Alberta Municipal Affairs

Safety Services

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STATISTICS

RE: ELECTRICAL INCIDENTS IN ALBERTA

2008 01 01 to 2008 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, 2008 and December 31, 2008. Organizations in the electrical industry may use this information for promoting public awareness of electrical safety risks.

A total of 338 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
2008 01 01 to 2008 12 31

FATAL (F)
NON-FATAL (N)

1. PERSONS INVOLVED

A. Performing electrical work	F	N
1. Qualified electrical worker		
2. Qualified power electrician/lineman		
3. Non-qualified person		

B. Not performing electrical work	F	N
1. Adult	1	
2. Child		

2. VOLTAGES INVOLVED

A. Systems or equipment (not power line contacts)	F	N
1. 750 volts or less	1	
2. Over 750 volts		

B. Contact with power lines (not included in A)	F	N
1. 750 volts or less		
2. Over 750 volts		

3. SYSTEMS OR EQUIPMENT INVOLVED

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

B. Line construction or maintenance	F	N
1. Overhead systems (poles, lines, etc.)	1	1
2. Substations and transformers		2
3. Underground systems		
4. Other		

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

D. Non-electrical equipment	F	N
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		

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 welder was working in a man lift, he was welding on a track that was part of a travelling crane, electrocution was suspected as the cause of death.
(2) A truck ended up stuck in snow at an oil lease, the crew was attempting to lift off the derrick of the bed of the truck when the derrick contacted an overhead power line. A worker who was standing by the side of the truck was electrocuted.
(3) A horse was found electrocuted. The horse was found laying against a ground conductor which was running down a power pole. The transformer that was located on the pole was isolated from the ground conductor that the horse was in contact with.

Non-Fatal Injuries

(1) A power lineman received electrically burns to his right arm and both feet while removing a bottom fed fuse barrel.

(2) A man received burns to 70% of his body when he broke into a substation to steal copper wiring. He was attempting to steal the copper fence ground conductors when he contacted a 15,000volt energized reactor live terminal while being in contact with the grounded fence.

(3) An electrical apprentice received an electrical shock while disconnecting a breaker inside 480 volt motor starter. The apprentice received a shock when he touched a live terminal and the side of the enclosure. This action resulted in him receiving a 277 volt shock through his left hand, arm and chest.

(4) A service technician received an electrical shock through his right hand fingers and thumb while working on an overhead door 208 volt, control panel. The feeder breaker was locked off but a second source of supply had been added to feed an exhaust fan through auxiliary contacts. The control panel was not labeled identifying more than one source of supply.

(5) A Utility serviceman received burns to his left hand, torso and right leg when he contacted a 14,400 volt transformer terminal.

(6) A worker while installing eavestrough contacted an 8,000 volt overhead power line conductor. The line contact caused him to fall off an aluminum ladder and he landed on a fence and then fell to the ground. The victim received burns to both hands.

(7) An electrician while standing on a wood base of scaffolding, received an electrical shock while disconnecting a conductor from a 208 volt terminal. The electrician was working 20 feet above the ground and was disconnecting a conductor from a lug using an allen key. He contacted the metal portion of the scaffold while touching the allen key and received an electrical shock. The electrician had not tested for voltage or installed locks or tags. The junction box that contained the terminations he was working on had no labels or signage.

(8) An electrician received an electrical burn to his right ring finger and the top of his left foot while working within the qualified limits of approach to a high voltage bushing. He believed the contact was made when an arc jumped from the energized component to his right finger.

(9) A worker received an electrical shock while he was attempting to move a pump. He was working in a trench excavation, at the time of the incident. The worker experienced the shock when he grabbed the handle of the pump and he found that he could not let go of the pump handle. A co-worker hit the victims hand with a wooden stick which caused him to let go of the pump handle. The pump was fed from a 48Kw,120-240-480 volt generator.

REPORTED ELECTRICAL POWER LINE CONTACTS
2007 01 01 to 2007 12 31

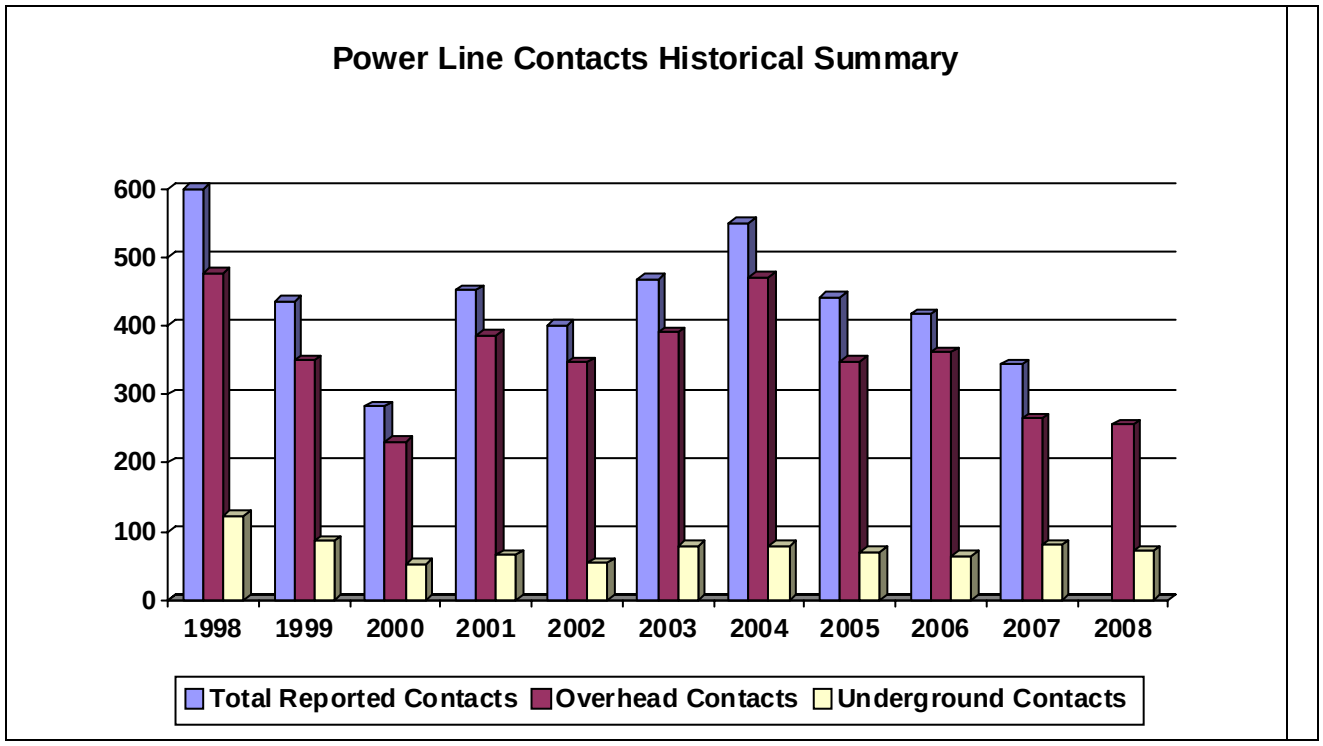
TYPE OF CONTACT OR DAMAGE	# OF LINE CONTACTS	NON-FATAL INJURIES	FATAL INJURIES
Overhead Utility Systems			
Vehicle-mounted equipment (booms, hoists, cranes, etc.)	27		1
Trucks with raised boxes and vehicles transporting high loads	37		
Excavating or earth moving vehicles	33		
Farm implements	45		
Relocating structures (grain bins)	1		
Vehicles out of control	64		
Aircraft, parachutes, kites, etc.	4		
Falling, brushing or trimming trees a) Utility tree trimmers/workers	4		
b) Others	20		
Drilling and seismic equipment	3		
Other inadvertent contacts	17		
Total	**255**		
Underground Utility Systems			
Excavating equipment	52		
Vehicles hitting transformers, pedestals, etc.	18		
Others	1		
Total	**71**		

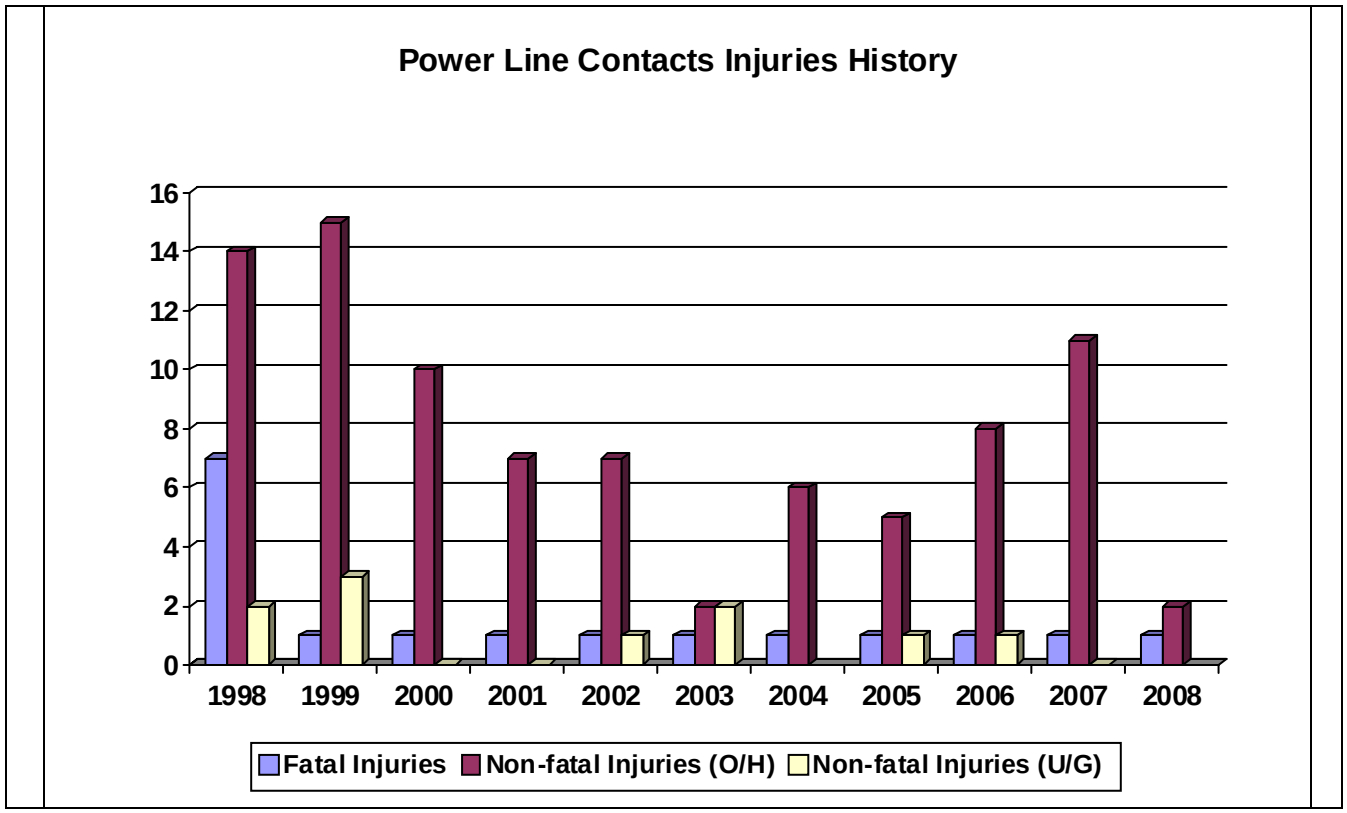
POWER LINES CONTACTS HISTORICAL SUMMARY

	99	**00**	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**
Overhead (O/H) contacts	349	230	386	346	390	471	348	353	264	255
Underground (U/G) contacts	86	52	66	54	78	79	70	63	80	71
Total Reported Contacts	**435**	**282**	**452**	**400**	**468**	**550**	**418**	**416**	**344**	**326**

Fatalities (O/H contacts)	1	1	1	1	1	1	1	1	1	1
Fatalities (U/G contacts)	0	0	0	0	0	0	0	0	0	0
Total Reported Fatalities	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

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


Power Line Contacts Historical Summary
600
500
400
300
200
100
0
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Total Reported Contacts
Overhead Contacts
Underground Contacts


Power Line Contacts Injuries History
16
14
12
10
8
6
4
2
0
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Fatal Injuries
Non-fatal Injuries (O/H)
Non-fatal Injuries (U/G)