

STATISTICS

ELECTRICAL INCIDENTS IN ALBERTA

January 1 to December 31, 2013

Regulations under the *Safety Codes Act* require that all electrical accidents and power line contacts be reported to the Technical Administrator. Alberta Municipal Affairs has compiled a summary report of incidents reported between January 1, 2013 and December 31, 2013. Organizations in the electrical industry may wish to use this information for promoting public awareness of electrical safety risks.

Incident reporting forms and statistical reports from previous years can be found on the Alberta Municipal Affairs website at:

http://www.municipalaffairs.alberta.ca/cp_electrical_forms_and_reports.cfm

A total of 954 incidents were reported:

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

Of these incidents, fatalities of humans and livestock were recorded.

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

- (1) **Injury Incidents** – Pages 2 and 3 summarize fatal and non-fatal injury incidents. The tables on page 2 outline the persons, voltages, and equipment involved in the incidents. A brief description of injury incidents is provided on page 3.
- (2) **Power Line Contacts** – Pages 5 to 7 summarize the power line contacts. The table on page 5 shows the different types of power line contacts and the number of fatal and non-fatal injuries incurred for each type of contact. The tables and charts on pages 6 and 7 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. However it does serve as an approximation and sampling of the various types of incidents.

INJURY INCIDENTS REPORTED

January 1 to December 31, 2013

**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
	2

B. Not performing electrical work

1. Adult
2. Child

F	N
1	3

2. VOLTAGES INVOLVED

A. Systems or equipment (not power line contacts)

1. 750 volts or less
2. Over 750 volts

F	N
	3

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

1. 750 volts or less
2. Over 750 volts

F	N
1	3

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
	1

B. Utility

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

F	N
	2
1	2

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

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
	1
	1

SUMMARY OF REPORTED INJURY INCIDENTS

Information provided in this report is information provided by Industry. Any change in wording from the reports received is done for clarification of the incident and to also protect the identity of the individuals involved.

Fatal Injuries

1. A power crew responded to a trouble call at a substation and discovered a deceased individual at a 138,000 volt capacitor bank. The individual had gained forced, unauthorized access to the substation.

Non-Fatal Injuries

1. An individual was in the process of raising an aluminum truck box. During the process, the truck box made contact with a 14,400 volt overhead power line. The individual was blown back approximately 3 meters and suffered electrical entry and exit wounds to one hand and one foot. He was examined and treated at hospital and later released.
2. An individual was moving an aluminum extension ladder when he lost control of it and it contacted a 14,400 volt overhead power line. The person involved received burn injuries to an arm, their midsection, and both feet.
3. While performing an underground transformer upgrade, a power line technician mistakenly cut an energized 4,160 volt cable. The resultant arc flash caused minor burns to the technicians face.
4. A power line technician placed a cordless drill down on top of a 480 volt secondary protector. An arc flash occurred, resulting in burns to the technician's wrist and right side of their face.
5. A worker received a 120 volt shock when they contacted the live terminals of a light switch.
6. A worker received minor arc flash burns to their face when their pliers made contact between an energized fuse and the grounded cabinet door of a 600 volt central distribution panel.

Equipment Failure (not included in overall statistical numbers)

1. An arc fault circuit breaker failed to open on a short to ground. This resulted in a small fire that was extinguished after manually operating the breaker.
2. A 120/208 volt, 1200 amp switchgear faulted. After further investigation, it was discovered that a bolt was missing for connecting the buss work. There was also no evidence that any buss connections were ever properly torqued.
3. Settling ground caused a consumer's underground service conductor cable to pull down on the electrical meter socket. The service conductors eventually shorted out on the meter cabinet starting a fire. The resultant fire destroyed the electrical meter, the meter socket, and melted the vinyl siding on the residence.
4. A small fire started in a 20 amp, 120 volt receptacle used to supply power to an air conditioning unit. Upon further investigation there appears to have been a loose connection between the plug and the receptacle that may have been caused by mechanical damage.

REPORTED ELECTRICAL POWER LINE CONTACTS

January 1 to December 31, 2013

TYPE OF CONTACT OR DAMAGE	# OF LINE CONTACTS	NON-FATAL INJURIES	FATAL INJURIES
Overhead Utility Systems			
Vehicle-mounted equipment (booms, hoists, cranes, etc.)	54		
Trucks with raised boxes and vehicles transporting high loads	112	1	
Excavating or earth moving vehicles	136		
Farm implements	101		
Relocating structures (grain bins)	18		
Vehicles out of control	168		
Aircraft, parachutes, kites, etc.	7		
Falling, brushing or trimming trees	10		
a) Utility tree trimmers/workers	36		
b) Others			
Drilling and seismic equipment	4		
Other contacts	30	1	1
Total	676	2	1
Underground Utility Systems			
Excavating equipment	189		
Vehicles hitting transformers, pedestals, etc.	67		
Others	8	1	
Total	264	1	

REPORTED ELECTRICAL POWER LINE CONTACTS HISTORICAL SUMMARY

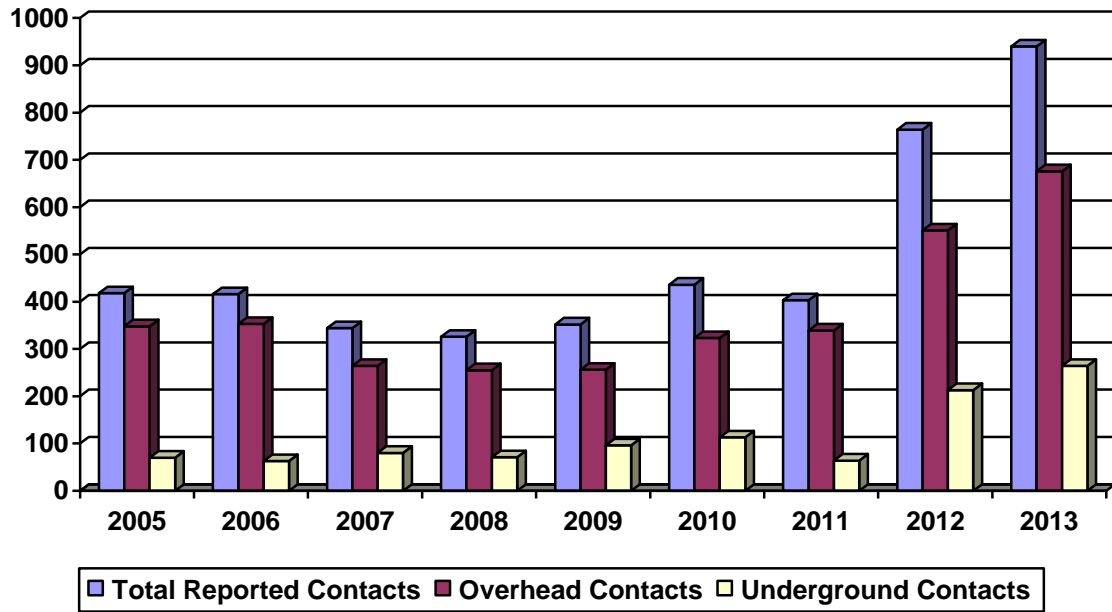
For the Years 2005 to 2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Overhead (O/H POWER LINE) contacts	348	353	264	255	256	323	339	551	676
Underground (U/G POWER LINE) contacts	70	63	80	71	96	113	64	213	264
Total Reported Contacts	418	416	344	326	352	436	403	764	940

Fatalities (O/H POWER LINE contacts)	1	1	1	1	2	1	2	0	1
Fatalities (U/G POWER LINE contacts)	0	0	0	0	0	0	0	0	0
Total Reported POWER LINE Fatalities	1	1	1	1	2	1	2	0	1

Injuries (O/H contacts)	5	10	11	9	8	14	4	8	2
Injuries (U/G contacts)	1	1	0	0	2	1	1	4	1
Reported injuries (persons) Non-Fatal ELECTRICAL	6	11	11	9	10	15	5	12	3

Reported Power Line Contacts - Historical Summary 2005 to 2013



Reported Power Line Contacts - Injuries History 2005 to 2013

