarm in the event of a fire. They shall watch for fires in all exposed areas, try to extinguish them only when obviously within the capacity of the equipment available, or otherwise sound the alarm. A fire watch shall be maintained for at least a half hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires.
29 CFR 1910.103 Hydrogen	(c)(4)(ii)	"Attendant." A qualified person shall be in attendance at all times while the mobile hydrogen supply unit is being unloaded.
29 CFR 1910.110 Storage and handing of liquefied petroleum gases	(b)(14)(i)	Transfer of liquids. The employer shall assure that: at least one attendant shall remain close to the transfer connection from the time the connections are first made until they are finally disconnected, during the transfer of the product.
29 CFR 1910.269 Electric power, generation, transmission and distributed; Electrical protective equipment	(l)(1)(i)	At least two employees must be present during: (1) Installation, removal, or repair of lines energized at more than 600 volts; (2) Installation, removal, or repair of de-energized lines if an employee is exposed to contact with
		other parts energized at more than 600 volts; (3) Installation, removal, or repair of equipment, such as transformers, capacitors, and regulators, if an employee is exposed to contact with parts energized at more than 600 volts; (4) Work using mechanical equipment, other than insulated aerial lifts, near parts energized at more than 600 volts; and (5) Other work exposing an employee to electrical hazards greater than or equal to those posed by operations that are specifically listed above.

OSHA Regulations/ DOE Orders/Manuals/Guides	Section	Requirement
29 CFR 1910.401 Commercial diving-Scope and application	(a)(2)(vi)(B)	Diving control (safety) board, with the majority of its members being active divers, which shall at a minimum have the authority to: Approve and monitor diving projects; review and revise the diving safety manual; assure compliance with the manual; certify the depths to which a diver has been trained; take disciplinary action for unsafe practices; and, assure adherence to the buddy system (a diver is accompanied by and is in continuous contact with another diver in the water) for SCUBA diving.
29 CFR 1910.402 Commercial diving-Definitions	(9)	"Standby diver": The requirement that the standby diver be at the dive location, which by definition is a location- at the surface or on a vessel, eliminates the possibility that another diver in the water or at another dive location would be considered a standby diver. The standby diver does not necessarily have to be fully dressed but must be in that degree of readiness, which will allow him to render the necessary assistance in a timely manner. A degree of readiness means to be clothed and equipped ready to enter the water at a moment's notice. The temperature at some dive locations makes it extremely uncomfortable to a standby diver fully clothed in a wet or dry suit, so it may be necessary to wear more comfortable dress, yet adequate enough to provide protection when the standby diver enters the water. Such articles of gear as face masks, air cylinders and harness can be quickly donned and need not be worn on standby.
29 CFR 1926.502 Fall protection systems criteria and practices	(h)(1)	The employer shall designate a competent person to monitor the safety of other employees and the employer shall ensure that the safety monitor complies with the following requirements:
	(h)(1)(i)	The safety monitor shall be competent to recognize fall hazards;
	(h)(1)(ii)	The safety monitor shall warn the employee when it appears that the employee is unaware of a fall hazard or is acting in an unsafe manner;
	(h)(1)(iii)	The safety monitor shall be on the same walking/working surface and within visual sighting distance of the employee being monitored;
	(h)(1)(iv)	The safety monitor shall be close enough to communicate orally with the employee; and

OSHA Regulations/ DOE Orders/Manuals/Guides	Section	Requirement
	(h)(1)(v)	The safety monitor shall not have other responsibilities which could take the monitor's attention from the monitoring function
29 CFR 1926.803 Compressed air	(h)(1)	At all times there shall be a thoroughly experienced, competent, and reliable person on duty at the air control valves as a gauge tender who shall regulate the pressure in the working areas. During tunneling operations, one gauge tender may regulate the pressure in not more than two headings: Provided, That the gauge and controls are all in one location. In caisson work, there shall be a gauge tender for each caisson.
DOE Requirements		
DOE O 440.1A Worker protection management for DOE federal and contractor employees	Attachment 2. Sec. 15.	Fire Protection. 15.c. Fire watch requirements in National Fire Protection Association (NFPA) 51B, Section 3-3.3 (of the 1994 edition or equivalent section of subsequent editions), are expanded to include responsibility for the safety of the welder(s) in addition to that of the facility. NFPA, 51B, chapter 5 Fire Prevention Precautions. 5.4.1—A fire watch shall be required by the PAI when hot work is performed in a location where other than a minor fore might develop or where the following conditions exists: (1) Combustible materials in building construction or contents are closer than 11m (35ft) to the point of operation. (2) Combustible materials are more than 11-m (35 ft) away from the point of operation but are easily ignited by sparks. (3) Wall or floor openings within an 11-m (35 ft) radius expose combustible materials in adjacent areas, including concealed spaces in walls or floors. (4) Combustible materials are adjacent to the opposite side of partitions, walls, ceilings, or roofs and are likely to be ignited.

OSHA Regulations/ DOE Orders/Manuals/Guides	Section	Requirement
DOE O 452.2B Safety of nuclear explosive operations	7.	Two-Person Concept. The two-person concept requires that a minimum of two authorized people must be present during all nuclear explosive operations and during other operations designated by the operations office. Operations office managers responsible for nuclear explosive operations must establish implementing instructions for the two-person concept. The two people must be in a position to detect incorrect or unauthorized acts and— (a) be certified in the Personnel Assurance Program, (b) have technical knowledge of the task being performed, and (c) be knowledgeable of pertinent safety and security requirements.
DOE M 231.1-2 Occurrence reporting and processing of operation information	6. Reporting criteria	(8) A violation of the two-person concept of operations.
DOE G 151.1-1 V4-2 Protective actions and reentry	2.5.2 Reentry operations	Provide guidance on selection of reentry team members. Teams should consist of the minimum number required to perform the job but should not be less than two persons.
DOE M 474.1-1B Manual for control and accountability of nuclear materials	Chapter III 3.a.	Material Surveillance Mechanism. Material surveillance methodologies must consist of either automated means (e.g., monitoring devices, sensors, or other instrumentation), visual surveillance/direct observation (e.g., two-person rule, monitoring by external personnel, or other alternative safeguards measures that provide the necessary detection.
	b.(1)(c)	All persons in secure storage areas must be under constant surveillance (e.g., two-person rule or equivalent) at any time the storage area is not locked and protected by an active alarm system.
DOE M 473.1-1 Physical protection program manual	Chapter VIII Sec. 4.	(c) (2) Radio frequency alarm communications. Other requirements. In addition to the other requirements, the site must implement the following procedures for the protection of Category I and II quantities of SNM. Radio frequency alarm communication must—(1) operate on Government frequency bands; (2) be installed and maintained using the 'two-person" rule;