



SAFETY ALERT # 01 – 2009

TRANSFER OF ELECTRICITY WHILE MOVING A HIGH LOAD

RELEASE DATE: MARCH 15, 2009

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| Function: Oilfield Trucking | Incident Date: August 3, 2008 |
| Location: Onshore | Location Detail: Wellsite |
| Incident Type: Near Miss | Country and Region: Canada, West Central Alberta |

Summary:

A bed truck transporting a mud tank off a lease came into close proximity with an overhead power line, causing a transfer of electricity.

Description of Incident:

The incident occurred as the bed truck exited the lease and drove onto the roadway. The truck was entering the north ditch when the change in elevation to the back of the load raised enough to get too close to the power line (the change in elevation at the rear of the load was due to the front tires entering the ditch). Other details relevant to the incident include:

- There were three power lines travelling over the south side ditch of the roadway. The height of the power lines was 6.11 meters as measured with an electronic line measuring instrument.
- The loaded height of the mud tank was measured to be 5.88 meters. There was approximately 40 centimetres of overhang off the back of the bed truck while transporting the load.
- The lease had been constructed beside an existing roadway which had a ditch on both sides; the south side ditch had been lined with rig matting to provide access to the lease.
- The surface area of the road was approximately 6 meters from shoulder to shoulder with a ditch elevation drop of 35 cm. on the south side (lease side) and 66 cm. on the north side.
- The pilot car operator, driver and truck supervisor were in radio communication at all times but did not recognize the danger in time. The significance of the elevation changes between the south and north ditches were not factored into the safe work plan.

Outcomes and Recommendations:

Based on this and other similar incidents, the following recommendations are provided:

1. Provide personnel training. All personnel participating in the movement of objects under or near power lines must have the proper training and must be aware of all regulations regarding safe limits of approach and the minimum clearances when moving loads or equipment under an overhead power line prior to being instructed to perform any related tasks.
2. Measure the height of all loads prior to travel. All truck operators must be aware of and record their overall weight, width, length and height; empty and when loaded. Confirm the height of all overhead power lines, bridges and possible overhead obstructions along the selected route. Review with truck supervisors, truck and pilot car operators in pre-job hazard assessments. Ensure truck supervisors are equipped with and trained to use electrical measuring devices.
3. Once aware of an over-height load greater than 5.3 m, the utility company must be contacted. Only electrical utility workers are qualified to determine conductor heights and what procedures will be needed to move a fixed load under a power line. It is therefore important to establish effective lines of communication between oil company representative, drilling contractor representative, the trucking company representative **and the utility company** to confirm notification requirements and identify equipment needs and other considerations.
4. Consider other options available for transporting the load (i.e. route, truck bed height)

A summary of regulatory requirements, high load move requirements and basic power line safety are included on page 2 of this bulletin. A more detailed Alberta Transportation guideline titled [Commercial Vehicle Safety Compliance in Alberta](http://www.transportation.alberta.ca) is available at www.transportation.alberta.ca.



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Part 17 – Alberta Occupational Health and Safety Code - Explanation Guide Excerpt

According to Rule 2-016(2) of the *Electrical Communication and Utility Code (ECUC)*, equipment, a building, or an object exceeding the heights listed in Table 17.2 of the Alberta OHS Code, must not be moved under an overhead power line until the operator of the overhead power line is contacted and takes whatever steps are necessary to protect workers and the power line. The power line operator must be contacted before the move begins and the utility operator is required to provide assistance as soon as possible. (NOTE: Other Western provinces have similar regulations.)

Some employers routinely (and perhaps on very short notice) move equipment, buildings, or objects exceeding the heights listed in Table 17.2. These employers may find it difficult to comply with Rule 2-016(2). It is suggested that the employer and the power line operator(s) work together to develop processes that anticipate such difficulties and ensure that the move is done safely.

Requirements for Moving High Loads in Alberta (Provided by Fortis)

- In Alberta, if the total height of a load is **over 4.15 metres (13.6 feet)**, it is "over height".
- A permit to travel must be secured from Alberta Infrastructure & Transportation. ATU can be contacted at 1-800-662-7138 or at: www.travis.gov.ab.ca.
- If the load is over 5.3 metres (17.4 feet), the utility company must also be contacted.
- The utility company will either clear you to move the load yourself or escort the load lifting or dropping power lines along the way depending on the route and situation.
- Every utility company has minimum notice requirements. (Normally 5 to 7 days)

Electrical facts to help you work safely near power lines

- Most overhead power lines have no protective insulation. Any physical or equipment contact with them could be dangerous. For example, a metal tape measure should not be used.
- **IMPORTANT:** Power line heights can change in small amounts of time due to electrical loading, wind, snow buildup, sunlight, settling of poles, etc. and unqualified individuals will not be aware of these considerations.
- Non-metallic materials such as lumber, tree limbs, tires, ropes, straw and hay, are capable of conducting electricity, depending on moisture content and surface contamination.
- Electricity can arc or "jump" between a wire and a conducting object (e.g. ladder or truck). A person can be electrocuted by coming too close to a power line.
- When people or objects touch or come too close to a power line, there is an instant flow of electricity through them to the ground. The flow of electricity through a human body can result in severe burn injuries or death. It takes less than one ampere of electricity to kill a person.
- The ground nearby may be electrified. Stay at least 10 metres away from any fallen wires. Depending on voltage, the safe distance may be increase up to 32 m.
- If machinery you are operating contacts an energized line, move the machinery away from the line to break contact. If this cannot be done, remain on the machine and call for help.
- If you must exit any equipment due to fire or other safety reasons, jump clear keeping your feet together. Never contact the machine and ground at the same time. Once clear of the machine, shuffle away never allowing the heel of one foot to move beyond the toe of the other or hop with both feet together to the recommended safety distances indicated above.

For additional information, the Alberta Electrical Utility Safety Association have a guide available for developing a [Code of Practice for Working in the Vicinity of Electrical Equipment](#).

Contact:

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DISCLAIMER:

This Safety Alert is designed to prevent similar incidents by communicating the information at the earliest possible opportunity. Accordingly, the information may change over time. It may be necessary to obtain updates from the source before relying upon the accuracy of the information contained herein. This material is presented for information purposes only. Managers and supervisors should evaluate this information to determine if it can be applied to their own situations and practices.