

OCTOBER 1980

EDITOR

Johanne Stemo

EDITORIAL COMMITTEE

Jim Law
 Ernie Mortimer
 Dudley Barnes
 Andy Robertson

EIA OFFICERS

President
 Ernie Mortimer
 Vice President
 Joe Laminski
 Secretary
 Dave Jackson
 Treasurer
 Fred Moore
 Box 80479
 Burnaby, B.C.
 V5H 3X9
 Phone: 434-5887

Directors
 Ian Dingwall
 Al Horwell
 Andy Robertson
 Associate Directors
 Dudley Barnes
 Jim Reid
 Past President
 Jim Law



UNSAFEWORKING PRACTISES GENERATE ACCIDENTS

The sole end purpose of electrical inspection is SAFETY for British Columbians. It is the only thing the electrical inspector has to sell to the public at large and to all workers within the electrical industry. With this in mind an attempt has been made by your editor to gather available statistics covering the year 1979 in order to come up with a realistic picture of what is being done and what might be done in the field of industrial safety.

William Andrews, P. Eng., of the Worker's Compensation Board categorizes industrial accidents as ELECTRICAL CONTACT and FLASH BURNS. He said there are more flash burns than electrical contact which may come as a surprise to the novice.

ELECTRICAL CONTACT

Each year x-number of workers are injured because energized contacts occur. It is generally agreed that such contacts would be eliminated and accidents prevented by simply providing adequate instruction to supervisors and workers and then insuring that the specified safe work procedures, already in force, be followed.

FLASH BURNS

Most accidents occur on low voltage equipment and involve voltages between 250 and 600 volts supplied from high amperage sources. Typically the worker initiates an arc, either through (1) inadvertent movement of the tool or material that he is holding or, (2)

the worker makes wrong usage of test equipment.

Inadvertent Movement - When working on live equipment the worker needs to be very much aware of his own movement as related to the hazards that exist. His foot may slip. The tool he is holding may drop or otherwise make contact with the live equipment.

Wrong Usage of Test Equipment - A directive dated January, 1979 from the Electrical Safety Branch, of the Ministry of Labour, warns that "extrme care must be taken with the use of portable multimeters and similar instruments on systems with high fault current capabilities such as those encountered in industrial plants..."

Example: A multimeter switched to a current or resistance function when making voltage tests. The initial short circuit that occurs produces an arc that develops into an explosive force because of the high current source. In the majority of accidents of this type, the worker suffers severe burns.

Major injuries for the year 1979 - 15 flash and 8 direct contact. In addition there were three deaths. Not included in the above are numerous minor injuries and near misses.

Some minor accidents and numerous near misses are never reported and hence, never categorized. It's a bit like falling five storeys and discovering you've only broken your thumb. You're so happy to be alive the significance of the broken thumb escapes you.

ACCIDENT DATA

Flash Burns - Six workers suffered severe burns. Nine had lesser burns. These were separate accidents.

One worker was severely burned (2nd degree burns to face, throat and hands) when using makeshift test equipment. A 120 volt, incandescent lamp was used to test for voltage on a 480 volt high amperage system.



Substation - Two workers were working on a de-energized 12 kv power transformer. One worker left the station to pick up tools. During his absence the other worker climbed an identical but energized transformer. He contacted energized parts and was thrown clear. Result - worker received second and third degree burns to numerous parts of body.



DIRECT CONTACT

Concrete Pumpers - Two workers were killed in separate accidents. Three workers were severely burned when a pumper truck boom came in contact with an energized 12 kv power line.

Truck Crane (tree planting) - A worker was killed while standing on ground and holding load line when the boom contacted a 12 kv power line.

Erecting T.V. Antenna on House Trailer - Worker received severe electrical burns and internal injuries when the steel antenna he was holding contacted an energized 14 kv power line.

Kiosk - Worker was working on a de-energized panel in a 12 kv kiosk. Prior to leaving the kiosk for a short time he re-energized the kiosk in order to provide customer service while he was gone. Upon his return he resumed work on the kiosk forgetting that the panel had been re-energized. Result - worker received electric shock, second degree burns to numerous parts of his body.

Note: This was an experienced worker, fully aware of the hazards, but in a moment of forgetfulness the tragedy happened. A second worker as a safety watcher, as laid out in the regulations could have prevented this accident.

Hydro Pole, Burns Lake Area - B.C. Hydro worker climbed pole and made contact with energized line. Worker suffered burns and broken hip. He was transported to Prince George Hospital for treatment.

Overhead Contact - Worker was positioning one end of a steel beam when boom tip of the mobile crane made contact with a 12 kv overhead powerline. Worker had been advised that the line was de-energized. The worker suffered severe burns to arms, legs and groin.

Note: Accident statistics given in this article were compiled by the Worker's Compensation Board. They refer to industrial accidents only and will differ from figures put out by the Electrical Safety Branch which includes domestic and other. Editor

Editor's Note - Mr. Andrews has been actively engaged in the electrical business all his life. He served his apprenticeship in the trade then went on to university to gain professional status. During 20 years with ITT (International Telephone and Telegraph Corporation), a firm with head offices in New York and connections throughout the world, he travelled and lived in many places. He looks back on that time of his life as being both colourful and exciting, but "Eventually you get tired of travelling." He also felt that living in a foreign country with a strange language was a disadvantage for his family. For the past 11 years he has been with the Worker's Compensation Board in the Prevention Services Division. His youngest son is now attending university here and Andrews is "coming up for my second retirement." It will not be an inactive one.

NEWS OF THE INDUSTRY

Pumper Truck Operators

NEW SAFETY MEASURES MAY BE IN STORE

Boom contacts with highly energized powerlines have multiplied alarmingly over the past few years and as a result research and new safety measures are being looked at.

A WCB accident prevention officer, who specializes in the field of electrical systems and hazards, decided to do some extensive research into a system that would isolate the operator from the electrical circuit caused when a boom contacts a live powerline.

He came up with two possible options that would isolate the worker from the electrical circuit when he was operating the remote control. The first was the use of a remote control radio device to direct the boom or secondly, the use of a fiber optic cable, instead of the traditional copper one. The first option raised questions arising from experience some users of radio controlled devices had with interference and also the high cost of some radio controlled equipment. The second option, fiber optics, seemed to be the answer.

The hair-thin glass fibers used in fiber optics optically transmit signals via light flashes into an electrical signal but do not conduct live power, thus isolating the worker from the electrical circuit.

Ruskin Controls Limited in New Westminster was contacted for technical help. They designed a system using a solid state remote control box and a fiber optics cable. Several firms have since installed this equipment.

The tour of B.C. Hydro's new Research and Development Centre, as set forth in the July Inspector has not yet been scheduled. When it does, you will be notified.



A NEW LOOK AT ENERGY CONSERVATION

Innovative lighting procedures based on dimming system and modulating controls are in the works for the new ICBC building to be constructed at Lonsdale Quay in North Vancouver. Completion date - August 1982.

"The lighting design project is currently in its preliminary stages," said Newton Hockey, Manager of the electrical division of Reid Crowther and Partners Limited, the North Vancouver firm doing the lighting job. The design, developed to use daylight as part of the control system, will conserve energy in a

highly efficient manner and is one of the first for North America.

The method of preparing the site itself is also highly innovative: a 20 ton weight dropped from 100 feet by a crane impacts the earth to a depth of 30 to 40 feet over the total area, resulting in consolidation of the site without the use of piling. Hockey is a professional engineer, a member of EIA and president of the Illuminating Engineering Society of the B.C. Section. We are looking forward to a comprehensive report on this interesting project for our next issue.

Murray transferred to our Branch in 1971 from Correction Services, and has been stationed at Terrace, Quesnel and Prince George.

Alan Espenhain has joined our Branch as an Electrical Safety Inspector at Williams Lake. Prior to joining our Branch, Alan worked at Canadian Forces Base, Aldergrove, as an electrician where his duties included inspection of installations.

Stan Cook has joined our Branch as an Electrical Safety Inspector at Prince George. Prior to joining our Branch, Stan worked for Northway Electric Ltd., and as an Instructor at Caledonia College.

Harry Cunningham has joined our Branch as an Electrical Safety Inspector at Prince George. Prior to joining our Branch, Harry worked as an Electrician with the Ministry of Highways, Transportation and Communication.

John McDonnell has joined our Branch as an Electrical Inspector at Port Hardy. Prior to joining our Branch, John operated as an Electrical Contractor in the Cobble Hill area.

Approval is being obtained from the Public Service Commission for the posting of the following inspector positions:

- Electrical Safety Inspector, Quesnel, Victoria, Kamloops, New Westminster, and Fernie.
- Regional Supervisor, Salmon Arm. A new region will be established comprising of the inspection districts in Revelstoke, Vernon and Salmon Arm.

Ms. Nola Silzer, formerly employed in the Electrical Safety Branch has returned to University where she has been accepted in the Faculty of Law at the University of Victoria.

Nola, a graduate of Simon Fraser University, in Education has in the past, provided a great deal of assistance with publication of "The Inspector". We wish her well in the challenges ahead.

The Electrical Safety Branch has announced the appointment of Mr. George Ward as the Codes and Standards Engineer effective October 20, 1980.

NOTICE OF EIA GENERAL MEETING

EIA will hold its next General Meeting at the Astor Hotel, November 3, 1980. The speaker will be Stephen Stackhouse, Legal Officer, from the Ministry of Labour. All Inspectors will be interested in the subject to be dealt with - liabilities of the Electrical Inspector.

Social Time: 5:15
Dinner: 5:45
Business Meeting: 6:30

NOTICE TO EIA REPS ATTENDING ECA MEETINGS

ECA meetings are held at the Astor Hotel at 8 p.m. and fall on the third Wednesday of each month.

PEOPLE IN THE NEWS

**Staff and Organizational Changes
Compiled By The Ministry Of Labour**

Kim Reynolds, Electrical Safety Inspector, Prince George has been transferred to Trail. Kim transferred to our Branch from Ministry of Highways in 1977 and has worked in the Northern Interior and Peace River Regions.

Richard Burton, Electrical Safety Inspector, Terrace has been transferred to Prince Rupert. Richard started with our Branch in 1977 and recently decided to stay in the North Coast Region after turning down a transfer to Victoria.

Murray Maxwell, Electrical Safety Inspector, Prince George is being transferred to Mission.

Mr. Ward was recently employed as a senior design electrical engineer with Sandwell and Co. engaged in design work for large industrial installations. Prior to employemnt with Sandwell and Co., he was Manager of Field Operations for the Elevating Devies Branch of Safety Engineering Services.

For many years, Mr. Ward was employed by Westinghouse Canada Ltd. in the field of switchgear manufacturing and manufacturer of industrial control and power distribution equipment. During this period, Mr. Ward held a number of positions in the Vancouver area plant including:
Design and Application Engineer
Manager of Engineering
Plant Manager.

Mr. Ward is a 1947 graduate of UBC Electrical Engineering.

DEATH

The sudden passing of Jim Alexander, October 5, 1980, Electrical Inspector 1, based at the Richmond office on Shellbridge Way, has come as a shock to his family, many friends and co-workers. Jim Alexander joined the Provincial Inspection Department at Abbotsford in March, 1975. In 1978, he was transferred to the Metropolitan Region and, in October, 1979, he moved to the then newly opened Provincial offices in Richmond. Here his workload expanded. Al Luck, Chief Electrical Inspector for the Province, called on him to fill in temporarily on "approvals" in the Vancouver Head Office. This he did, becoming Administrator of Approvals Activities, working successfully in this very sensitive area where CSA certification have not yet been granted on equipment. Jim was well liked and will be sorely missed not only by his many friends and associates in the electrical field, but many will miss his familiar figure on the golf course where he could usually be found on a Sunday. We extend a message of sympathy to his wife, Charlotte, and his family.



B.C. HYDRO NEWS



APPOINTMENT

Appointment of C.W.J. Boatman as project manager for the proposed Site C hydro-electric development on the Peace River has been announced by F.J. Patterson, manager of B.C. Hydro's hydroelectric generation projects division.

Hydro is expected to apply almost immediately for regulatory approvals to build the project near Fort St. John.

In his new role, Boatman will be responsible for all Site C project activities and will direct and coordinate licensing and, if approved, design, construction and commissioning of the project.

He will be the primary Site C project contact with government agencies, local municipalities, local industry, land owners, the public and news media.

Since 1973, Boatman has been construction manager at the G.M. Shrum generating station for installation of generating units 9 and 10 and also construction manager for the Peace Canyon project which will be completed this year.

LOOKING AHEAD

A Vancouver-based environmental consulting firm is studying possible environmental impacts of a proposed double circuit 500 kv transmission line from Kelly Lake substation near Clinton to Cheekeye substation near Squamish.

Sigma Resource Consultants Ltd. has a \$70,000 contract with Hydro to study the 198-kilometre-long corridor.

Preliminary engineering studies show the line may be required as early as 1987 to strengthen the Lower Mainland transmission grid as electricity demands increase.

THERMAL GENERATION

B.C. Hydro has reactivated its planning process in preparation for filing of applications for approval to proceed with a thermal electricity generating station at the Hat Creek coal deposits.

This was announced in a public information bulletin issued by B.C. Hydro as a progress report on planning begun several years ago for a major coal-fired generating plant in the Hat Creek Valley, about 180 kilometres northeast of Vancouver.

The project would use the Hat Creek coal to fuel a thermal generation plant with ultimate capacity of 2,000 megawatts, roughly equal to current electricity demands in the B.C. Lower

Mainland.

In its "Energy Blueprint 80" published in early August, B.C. Hydro said first Hat Creek production would be required about two years after the 1987 completion of the Site C hydro project proposed for the Peace River and at about the same time as the Murphy Creek hydro project near Castlegar came into production.

CONTROLLING THE ESCALATING COSTS OF ENERGY

Tony MacGregor, spokesman for B.C. Hydro said a series of industrial energy management seminars, organized by Hydro, has resulted in significant savings in energy costs for some B.C. Companies. To date, seminars have been conducted in Richmond, Parksville, Vernon, Terrace, Prince George and Cranbrook. Denes Devenyi, Assistant Director of Physical Plant and Planning at Simon Fraser University, said the seminars helped Simon Fraser refine its successful energy conservation program. Services were tailored to fit real needs and this involved changes to lighting, heating, water temperature and modifications to equipment. The effort cut a whopping \$614,000 from their 1978/79 energy costs.

Hydro itself has achieved significant reductions in its energy consumption. Gordon Roper, Hydro's Vancouver Island Manager, said savings in existing buildings were brought about by such economy measures as lowering thermostats, reducing unnecessary lighting and lowering hot water temperatures.

HOW ARE YOUR COMMUNICATION SKILLS?

The following non-communication was extracted from current publications:

- "Energy management systems" (drapes)
- "Passive solar collectors" (windows)
- "Valves of natural phenomenon" (doors and windows)

(Reprinted from)

The Peace Arch News, Wednesday, September 10, 1980

Lance Robsons celebrate 50 years of marriage

Mr. and Mrs. Lance Robson celebrated their golden anniversary at the Masonic Hall Sept. 6.

Mr. Robson and the former Ruth M. Davidson were married Aug. 30, 1930, in New Westminster.

Born in England, Mr. Robson came to Canada with his parents in May, 1911, settling in New Westminster. Young Lance received his education there and in Vancouver and was registered as a professional engineer (electrical) in 1931.

He was self employed in electrical construction in New Westminster for 13 years, then was employed by the provincial Public Works Department in 1939. His last promotion in 1966 saw him appointed chief engineer, Safety Engineering Services Division.

He was chairman for 12 years of the Canadian Standards Association committee on the Canadian Electrical Code, a standard for electrical installation recognized internationally.

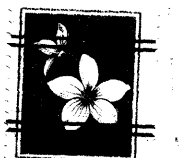
For six years he was an electrical instructor in the night school program at T.J. Trapp Technical School.

He served from 1934 to 1936 as an alderman on New Westminster city council, is a past master of Union Lodge No. 9 A.F. & A.M., and served as worshipful master in 1946. He is also a past president of Buena Vista Branch 62 B.C. OAPO and editor of the branch's newsheet, Tatler.

Mrs. Robson, marshal of White Rock Chapter of the Order of the Eastern Star, was born in New London, Conn., and came to Canada with her parents in 1910. They settled in Winnipeg where she received her education. She moved to B.C. in 1921, going to New Westminster in 1922.

The couple have a daughter, Marjorie Louise Richards of Victoria and two grandchildren.

Relatives came from Sanford, Man., Vernon, Vancouver, Wash., and San Francisco to attend the OES-catered reception Saturday.



D.H. Jackson
315 - 1955 Woodway Place
Burnaby, B.C.
V5B 4S5