



Seismic Explosives Fatality

CAGC SAFETY ALERT

First Published 03 - 2000

Canadian Association of Geophysical Contractors

1045, 1015 - 4th Street SW

Calgary, Alberta

T2R 1J4

Phone: 403 265 0045

Fax: 403 265 0025

E-mail: info@cagc.ca

Safety Alert

03-00

Sequence of Events

On February 23, 2000, a driller's helper was killed during a seismic operation near Wabasca, Alberta. The worker died when a primed 0.5-kg charge or an explosive charge and a detonator in close proximity, detonated when held close to his lower abdomen.

Possible Causes

There is strong evidence that a 4.5 volt DURACELL battery was very close to the charge when it detonated and it appears very likely that this was the origin of the electrical energy required to initiate the detonator. It is extremely unlikely that radio frequency energy or static electricity contributed to the initiation. The worker had abruptly deviated from standard procedures and for reasons unknown, he had walked beyond the front of the drill-rig carrying the explosive components.

Samples of the explosives and the detonators on the rig have been submitted to NRCan, Canada for evaluation. This is routine procedure and there is no reason at this time to suspect that the explosive components were defective in any way.

Recommendations

- Emphasize with seismic explosive workers that all batteries are a source of electrical energy, so they should always be kept separate from explosive materials;
- Rules and safe procedures pertaining to primed charges must be reviewed. It is expressly forbidden to prime charges in advance or to do anything with primed charges other than load them directly into the drill-hole immediately after priming.

In a follow up to the Safety Alert above, Alberta Human Resources and Employment, Workplace Healthy and Safety are investigating the circumstances surrounding this tragic accident. The following recommendations are important reminders for all employers and workers involved in our industry.

Recommendations

Every employer is obligated to ensure that the workers engaged in the work of that employer are aware of their responsibilities and duties, as outlined in the Occupational Health and Safety Act and Regulations. When handling and preparing explosives, workers must be familiar with industry practice, company policies and procedures, precautionary measures concerning the products being used and the regulations pertaining to explosive safety in Alberta.

Throughout the Occupational Health and Safety Act, Explosives Safety Regulation, the responsibilities of the employer, supervisor and worker are clearly outlined. The following references refer to the importance of established safe procedures, current safety regulations and who is in charge when explosives are being prepared:

- *Without relieving an employer of his responsibility, a blaster shall have direction and control of the blasting area and he shall ensure that the complete operation is carried out in accordance with established safe procedures and current safety regulation'*
- *Without relieving an employer of his responsibility, when more than one worker has been authorized by these regulations to handle, prepare and fire an explosive, the employer shall designate one of the authorized workers to be in charge of all blasting operations'*
- *Without relieving the employer of his responsibility, the authorized worker designated by an employer under section 9 shall ensure that all operations are carried out in accordance with established safe procedures and current safety regulations.*

In addition, the precautionary measures concerning the products being used at a work site, as stipulated by the manufacturer/supplier, must be understood and strictly adhered to.