

## STATISTICS

### RE: ELECTRICAL INCIDENTS IN ALBERTA

2007 01 01 to 2007 12 31

Regulations under the *Safety Codes Act* require that all electrical accidents and power line contacts be reported to the Technical Administrator. Alberta Municipal Affairs and Housing has compiled a summary report of incidents reported between January 1, 2007 and December 31, 2007. Organizations in the electrical industry may use this information for promoting public awareness of electrical safety risks.

A total of 363 incidents were reported:

- involving overhead power lines
- involving underground power lines
- involving other types of electrical installations or equipment

Included in these incidents are fatalities of humans and livestock.

This report presents the information in a series of tables, text, and charts:

- (1) **Injury Incidents** – Pages 2 to 5 summarize fatal and non-fatal injury incidents. The table on page 2 outlines the persons, voltages and equipment involved in the incidents. A brief description of injury incidents, in chronological order, is provided on page 3 to 5.
- (2) **Power Line Contacts** – Pages 6 to 8 summarize the power line contacts. The table on page 6 shows different types of power line contacts and the number of fatal and non-fatal injuries incurred for each type of contact. The table's and charts, on pages 7 and 8, compare historical information regarding power line contacts with current statistics.

Since not all incident occurrences are reported, this report is not an accurate accounting of all the incidents that occurred in Alberta. It does however serve as an approximation and sampling of the various types of incidents.

**INJURY INCIDENTS REPORTED  
2007 01 01 to 2007 12 31**

**FATAL (F)  
NON-FATAL (N)**

**1. PERSONS INVOLVED**

**A. Performing electrical work**

1. Qualified electrical worker
2. Qualified power electrician/lineman
3. Non-qualified person

F	N
1	1
	1

**B. Not performing electrical work**

1. Adult
2. Child

F	N
1	15

**2. VOLTAGES INVOLVED**

**A. Systems or equipment (not power line contacts)**

1. 750 volts or less
2. Over 750 volts

F	N
	6
1	

**B. Contact with power lines (not included in A)**

1. 750 volts or less
2. Over 750 volts

F	N
	1
1	10

**3. SYSTEMS OR EQUIPMENT INVOLVED**

**A. Interior wiring systems**

1. Service/distribution equipment
2. Motor control equipment
3. Switches, fixtures, etc.
4. Test equipment
5. General wiring/conductors
6. Other equipment

F	N
1	
	2
	1
	1

**B. Line construction or maintenance**

1. Overhead systems (poles, lines, etc.)
2. Substations and transformers
3. Underground systems
4. Other

F	N
	1

**C. Utilization equipment**

1. Household appliances
2. Commercial/industrial equipment
3. Portable power tools
4. Extension cords
5. Welding machines/motors
6. Mobile homes and trailers
7. Signs
8. Other

F	N
	1
	1
	1
	1

**D. Non-electrical equipment**

1. Cranes/booms/pickers
2. Ladders/scaffolds
3. Drilling rig equipment
4. Farm equipment
5. Moving buildings
6. Objects (pipe, antennae, etc.)
7. Excavating equipment
8. Vehicles (high loads, truck boxes, etc.)
9. Other

F	N
	2
	1
	1
1	4

**SUMMARY OF INJURY INCIDENTS**

Information provided in this report is information provided by Industry. Any changes in wording from the reports received, is done for clarification of the incident.

### **Fatal Injuries**

- (1) A 19 year old man was electrocuted after contacting an overhead power line. The victim had reportedly cut down a power pole with a chain saw which resulted in his electrocution.
- (2) A man was electrocuted while working on switchgear equipment when he contacted a 4160 volt bus bar. The victim was reported to have fallen into the energized bus bars.
- (3) A cow was electrocuted when it contacted a downed overhead power line conductor.

### **Non-Fatal Injuries**

- (1) A homeowner was attempting to remove a pair of running shoes off an overhead 14,400 volt power line, neutral conductor. He was using a stick to lift the shoes off the neutral conductor. It appears he contacted both the primary 14,400 volt line and the neutral conductor which caused a 5 amp fuse to blow. The homeowner complained of having a sore spot on his back but refused to go to the hospital to get checked out by a doctor.
- (2) A worker was in the process of lifting the box on a truck when the box contacted a 25,000 volt overhead power line. The worker received an electrical shock and burns to his right shoulder, left hand and toes.
- (3) An electrician was injured when a 600 volt breaker exploded in an MCC unit. He received 2<sup>nd</sup> and 3<sup>rd</sup> degree burns from the explosion. The electrician was testing a relay which he had installed in the MCC unit breaker compartment. The door was open and he was working in close proximity to energized components when the accident occurred.
- (4) A power lineman came in contact with an estimated 25,000 volt induced potential while working in a transmission corridor. The line crew were attempting to remove a structure from the de-energized transmission line and the lineman was working off a metal bucket truck at the time of the accident. The crew was using equal potential grounding. The grounds were removed in the wrong sequence which caused the injury to the lineman. The lineman sustained burns to several parts of his body.
- (5) Two workers were loading a trackhoe onto a lowboy trailer. The trailer was parked directly under an overhead power line. The trackhoe while being loaded onto the trailer contacted the 15,000 volt power line. The driver of the lowboy truck trailer combination, was leaning against the side of the truck when he received the electric shock. He was air lifted by Stars to an Edmonton Hospital.
- (6) Five workers were setting up a metal framed Christmas decoration near a power line. While repositioning the decoration, it touched an overhead power line which was carrying 25,000 volts. One worker sustained minor injuries and four workers sustained serious injuries.

- (7) A worker was lifting a light pole into place when the pole swung around and the light pole head touched a 14,400 volt overhead power line. The worker received an electrical shock and burns to both his hands and right foot when the pole contacted the power line.
- (8) A Welder Technician received an electrical shock while programming a drill press at an industrial site. He was working in close proximity to live components.
- (9) A worker received an electrical shock (120 volt) while handling a damaged cord end in wet conditions.
- (10) A worker was attempting to move a pump unit from an excavation site when he received an electrical shock ( pump unit was a three phase 480 volt unit). The worker while receiving the shock was unable to let go of the pump unit handle. A co-worker hit the victims hand with a stick which caused him to let go of the pump unit handle.
- (11) A co-owner of a pet store was working with an exhaust fan located on a mezzanine area in a t-bar ceiling. He contacted a 347 volt circuit conductor and received an electrical shock and burns.
- (12) A worker received an electrical shock when the chainsaw he was using contacted a 240 volt triplex service cable.
- (13) A worker received an electrical shock after striking a power line. No other injuries reported and no additional information reported.

#### **Electrical equipment damaged (not included in overall statistical numbers)**

- (1) A brushing crew discovered a class 6, 35 foot power pole, that had been cut half way through. This pole damage is considered by the power company as being vandalism.
- (2) The power company found one of their transformer pole installations had been vandalized with an axe. The RCMP were notified.
- (3) An unknown person broke through a PVC pipe which was covering cables energized at 15,000 volts, phase to phase. The vandal had severed one of the conductors with a meat cleaver. This resulted in a short circuit between the conductor and the concentric neutral.
- (4) An electrical explosion resulted from a loose connection inside a heat trace controller equipment enclosure (voltage to ground 120 volts). There were no injuries. This newly installed equipment had to be replaced as a result of the amount of damage caused by the explosion.
- (5) An office trailer fire caused through an overloaded 15 amp circuit, resulted in extensive damage to the interior of the trailer.

### **REPORTED ELECTRICAL POWER LINE CONTACTS**

TYPE OF CONTACT OR DAMAGE	# OF LINE CONTACTS	NON-FATAL INJURIES	FATAL INJURIES
<b>Overhead Utility Systems</b>			
Vehicle-mounted equipment (booms, hoists, cranes, etc.)	29		
Trucks with raised boxes and vehicles transporting high loads	65	2	
Excavating or earth moving vehicles	53		
Farm implements	38		
Relocating structures (grain bins)	2		
Vehicles out of control	50		
Aircraft, parachutes, kites, etc.	4		
Falling, brushing or trimming trees	3		
a) Utility tree trimmers/workers			
b) Others	16		
Drilling and seismic equipment			
Other inadvertent contacts	4	9	1
<b>Total</b>	<b>264</b>	<b>11</b>	<b>1</b>
<b>Underground Utility Systems</b>			
Excavating equipment	54		
Vehicles hitting transformers, pedestals, etc.	18		
Others	8		
<b>Total</b>	<b>80</b>		

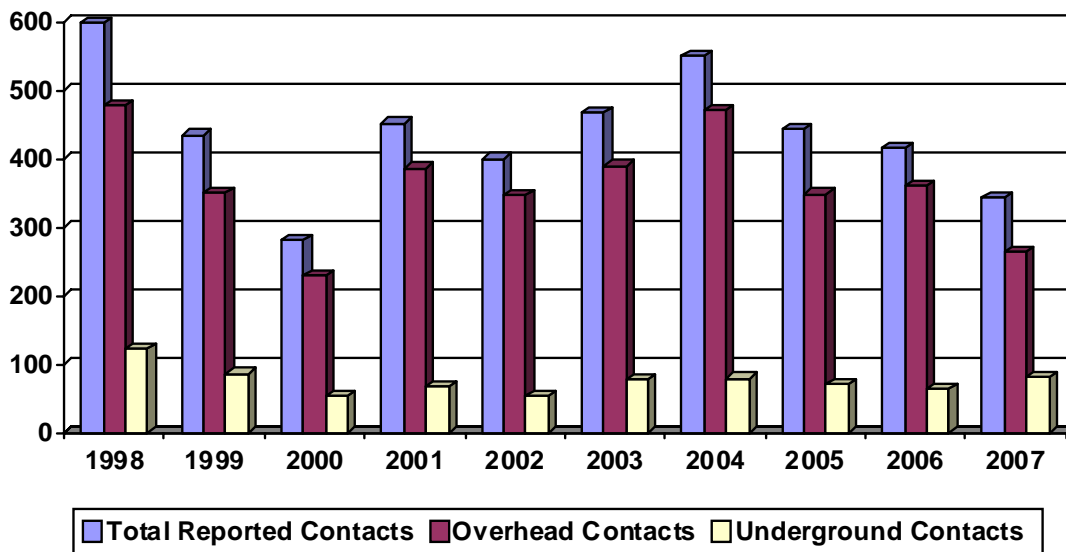
## POWER LINES CONTACTS HISTORICAL SUMMARY

	99	00	01	02	03	04	05	06	07
Overhead (O/H) contacts	349	230	386	346	390	471	348	353	264
Underground (U/G) contacts	86	52	66	54	78	79	70	63	80
<b>Total Reported Contacts</b>	<b>435</b>	<b>282</b>	<b>452</b>	<b>400</b>	<b>468</b>	<b>550</b>	<b>418</b>	<b>416</b>	<b>344</b>

Fatalities (O/H contacts)	1	1	1	1	1	1	1	1	1
Fatalities (U/G contacts)	0	0	0	0	0	0	0	0	0
<b>Total Reported Fatalities</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

Injuries (O/H contacts)	15	10	7	7	2	6	5	10	11
Injuries (U/G contacts)	3	0	0	1	2	0	1	1	0
<b>Total Reported Non-Fatal Injuries</b>	<b>18</b>	<b>10</b>	<b>7</b>	<b>8</b>	<b>4</b>	<b>6</b>	<b>6</b>	<b>11</b>	<b>11</b>

### Power Line Contacts Historical Summary



### Power Line Contacts Injuries History

