

03

Health, Safety and Environment Review



ATCO *Electric*

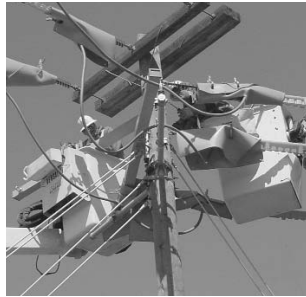
contents

- 1 Welcome
- 2 A Few Words About What We Do
- 3 Executive Summary
- 4 Health, Safety and Environment Management
- 6 Performance Evaluation
- 7 Pollution Prevention
- 11 Site Assessment and Remediation
- 12 Vegetation Management and Fire Prevention
- 13 Habitat Protection
- 14 Electric and Magnetic Fields (EMFs)
- 15 Employee Health and Safety
- 16 Emergency Preparedness and Response
- 18 Energy Management
- 19 Community Involvement
- 21 Industry and Government Program Involvement
- 23 Appendix 1: The Yukon Electrical Company Limited
- 28 Appendix 2: Northland Utilities Enterprises Ltd.
- 32 Health and Safety Principles
- 33 Environmental Principles

The HS&E Review is also available in electronic format on our web site at www.atcoelectric.com.

Welcome to the ATCO Electric 2003

Health, Safety and Environment Review



Throughout 2003, concern and attention for our long and short term health, safety and environment performance remained at the forefront for ATCO Electric, as the company moved ahead on key initiatives in several areas of our operations.

In September, ATCO Electric formally announced the construction of the \$99 million Dover-Whitefish Lake transmission project, which will boost system reliability between Edmonton and Fort McMurray and deliver power more effectively to Albertans. The project involves construction of a 350-kilometre transmission line and three new substations, and expansion of an existing substation. Right-of-way clearing started in December, and the new line is expected to be operational by late summer 2004. To gain approval, ATCO Electric conducted environmental assessments and developed detailed plans to protect wildlife and wildlife habitat. All employees and contractors involved in the project also received a comprehensive HS&E orientation.

In 2003, we also completed the second year of a three-year environmental assessment and remediation project that will ensure all of our 105 operating and retired isolated generating plant sites meet acceptable environmental standards. ATCO Electric also began upgrading all of the operating plants to improve efficiency and reduce the risk of releases. Other environmental protection efforts were aimed at reducing bird-related outages and lowering the wildfire hazard in our service area.

Health and safety activities during the year included a gap analysis to ensure our corporate policies and practices conform to the new Alberta Occupational Health and Safety Code, as well as the development of a new respiratory protection practice and guide for working in SF₆ atmospheres. We're also pleased to report our lost-time incident frequency – in steady decline over the past few years – reached a five-year low in 2003.

In every facet of our operations, we maintain a focus on improving our health, safety and environment performance. Protecting the health and safety of both employees and the public is an integral part of all our practices, and we take pride in our role as a conscientious steward of the environment we share.

Dick Walthall
President, ATCO Electric

what we do

A Few Words About What We Do



ATCO Electric

Transmission Line System

- Service Area
- Transmission Lines

ATCO Electric is an investor-owned utility delivering electric energy throughout northern and east-central Alberta. We are a member of the ATCO Group of Companies, one of Canada's premier corporations. In 2003, our annual revenues approached \$580 million.

For almost 80 years, ATCO Electric has provided Albertans with safe, reliable, electric energy. Our service area covers nearly two-thirds of the province and features some of Alberta's most rugged terrain. We serve heavy industry, farms, businesses and homes in more than 200 communities.

Our extensive network of transmission and distribution lines connects through tie-lines to the electricity grids in British Columbia and Saskatchewan. We also own and operate 19 isolated generating plants in northern Alberta that serve small communities and industrial customers not connected to the provincial grid.

■ The ATCO Electric System

Transmission Lines	8,880 km
Distribution Lines	55,974 km
REA Distribution Lines Maintained and Operated by ATCO Electric	12,270 km
Number of Isolated Generating Plants	19
Total Generation Capacity	37 Megawatts

■ ATCO Ltd. Financial Information

	2003	2002	2001	2000
Revenues (\$ Millions)	3,929.7	3,196.3	3,754.3	3,076.0
Earnings (Class 1 & 2 Shares) (\$ Millions)	131.2	163.0	124.4	112.7
Total Assets (\$ Millions)	6,591.2	6,403.3	5,833.7	5,815.6
Earnings Per Share (\$)	4.40	5.47	4.18	3.79
Dividends Per Share (\$)	1.28	1.16	1.04	0.92
Equity Per Share (\$)	38.05	35.04	30.66	27.67

Note: ATCO Electric is a wholly owned subsidiary of Canadian Utilities Limited which is majority-owned by ATCO Limited.

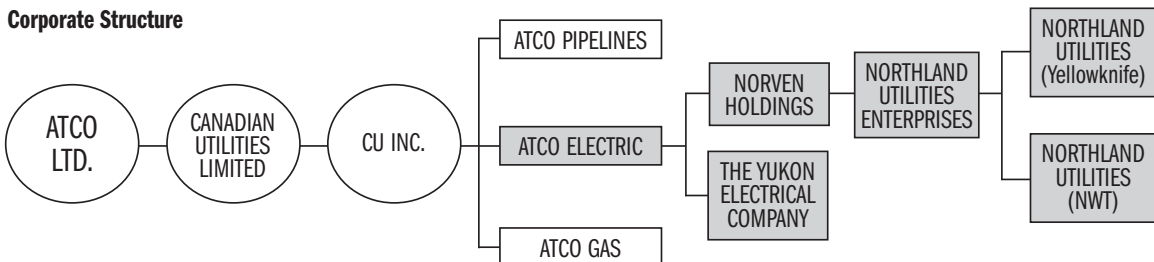
summary

Executive Summary

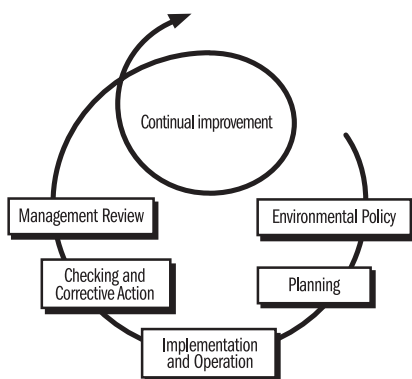
In 2003, ATCO Electric:

- Conducted an Environmental Management System (EMS) audit of the Health, Safety and Environment (HS&E) management system, environmental compliance audits at eight company locations and safety audits at five charter aircraft companies;
- Initiated an internal gap analysis to ensure conformance to Alberta's new Occupational Health and Safety Code;
- Submitted an action plan as part of the company's participation in Alberta Human Resources and Employment's *Partnerships in Health and Safety* program;
- Continued the PCB phase-out program in our transmission system;
- Reviewed testing and handling procedures for SF₆/CF₄ to identify better ways of working with by-products, repairing leaks, controlling releases during maintenance and recycling used gas;
- Participated in a major study into all aspects of spill containment, prevention and management in transmission and distribution substations and established an internal team to evaluate secondary containment technologies for company substations near water bodies;
- Began replacing older isolated generating plants with more efficient, better contained units;
- Started environmental remediation of 22 isolated generating plant sites and completed work at 15;
- Participated in several fire prevention initiatives, including two major studies and a steering committee in Jasper National Park;
- Submitted a Caribou Protection Plan and conducted employee HS&E orientations in conjunction with the new Dover-Whitefish Lake transmission line;
- Worked with Fisheries and Oceans Canada to develop an agreement for stream crossings;
- Conducted four studies aimed at reducing bird-related outages;
- Developed a new respiratory protection practice and guide for working in SF₆ atmospheres;
- Developed new safety protocols for substation fires and explosions;
- Introduced a new observation process at our system control centre;
- Through ATCO EnergySense, responded to almost 150,000 energy management inquiries from the public;
- Participated in the national Commuter Challenge to reduce vehicle-related emissions;
- Purchased the "Hazard Hamlet," a set of safety displays for school children; and
- Provided support to numerous community-based initiatives across our service area.

Corporate Structure



Health, Safety and Environment Management



An Environmental Management System (EMS) is defined as:

“A component of a company’s overall management system that includes the organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy (principles).”

The International Organization for Standardization (ISO) 14001 standard contains 17 elements based on the dynamic, cyclical process of “plan, implement, check and review” that must be satisfied before an organization can become registered or declare equivalency.

ATCO Electric’s corporate Health, Safety and Environment (HS&E) Manual provides overall direction for HS&E management throughout the company. The “4Ps” that make up the manual – our corporate principles, policies, procedures and mandatory practices – are regularly reviewed and updated to ensure they stay current (see pages 5, 32 and 33).

The HS&E Management System addresses specific health, safety and environment issues in transmission, engineering, distribution, materials management, metering services and isolated generation. Best practices and safety standards are built into the HS&E Management System to keep health, safety and environmental responsibility paramount in all our activities. To maintain conformance with current legislation, regulations, policies and industry best practices, all parts of the HS&E Management System undergo regular review.



Safety First software is used to track HS&E data such as employee certifications, audit results and action plans, to ensure we meet our HS&E obligations and to help us identify opportunities to improve.



Together, these tools for HS&E management provide consistency, satisfy ATCO Electric’s commitment to develop an environmental management system equivalent to ISO 14000 standards and meet the requirements of Alberta Human Resources and Employment’s *Partnerships in Health and Safety* program (see Industry and Government Program Involvement). We strive to exceed the expectations of government and regulators, and to maintain the trust and support of company shareholders, our customers and the communities we serve.

2003 Activities

During 2003, ATCO Electric updated the corporate environment incident management policy and all of the corporate environment mandatory practices.

In addition, a task group representing all areas of the company initiated a gap analysis of ATCO Electric's corporate HS&E policies and procedures and the HS&E management system to ensure conformance to the new Alberta

Occupational Health and Safety Code. After completion of the gap analysis, an action plan will be implemented in 2004 to address any deficiencies.

CORPORATE HEALTH and SAFETY MANAGEMENT

The cornerstones of health and safety management at ATCO Electric are our Corporate Health and Safety Principles (page 32), Policies, Procedures and Practices.

The Corporate Health and Safety Policies address:

- Administration and Leadership
- Auditing and Inspection
- Reporting and Investigation of Incidents
- Occupational Health
- Practices and Procedures

- Personal Protective Equipment
- Transportation

The Corporate Mandatory Health and Safety Procedures address:

- Safe Work Process
- Right to Refuse Unsafe Work
- Health and Safety Management of Contracted Work
- Incident Reporting and Investigation
- Worker-Administered Protection

CORPORATE ENVIRONMENT MANAGEMENT

The cornerstones of environment management at ATCO Electric are our Corporate Environment Principles (page 33), Policies and Mandatory Practices.

The Corporate Environment Policies address:

- Environmental Leadership
- Managing Facility/Activity Impacts
- Auditing, Inspections and Reporting
- Incident Management
- Waste Management
- Managing Special Materials

- Air and Water Quality Management
- Greenhouse Gas Emissions Reduction Programs

The Corporate Environment Mandatory Practices address:

- PCB Management
- Release Response and Reporting
- Hazardous and Non-Hazardous Waste Receiving Facilities
- Waste Classification for Landfilling
- Commercial Environmental Laboratories

performance

Performance Evaluation

Environmental Audits

ATCO Electric regularly conducts environmental audits of company operations to ensure conformance with environmental laws, regulations, corporate policies and practices and ISO standards for environmental management systems (EMS). Recommendations are followed-up with action plans and progress reports are submitted monthly to senior management.

Environmental audit activities in 2003 included:

- An EMS audit of the HS&E management system, to identify any deficiencies that need to be addressed before the system is declared equivalent to ISO 14000 standards.
- Compliance audits at eight company locations (a PCB storage facility, five warehouses and storage yards and a diesel-fueled isolated generating plant), to assess compliance in spill prevention and control, solid and hazardous waste management, air and water pollution control and PCB management.



Environmental audit of our Lloydminster warehouse and storage yard.

Corporate Health and Safety Audits

In order to maintain our Certificate of Recognition in the Partnerships in Health and Safety program, ATCO Electric has an accredited external auditor certify the company's health and safety program every three years. An approved action plan or internal audit process ensures compliance in the intervening years. The Alberta Construction Safety Association (ACSA) is the certifying partner for ATCO Electric and provides quality assurance for our health and safety audit program on behalf of Alberta Human Resources and Employment.

In 2003, ATCO Electric submitted a Partnerships action plan to the ACSA. An external audit will be conducted in 2004.

Charter Aircraft Audit Program

ATCO Electric conducts bi-annual safety audits of charter aircraft operators contracted to fly employees to locations not served by commercial flights. In 2003, five charter aircraft companies were audited.

Self-Evaluation

All operating areas complete annual self-evaluations of the company's HS&E best practices to determine their ongoing effectiveness and compliance. Action plans are developed to address any deficiencies and progress is monitored by the appropriate manager. Employees also regularly inspect company facilities, vehicles, personal protective equipment, fall protection systems and other tools used on the job.

Pollution Prevention

ATCO Electric is committed to minimizing the impact of company operations on the environment. We take this commitment

very seriously and consider our corporate environmental principles and policies in every business decision we make.

■ Annual Expenditures on Environment and Pollution Prevention (In \$ 000's)

	2003	2002	2001	2000	1999
Capital	8,298 ¹	3,672	4,100	2,800	1,800
Operation & Maintenance ²	- ³	2,508	530	570	470
Total Expenditures	-	6,180	4,630	3,370	2,270

1 In 2003, capital expenditures included \$7.9 million for remediation of our isolated generating plant sites, which is fully recoverable from a balancing pool established by the Alberta government. Other capital expenditures include the PCB phase-out program in our transmission system and vegetation management programs.

2 Operation and maintenance expenditures include environmental audits, training, storage tank upgrades and recycling initiatives.

3 Unavailable due to changes in cost recovery methods in 2003.

Air Emissions

Isolated generating plants are the main source of ATCO Electric's air emissions. In 2003, 11 of the company's 31 plants were sold and one was interconnected to the provincial grid. Most of the remaining plants are being upgraded to improve operating efficiency and fuel containment.

In accordance with Alberta Environment regulatory requirements, ATCO Electric monitors carbon dioxide (CO₂) emissions at all of the company's diesel/natural gas-fired isolated generating plants and sulphur dioxide (SO₂) and nitrogen oxides (NO_x) at the two plants with environmental approvals (i.e., plants with a generating capacity of more than one megawatt).

■ Total Net Generation in GWh

	2003	2002	2001	2000	1999
Diesel & Natural Gas	92.2	96.8	103.2	128.3	84.5
Hydroelectric	6.9	7.3	6.9	7.3	7.2
Total	99.1	104.1	110.1	135.6	91.7

■ Total Net Air Emissions in Tonnes

	2003	2002	2001	2000	1999
CO ₂	78,666	83,629	99,441	126,124	68,520
SO ₂	9.4	7.9	9.3	23.9	10.5
NO _x	1,031.3	991.6	1,127.1	1,382.8	1303.8

■ CO₂ Emission Intensity (kg/KWh), Based on Total Net Generation

	2003	2002	2001	2000	1999
	0.794	0.803	0.903	0.930	0.747

Emission intensity is the amount of CO₂ produced per unit of electricity available to consumers. A lower emission intensity indicates “cleaner” generation. As shown in the table on page 7, the emission intensity of ATCO Electric’s isolated generating plants has been decreasing since 2000 as the higher-emission plants are decommissioned.

Hazardous Substances

PCB Phase-Out Program

ATCO Electric continues to phase out all equipment with a PCB concentration greater than 40 parts per million (ppm), which is more stringent than the regulatory limit of 50 ppm.

The program was completed in our distribution system in 2001, and has been ongoing in our transmission system since the early 1980s. Small, sealed apparatus have been the focus in recent years, following testing and replacement of all large PCB-contaminated equipment. The phase-out of all transmission equipment was originally targeted for 2007. However, changes to proposed federal PCB legislation that will exempt small volume units has extended our program and shifted the focus from immediate elimination to PCB management.

In 2003, 152 transmission substations and storage sites were inventoried and approximately 2,800 pieces of installed and spare apparatus were identified for testing. Samples were collected from 219 units in 2003, bringing the total number tested to date to 419.



Workplace Hazardous Materials Information System (WHMIS)

ATCO Electric’s WHMIS database included 500 controlled products in 2003. Whenever possible, ATCO Electric replaces controlled products with less hazardous consumer products.

At every location, WHMIS coordinators monitor inventory and ensure current Material Safety Data Sheets (MSDSs) are available for every controlled and consumer product used in our operations. MSDSs provide detailed toxicity information so employees have the knowledge to safely identify, work with and dispose of any they encounter in their work. This information can also be accessed through the company Intranet.

Wood Pole Preservation

The thousands of wood poles in ATCO Electric’s transmission and distribution systems are periodically treated with a preservative to extend their useful life. To minimize any risk to the environment, we use Cobra™ pole wraps and boron rods, which are approved for use by Agriculture Canada, Canada’s Pesticide Management Regulatory Agency (PMRA) and the United States Environmental Protection Agency (EPA) with the lowest risk and hazard rating of any industrial strength pesticide and fungicide. The Cobra™ line was developed by Genics, an ATCO affiliate company. For more information on Cobra™ products, visit www.genicsinc.com.

In 2003, the preservative was used on approximately 43,500 poles in our distribution system and 6,100 poles in our transmission system. A total of 6,620 poles were replaced.

SF₆/CF₄ Containment and Monitoring

Sulphur hexafluoride (SF₆) and carbon tetrafluoride (CF₄) are gases used together as an insulating and arc quenching agent in some types of electrical equipment, primarily transmission circuit breakers and switchers. However, SF₆ and CF₄ have a high global warming potential if released to the atmosphere.

ATCO Electric closely monitors all SF₆/CF₄ equipment for leaks and collects the data in a computerized management system. Pressure readings are taken regularly and storage bottles are weighed every six months and after every use. At some locations, low gas pressure alarms provide continuous monitoring.

In 2003, ATCO Electric had 2,009 kg of SF₆ in service in 465 units.

During the year, ATCO Electric's SF₆ team reviewed testing and handling procedures for SF₆/CF₄ to identify better ways of working with by-products, repairing leaks, controlling releases during maintenance and recycling used gas. Other initiatives included installing new leak detectors on a 25 kV breaker and updating reporting criteria to comply with regulatory reporting limits.

Spill Prevention and Control

Potentially harmful liquids used in our operations include diesel fuel, glycol and transformer oil. To minimize the risk of spills, ATCO Electric uses double-walled storage tanks and fuel offloading containment trays, equips service vehicles and storage facilities with spill response kits and provides employees with spill response training.

We are also upgrading containment as our older isolated generating plants are replaced. In 2003, two new plants were constructed and installed – Narrows Point, on the north side of Lesser Slave Lake and Touchwood, northeast of Lac La Biche. These plants feature a top-draw fuel pumping system and secondary containment wherever contaminating fluids are handled, such as the fuel offloading area, fuel tanks, fuel piping and the engine rooms. The plant buildings are also contained, with trip switches in the floor to shut down the plant if fluid reaches flood level. Similar measures will be implemented at seven other plants scheduled for replacement within two years.

As a further precaution, an ATCO Electric employee observes all fuel offloading to ensure proper procedures are followed and to respond quickly if a release occurs.

Waste Management

At each location, ATCO Electric employees identify, collect and ship a wide range of recyclable materials to company-approved recyclers or waste handlers, as appropriate.

Waste Disposal

ATCO Electric's hazardous waste storage facility in Vegreville stores and arranges disposal of PCB-contaminated materials and other hazardous materials through approved waste handlers. In 2003, the facility disposed of 1,887 litres of PCB-contaminated oil, 4,440 kg of PCB-contaminated oil-filled bushings, 2,500 kg of PCB-contaminated instrument transformers and voltage regulators and 225 kg of other hazardous waste. The facility also arranged recycling or disposal of 18,278 kg of non-hazardous waste.

Used Oil and Associated Equipment

ATCO Electric belongs to a consortium of Alberta electric utilities formed to reuse and recycle transformer oil. In 2003, 386,000 litres of transformer oil were reclaimed and reused within the company. Another 113,000 litres of non-reclaimable transformer and motor oil were shipped to approved recyclers for use in fuel blend and other recycled oil products.

ATCO Electric also recycles transformers and oil filters. In 2003, 1,424 transformers were removed from service and shipped to approved recyclers. Of these, 409 are being repaired or remanufactured, saving approximately \$476,000 in replacement costs.

SF₆

ATCO Electric owns and operates four SF₆ recovery units. During maintenance, the gas is recovered, conditioned and reused. If the gas cannot be conditioned to proper levels, it is disposed of in accordance with regulatory requirements and current environmental best practices. In 2003, six kg of SF₆ was recycled.

Other Materials Targeted in Reuse, Recycle and Recovery Programs

- Paper and cardboard
- Wood poles and crossarms
- Wood pallets and conductor reels
- Conductor and guy wire
- Oil drums
- Regulators
- Auto boosters
- Screws, bolts and insulator porcelain
- Metal streetlight heads and poles
- Batteries (lead acid and Nicad)
- Aerosol cans
- Oil filters and rags
- Glycol
- Silica
- Clear glass (from street light heads and meter covers)



Recycling bins in the Lloydminster storage yard.

- Fluorescent tubes and high-pressure sodium light bulbs
- Toner cartridges
- Soft drink bottles, cans and juice boxes

Surplus and Obsolete Equipment and Materials

ATCO Electric regularly sells or donates used materials and equipment no longer needed by the company.

In 2003, surplus equipment sales revenue included \$2.4 million for 11 isolated generating plants and \$376,000 for transformers. The isolated generating plant sales were approved by the Alberta Energy and Utilities Board and included industrial sites, microwave sites, mobile units and miscellaneous related equipment.

ATCO Electric also donated treated wood poles to farmers in our service area, for use as fence posts and in other outdoor construction projects.

Research

ATCO Electric continues to investigate new ways to reduce the risk of harmful substances entering the environment. Research projects in 2003 included:

- Participating in a major study into all aspects of spill containment, prevention and management in transmission and distribution substations. The study is being coordinated by the CEA Technology Group and conducted by Kinectrics Inc.
- Evaluating secondary containment technologies for company substations near water bodies.

assessment

Site Assessment and Remediation

ATCO Electric conducts an environmental site assessment before purchasing, leasing or selling property, and ensures all sites are remediated to acceptable standards if harmful substances are detected in the soil and/or water. Site assessments may also be conducted at operating facilities, for example after a major spill.

Isolated Generating Plants Sites

Three years ago, ATCO Electric initiated a multi-year project to assess and remediate, as required, all of the company's operating and retired isolated generating plant sites. Of 105 sites assessed, 79 require remediation by excavating contaminated soil, hauling it to approved landfills and backfilling with clean soil.

In 2003, work began at 22 of the sites and was completed at 15. Further remediation is required at the other seven sites to address contamination under nearby buildings or roadways.

Another 24 sites will be remediated by fall 2004, and 11 the following winter. This will involve evaluating alternate technologies, such as thermal desorption for remote sites, and identifying methods to remediate contaminated soil under buildings.



Radway substation remediation.

Other Site Assessment and Remediation Activities in 2003:

- Site assessments at the Radway substation (near Smoky Lake) and the Ardmore substation
- Lease-return site assessment at a warehouse yard in Lloydminster
- Baseline site assessments at the Garden River and Touchwood microwave power plants, as part of the plant replacement project
- Sampling of excavated soil at the Jasper Palisades power plant

All sites met regulatory criteria except the Radway substation, where soil sterilant was detected. Remediation is planned for 2004.

management

Vegetation Management and Fire Prevention

ATCO Electric routinely trims or removes trees along power line rights-of-way to prevent the possibility of electrical contact and reduce the risk of fire. In populated areas, ATCO Electric forest operations coordinators are available to help landowners with tree selection and placement to ensure adequate clearance from the lines.

To control other unwanted vegetation, we use both mechanical and chemical methods, carefully balancing effective control with environmental protection. For example, only targeted plants are treated in sensitive areas alongside crops, lakes and streams.

In recent years, ATCO Electric responded to drought conditions in northern Alberta with a shortened mowing cycle from High Level to Fort McMurray. This practice will become bi-annual as moisture increases and the fire hazard is reduced.

In 2003, ATCO Electric's involvement in fire prevention initiatives also included:

- Sponsoring and participating in a study led by the Forest Engineering Research Institute of Canada (FERIC) to investigate vegetation management techniques and their impact on fire behaviour along "linear disturbances" (i.e., power line rights-of-way, roads, railroad tracks, etc.).
- Assessing fire behaviour in modeled forest stands in the Swan Hills district and working with the local Forest Management Agreement (FMA) holder to schedule tree removal as part of their harvesting sequence. ATCO Electric assisted by co-developing the model, scheduling outages, liaising with affected customers and providing orientation for crews working next to our facilities.
- Assisting Parks Canada by participating in a Jasper National Park steering committee and providing crews to facilitate fire reduction strategies next to energized power lines within the park.

- Sponsoring a University of Alberta study on the Human Dimensions of Fire Management at the Wildland Urban Interface. This study will examine the perceptions of individuals and how they view wildfire and the associated threats.
- Co-sponsoring the *Partners in Protection* website. This Alberta-based coalition of national, provincial and municipal associations and government agencies is dedicated to safeguarding Alberta communities from wildfire. (www.partnersinprotection.ab.ca)
- Participating in a study into fire protection and prevention in transmission system transformer stations coordinated by the CEA Technology Group and conducted by Hughes Associates in Baltimore.
- Assisting with plans for intensive vegetation management in the Fire Protection Area identified by Alberta Sustainable Resource Development's Forest Protection Division and, in consultation with the forestry industry, analysis of forest cover vegetation to determine fire risk potential.

protection

Habitat Protection

ATCO Electric works with Alberta Sustainable Resource Development and various non-government groups to minimize the impacts of company operations and facilities on bird, wildlife and fish habitat.

An Environmental Protection Plan (EPP) is prepared and submitted to the Alberta Energy and Utilities Board with each application to build new transmission facilities. The EPP identifies the general environmental impacts of the new construction, including wildlife concerns.

Before acquiring easements, ATCO Electric also prepares an Environmental Field Report (EFR). The EFR is a more detailed assessment that assists Alberta Sustainable Resource Development in identifying specific protective measures which may need to be addressed in a separate plan, such as the Caribou Protection Plan developed in 2003 for the Dover-Whitefish Lake transmission project. EFRs are also required for distribution facility easement applications on Crown land in areas specified by the Alberta government.

In 2003, ATCO Electric also worked with the federal Department of Fisheries and Oceans on an agreement to identify acceptable stream crossing practices and authorization requirements. After the agreement is finalized, ATCO Electric will complete a practice to help employees minimize the effects of construction and maintenance activities on fish habitat.

Fatal Attraction – Birds and the Power System

Many native bird species have a natural attraction to power system facilities. Raptors such as hawks, owls, falcons and eagles seek the vantage point offered by poles and transmission towers for hunting, feeding, perching, roosting and occasionally nesting. Ravens and owls are often attracted to substations. Other species, primarily migratory birds, may collide with power lines on take-off and landing. As well as causing



Bird guards being installed on a corner structure.

power outages, the birds often die as a result of electrical contact.

To address the problem, ATCO Electric consults with some of the foremost bird experts in North America and has undertaken several studies:

- ATCO Electric, Alberta Environment and the University of Alberta are co-sponsoring a two-year study into raptor contacts on transmission and distribution power lines. Following a literature search in 2002, a field study was conducted in the Forestburg-Consort-Stettler area in summer 2003. Captive raptors in a “flight pen” will be used to test retrofits for high-risk structures in fall 2004.
- A second study addressing bird mitigation on transmission corner structures was completed in fall 2003, using live raptors in a controlled setting to test the effectiveness of bird guards. In addition, a pilot project was conducted to prevent bird-related outages in substations. Three substations and one 72 kV line were retrofitted with bird mitigation equipment based on the study results.
- Other bird-related projects were aimed at reducing the high number of contacts on a portion of the distribution system in the Forestburg and Red Earth areas, and

addressing the ongoing problem of osprey nesting on corner structures in the Jasper, Cold Lake and Swan Hills areas. The latter is a pilot project that will involve relocat-

ing the nests to platforms in nearby forests based on biologists' recommendations, then redesigning or retrofitting the corner structures to prevent future nest-building.



Woody Debris Attracts Wildlife

Piles of woody debris placed along the right-of-way for the new Dover-Whitefish Lake transmission line are attracting a variety of small mammals. The piles, deliberately left in 2002 to benefit furbearers, provide cover for rodents and a ready food source and lookout point for marten, fisher and other natural predators. This innovative project, supported by ATCO Electric, the Fort McKay Industry Relations Corporation, government wildlife staff and local trappers, will be expanded to sites along other new lines in 2004.

Electric and Magnetic Fields (EMFs)

EMFs are invisible lines of force found wherever power lines, associated equipment or electric appliances transmit or use electricity. The effects of EMFs have been studied extensively over the past three decades, with most of the evidence concluding EMFs are not hazardous to human health.

To answer our customers' most frequently asked questions about EMFs, ATCO Electric has produced an EMF fact sheet. Additional information is available from our website at www.atcoelectric.com and the ATCO Electric Customer Assistance Centre (1-800-668-2248). ATCO Electric also conducts EMF surveys and, on request, can provide data to compare local conditions to typical residential EMF values.

ATCO Electric continues to monitor EMF research and supports the efforts of:

- The Canadian Electricity Association EMF Task Group; and
- EMF Gateway (an Internet-based information service provided by Resource Strategies, Inc.).

health and safety

Employee Health and Safety

Employee health and safety are a high priority at ATCO Electric.

All new, permanent employees whose work involves safety-related risks are requested to undergo a medical assessment. New employees also receive orientation to the HS&E management system and the Safety Standards Manual. Depending on their duties, they may complete courses in Standard First Aid, Job Planning, Hazard Assessment, Transportation of Dangerous Goods, Fitness for Work, Workplace Hazardous Materials Information System (WHMIS) and Safe Driving. Specialized training is also provided to employees who perform high-risk tasks.

HS&E issues that arise on the job are discussed at monthly safety meetings, where employees work together to develop safer work practices. ATCO Electric also encourages Edmonton employees to attend lunch hour seminars on health topics and offers periodic testing for hearing loss, blood pressure and cholesterol levels to employees across our service area.

In 2003, employee health and safety initiatives included:

- Development of a new respiratory protection practice and guide for working in SF₆ atmospheres.
- Development of a safety protocol for sampling, cleanup and post-cleanup testing of the atmosphere and debris following a substation explosion or fire, and a specific safety protocol for an explosion or fire involving SF₆/CF₄ equipment.
- Introduction of a new observation process at the system control centre, to include review of work completed as well as work in progress.
- Revision of our Power System Work Standards, to ensure compliance with Alberta's Electrical and Communication Utility Code.
- HS&E orientation for all employees involved in the Dover-Whitefish Lake transmission project.



The ATCO Electric Training Centre in Nisku provides employees with a safe learning environment for power line work. In 2003, 20 employees were enrolled as first, second and third-year apprentices.

A Healthy Indoor Environment

ATCO Electric conducts air quality testing and ergonomic assessments on request and makes adjustments as necessary to improve the health and comfort of employees working in office environments.

Emergency Preparedness and Response

ATCO Electric's emergency plan prepares employees to respond to any emergency affecting the power system, including a major power outage, forest fire, flood or other natural disaster, release of a potentially harmful substance or a medical emergency. The plan is designed to be activated locally and escalate through the company as necessary. It also links with municipal, provincial and national emergency plans.

All parts of the plan are tested regularly so employees know exactly what to do when an emergency occurs. In 2003, several locations updated their local response plans and worked together to coordinate the plans throughout the company.

Incidents

ATCO Electric employees are trained to respond quickly in the event of an environment or health and safety incident. If the incident requires specialized knowledge or exceeds the resources immediately available to them, employees can access assistance from within the company and/or external emergency response agencies.

After the immediate risk has been addressed, the incident is reported to the appropriate authorities. An investigation

may be conducted, depending on the nature and severity of the incident. In the case of an environmental release, the site is also cleaned up; major releases are remediated to government standards.

Environmental Incidents

Environmental incidents at ATCO Electric typically involve accidental spills or leaks of liquids such as diesel fuel, glycol or transformer oil. Most often, the source of a spill or leak is related to fuel storage at an isolated generating plant site or damaged oil-filled equipment in the transmission and distribution system. In 2003, 72 per cent of environmental incidents were spills or leaks of 20 litres or less (see table).

A second type of environmental incident involves the unintended release of a compressed gas such as the SF₆/CF₄ used in circuit breakers and switchers. There were four SF₆/CF₄ and two refrigerant releases in 2003, all less than five kg.

ATCO Electric closely monitors environmental incidents and has established internal reporting procedures that are more stringent than legislated requirements.

■ Reportable* Spills by Volume (litres)

	2003	2002	2001	2000	1999
10 or less	30	40	32	38	45
11 - 20	14	6	9	8	14
21 - 50	12	10	6	14	17
51 - 100	1	5	3	8	6
101 - 1000	4	6	10	8	3
> 1000	0	1	1	3	1
Total	61	68	61	79	86

* Includes internally reportable incidents as well as incidents legally reportable to external regulatory agencies.

Health and Safety Incidents

ATCO Electric promotes safe work practices and provides all employees with the training and equipment they need for safety on the job. However, even the most extensive preparation cannot predict every eventuality, and incidents do still

occur. To reduce the risk of incidents, we continue to make safety a priority in all our operations.

ATCO Electric also tracks incidents to identify trends and improvement opportunities. For example, the company is currently taking steps to reduce the number of vehicle incidents.

■ Annual Expenditures on Health and Safety Incident Prevention (\$)

	2003	2002	2001	2000	1999
	219,447	161,646	217,657	149,883	N/A

■ Health and Safety Incidents

	2003	2002	2001	2000	1999
Medical ¹	38	28	25	27	31
Disabling ²	8	13	10	13	14
Vehicle ³	91	82	60	75	60

1 Any work-related injury or occupational illness that requires an employee to seek outside medical treatment, but does not prevent their subsequent return to work.

2 Any work-related injury or occupational illness that prevents an employee from reporting to work on their next work day or subsequent work days.

3 Any incident involving a vehicle engaged in company business.

■ Frequency and Severity Indicators for Medical and Disabling Incidents

	2003	2002	2001	2000	1999
Lost Time Incident (LTI) Frequency ¹	1.0	1.6	1.2	1.6	1.7
Days Lost ²	89	53	66	142	6102 *
Severity Rate ³	10.7	6.5	8.2	17.8	748.1

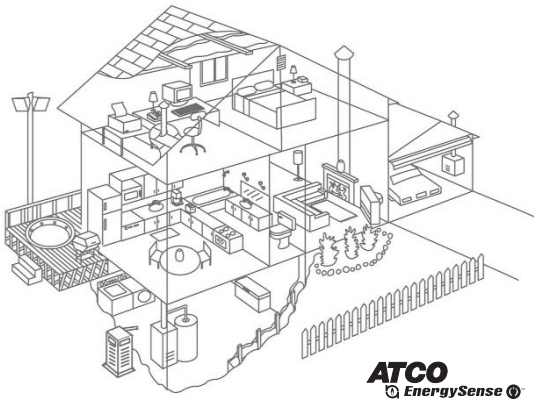
1 Standard measure accepted by industry for comparison purposes. LTI Frequency is calculated by multiplying the number of disabling injuries and illnesses by 200,000 (the approximate number of hours worked by 100 employees in one year), and dividing the product by the actual number of hours worked. A lower LTI Frequency indicates there were fewer disabling injuries for the number of hours worked.

2 Actual number of days not worked by employees due to work-related injury. A fatality is recognized with 6,000 days lost, an industrial standard used across Canada for statistical purposes.

3 Severity is calculated by multiplying the number of days lost by 200,000 (the approximate number of hours worked by 100 employees in one year), and dividing the product by the actual number of hours worked. A lower severity rating indicates injuries were less severe.

* Includes 6000 days lost due to a fatality.

Energy Management



The ATCO EnergySense House

ATCO EnergySense

ATCO EnergySense is a full energy management service jointly offered by ATCO Electric and ATCO Gas.

Energy efficiency analysts and field experts answer telephone inquiries, provide on-site advice and arrange cost-effective home and business energy evaluations. The interactive EnergySense web site (www.atcoenergysense.com) helps customers conduct a room-by-room energy assessment and offers energy saving tips and information. Presentation materials are also available for trade shows and public meetings across our service area.

In 2003, almost 150,000 people used ATCO EnergySense resources:

- Trained energy analysts and customer representatives answered more than 33,000 e-mails and calls to the toll-free advice line 310-SAVE (310-7283).
- More than 107,000 individuals visited the ATCO EnergySense website.
- Trained evaluators performed more than 7,800 EnerGuide for Houses* home energy evaluations.

- Energy experts completed 20 commercial energy evaluations.

ATCO Electric also distributes energy management fact sheets and guides through our local service offices, the customer assistance centre and the ATCO Electric website (www.atco-electric.com).

**EnerGuide and EnerGuide for Houses are official trademarks of Natural Resources Canada. Used with permission.*

Other Energy-Saving Initiatives

In 2003, ATCO Electric participated for the first time in the National Commuter Challenge. This event, which takes place during Environment Week in early June, aims to reduce greenhouse gases by encouraging Canadians to walk, bike, skate or ride public transit to work. Participating ATCO Electric employees reduced emissions by an estimated 3,200 kilograms during the week, equal to the emissions one car produces every 15,000 kilometres.

Other energy efficiency initiatives in 2003 included upgrading the insulation in two substation control buildings and developing plans to re-insulate the Vegreville transmission maintenance centre.

community

Community Involvement

ATCO Electric is proud to take an active role in Alberta communities. Each year, we support a wide range of local and provincial initiatives that benefit the environment and Albertans in general.

In 2003, these included:

- Careers: The Next Generation Foundation, a private/public partnership dedicated to the career development of Alberta's youth
- Drumheller's internationally renowned Royal Tyrrell Museum
- Alberta Children's Hospital Foundation
- ASTech Awards – Alberta Science and Technology (ASTech) Leadership Foundation
- Sir Alexander Mackenzie Historical Society

Through our annual *Employees for Community Health and Welfare Organizations* (ECHO) fundraising campaign, ATCO Electric also matches employee donations to registered health or welfare charities in their communities. In 2003, more than \$167,818 was raised to support hundreds of non-profit and community service organizations across the province.



Artwork donated by ATCO Electric in 2003 helped raise money for improvements at the Nitehawk Ski Hill in Grande Prairie.



"Hazard Hamlet" tabletop display.

Educational Support

Recognizing the important role of education in preventing electrical incidents, ATCO Electric works with schools, communities and industry to develop resources and identify opportunities to increase safety awareness.

For example:

- ATCO Electric's *7 Steps to Electrical Safety for Workers* program educates contractors about electrical hazards.
- The company's new "Hazard Hamlet" display set travels to school presentations, open houses and other community events in our service area.
- The award-winning Teaching Power program is distributed free of charge to schools throughout our service area. The program was developed in consultation with Alberta teachers and is designed to complement the Alberta curriculum for grades 4 to 6.
- High- and low-voltage presentations are available to emergency services personnel, local businesses and community organizations, and safety brochures are offered to homeowners and farmers.

To inquire about any of our public education resources, call 1-800-668-2248.



ATCO Electric presents a cheque to the Slave Lake Food Bank Drive.

Participatory Support

For close to 80 years, ATCO Electric employees have been enthusiastic volunteers in the Alberta communities where they work, live and play. Many participate in activities such as:

- Toxic-roundups, community clean-ups and environmental fairs
- *Communities in Bloom*, a not-for-profit program that fosters civic pride, environmental responsibility and community beautification
- Meetings with environmental interest groups



Community cleanup in Bonnyville.

- Volunteer fire departments
- School councils and community boards
- Food bank drives
- Service clubs and minor sports organizations
- Career days and science presentations at local schools

ATCO Electric's Volunteer Recognition Fund was established to reward and encourage their community spirit. Seasonal and full-time employees who volunteer at least 50 hours in a year can apply for a \$150 donation to the registered charity of their choice. In 2003, ATCO Electric donated \$16,650 on behalf of 111 employees who volunteered a total of 16,503 hours.



Jerrold Lemko (left) from our Vegreville office is presented with the Outstanding Volunteer of the Year award.

Public Consultation

ATCO Electric recognizes the importance of public input whenever there is concern our activities may have an impact on the environment, health or safety of surrounding communities. The process for gathering input depends on the scale of the project, ranging from a friendly visit from the local serviceman to a full public consultation process, as is required for large or environmentally sensitive projects. Presentations, open houses and surveys are some of the tools we use to communicate our plans and hear your concerns.

involvement

Industry and Government Program Involvement

ATCO Electric participates in the following industry and government programs, contributing both data and health, safety and environment expertise.

Alberta Human Resources and Employment

ATCO Electric is a longstanding Partner in Alberta Human Resources and Employment's *Partnerships in Health and Safety* program. Every three years, the company is reissued a Certificate of Recognition in the program, most recently in 2001 (see Performance Evaluation: Corporate Health and Safety Audits).

The purpose of the *Partnerships* program is to:

- Heighten awareness among employers and worker representatives of the importance of workplace health and safety;
- Promote the involvement of employers, associations and organizations in Partnerships;
- Assist employers and other stakeholders in the development, implementation and evaluation of health and safety programs appropriate to their needs; and
- Ensure health and safety management systems that meet Partnerships standards are in place at all work sites.

Alberta Electrical and Communication Utility Code (ECUC) Safety Sub-Committee

The ECUC was formed to establish a minimum safety standard for installing and maintaining electrical and communication utility systems in Alberta. ATCO Electric has chaired the safety sub-committee for the last two years. Its mandate is to explain the intent of the electrical worker safety rules in the ECUC, so they can eventually be transferred from the ECUC to the Occupational Health and Safety Code.

Canadian Electricity Association (CEA)

CEA Environmental Commitment Responsibility Program



The CEA Environmental Commitment and Responsibility Program (ECRP) was introduced in 1997 to demonstrate an industry-wide commitment to sustainable environmental performance. Participation is a condition of CEA membership.

In 2003, ATCO Electric continued to contribute to overall program development and submitted data on environmental performance indicators such as energy efficiency, reuse of electrical insulating oil and atmospheric emissions. ATCO Electric also participated in both the Steering Review Committee and the Implementation Working Group (since combined into one task group).

Internally, ATCO Electric continues to work toward meeting ECRP requirements for environmental indicator reporting and developing an Environmental Management System equivalent to ISO 14000 standards. More information is available through the CEA website at www.canelect.ca.

Health and Safety Subsection

ATCO Electric participates in the Health and Safety Subsection of the CEA, which meets periodically to exchange information on health and safety matters pertinent to the electric utility industry. The Subsection also circulates investigations of major incidents in the electric utility sector.

In 2003, the Incident Statistics Working Group revised the CEA incident reporting standard to include contractor lost time injury frequency information. The revised standard will be reflected in the 2005 CEA Incident Statistics Report.

Other CEA Groups

ATCO Electric is also active in the following CEA groups:

- Transmission and Distribution Councils
- Stewardship Task Group
- PCB Task Group
- Treated Wood Pole Task Group
- Species at Risk Task Group
- EMF Task Group
- SF₆ Task Group
- Emergency Response Task Group
- Occupational Health and Safety Task Group

Construction Owners Association of Alberta (COAA)

ATCO Electric participated in the Health and Safety Subcommittee of the COAA in 2003, which is developing best practices for heavy industrial construction. The Subcommittee has been recognized by the Alberta government for its support of a provincial safety initiative aimed at reducing lost-time injuries by 40 per cent by the end of 2004.

Cumulative Environmental Management Association (CEMA)

ATCO Electric has been an associate member of CEMA since its inception. CEMA is a multi-stakeholder initiative working to manage the cumulative impacts of industrial development and protect the environment in the Wood Buffalo region.

Provincial Power Line Contact Task Force

This public/private task force was initiated by the Alberta Construction Safety Association (ACSA). Its purpose is to reduce the number of electrical contacts by building awareness among non-utility, high-risk industries and working with Alberta Workplace Health and Safety to establish minimum training requirements. In 2003, all stakeholders approved a computer-based training program. The ACSA is developing the program, which should be ready for public use by mid-2004.

Recycling Council of Alberta (RCA)

The RCA promotes and facilitates waste reduction, recycling and resource conservation in Alberta's industrial, commercial and institutional sectors. ATCO Electric has been a member of the RCA for the past two years.

Voluntary Challenge Registry (VCR)

A longstanding member of this national climate change initiative, in 2003 ATCO Electric was recognized as a Bronze level reporter for the company's 2002 Climate Change Progress Report. ATCO Electric will continue to monitor climate change issues and report progress to the appropriate federal or provincial agency.

Western Canadian Auditing Roundtable (WCAR)

The WCAR is an ad hoc group of approximately 20 Alberta energy and resource companies that meets three to four times annually to network on environmental auditing. In 2003, WCAR completed the third revision of its Waste Facility Environmental Review (WFER), a tool for auditing waste handlers. The new WFER will be available on the WCAR website in early 2004 (www.wcar.org). The website also features a list of approved companies.

Western Energy Institute (WEI)

As a long-standing member of WEI, ATCO Electric participates in conferences and information exchange on health, safety and environment issues common to the energy industry.

appendix 1

The Yukon Electrical Company Limited

Corporate Profile

The Yukon Electrical Company Limited is a wholly-owned subsidiary of ATCO Electric that serves 14,000 customers in 20 communities in the Yukon and northern British Columbia.



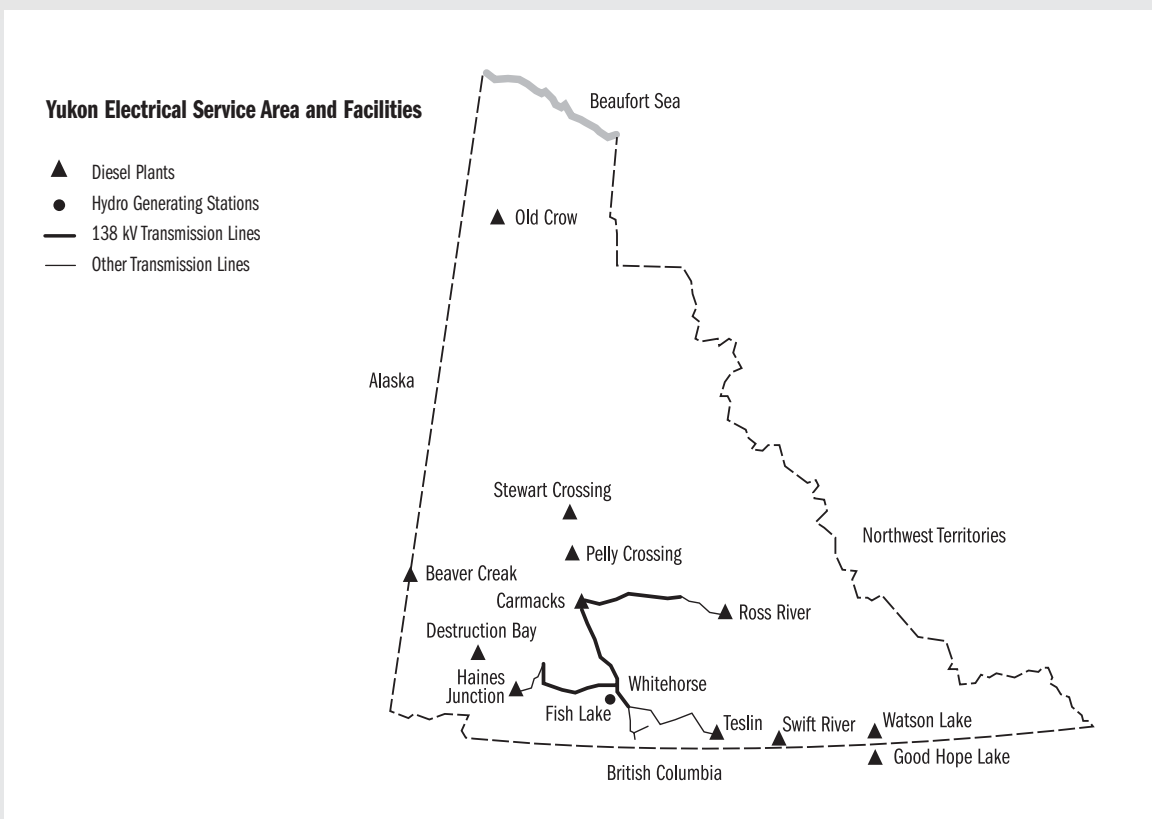
The Yukon Electrical Whitehorse service complex.

(See corporate structure chart on page 3). Yukon Electrical employs 46 people, most of whom are located in Whitehorse.

Health, Safety and Environment Management

Yukon Electrical continued implementing its HS&E management system in 2003. The system is based on ATCO Electric's HS&E management system, with best practices tailored to Yukon Electrical's specific corporate and regulatory requirements. Yukon Electrical uses *Safety First* software to monitor the company's HS&E data.

In 2003, Yukon Electrical conducted a formal risk assessment to identify its significant environmental aspects and developed an action plan for implementation in 2004.



Performance Evaluation

A health and safety compliance audit was conducted in 2003 at Yukon Electrical's Whitehorse and Watson Lake facilities. The audit confirmed that Yukon Electrical's health and safety programs are generally well-managed, and action plans have been developed to correct any deficiencies.

Pollution Prevention

Air Emissions

Yukon Electrical operates 12 diesel-fueled generating plants and one hydroelectric plant. The diesel plants are monitored for CO₂ emissions, based on the total amount of diesel fuel consumed annually and a CO₂ measurement index. Emission intensity is the amount of CO₂ produced per unit of electricity available to consumers. In 2003, emission intensity increased as a result of lower water levels, which reduced the proportion of "emission-free" hydroelectricity.

Spill Prevention and Control

In 2003, Yukon Electrical began a comprehensive upgrade of the company's diesel plant fuel storage and delivery systems to ensure compliance with recent code changes. Work will be completed in stages over the next two years, with priority given to the highest risk areas.

Sulphur Hexafluoride (SF₆) Containment and Monitoring

Yukon Electrical has approximately 18 kg of SF₆ in service in four units. Low gas pressure alarms provide continuous monitoring.

Waste Management

Yukon Electrical strives to minimize waste throughout its operations. In 2003, 157 used transformers were shipped to approved recyclers. Other materials targeted in reuse, recycle and recovery programs include:

■ Total Net Generation (GWh)

	2003	2002	2001	2000	1999
Diesel	21.5	21.7	21.0	20.9	20.8
Hydroelectric	4.9	8.6	9.1	6.9	4.6
Total	26.4	30.3	30.1	27.8	25.4

■ Total Net CO₂ Emissions (tonnes)

	2003	2002	2001	2000	1999
	16,179	16,330	15,782	16,077	15,400

■ CO₂ Emission Intensity (kg/KWh)

	2003	2002	2001	2000	1999
	0.613	0.539	0.524	0.578	0.606

- Lube oil
- Transformer oil
- Lead acid batteries
- Copper
- Structural steel
- Paper and cardboard
- Bottles and cans
- Toner cartridges

Surplus and Obsolete Equipment and Materials

Yukon Electrical sells equipment and materials such as vehicles and scrap metal that are no longer needed by the company. Used computers are donated to schools and other not-for-profit community organizations.

Site Assessment and Remediation

In 2003, the remediated Haines Junction diesel plant site was donated to the Village of Haines Junction for use as a recreational area.

Landfarming and aeration of a contaminated soil stockpile are ongoing at Watson Lake. This project is expected to continue for two more seasons. Yukon Electrical is working with the Yukon Department of Environment to ensure remediation is completed to acceptable standards.

Yukon Electrical also began compiling historical data on old decommissioned diesel plant sites in various Yukon communities as part of a site investigation process. Yukon Electrical is working with the Yukon Department of Environment to determine whether contaminants remain from historical plant operations.

Vegetation Management and Fire Prevention

Effective vegetation management continues to be a key strategy in reducing the risk of wildfire. In 2003, Yukon

Electrical worked with the Yukon government, local communities and private landowners to widen power line rights-of-way. The company also worked with the Yukon government in its territorial *Firesmart* program.

Employee Health and Safety Education

In 2003, Yukon Electrical developed and circulated a brochure on the company's HS&E management system. Employees received additional information from ATCO Electric instructors, who also reviewed revisions to the Safety Standards Manual and job planning. Regular safety meetings provided another forum to raise awareness and discuss HS&E issues.

Contractors also continued to receive instruction on Yukon Electrical's job planning processes, procedures and documentation requirements.

Emergency Preparedness and Response

Yukon Electrical participated in a mock earthquake disaster in 2003. The exercise included downed power lines, chemical leaks and collapsed buildings and tested the interaction between the City of Whitehorse, Yukon Electrical and other critical organizations in a real-life emergency situation.

Incidents

Yukon Electrical employees are trained to respond quickly in the event of an environment or health and safety incident. After the immediate risk has been addressed, the incident is reported to the appropriate authorities. An investigation may be conducted, depending on the nature and severity of the incident. In the case of an environmental release, the site is also cleaned up and remediated to government standards. In 2003, there were two diesel spills of less than 100 litres each.

Mike Thomas of the Yukon News



Mock earthquake disaster exercise in Whitehorse.

Yukon Electrical promotes safe work practices and provides all employees with the training and equipment they need for safety on the job. However, even the most extensive preparation cannot predict every eventuality, and incidents do still occur. To reduce the risk of incidents, we continue to make safety a priority in all our operations.

In 2003, there were five injury incidents for which employees sought outside medical treatment, but no time off work was required. There were also three work-related vehicle incidents.



Micro-solar/wind generator in Whitehorse.

Energy Management

In support of alternative generation, Yukon Electrical buys electricity from a micro solar/wind generator operated by the Boreal Alternate Energy Centre, an Independent Power Producer (IPP), and is involved in feasibility studies by the Yukon Development Corporation into the potential for wind generation/diesel hybrids at Destruction Bay and Old Crow.

In 2003, Yukon Electrical also worked with the Vuntut Development Corporation to assess the feasibility of a waste heat distribution system in Old Crow. Waste heat is already provided to the Town of Watson Lake for the school and recreation centre.



Old Crow generation plant.



Yukon Electrical Helps Whitehorse Kick the Driving Habit

When the City of Whitehorse decided to take action on climate change through Transport Canada's Urban Transportation Showcase Program, Yukon Electrical was keen to help.

After consulting with the public, the business community and the local Rotary Club, the City developed a proposal that aims to get people out of their cars and onto buses, bikes and walking trails. As well as educating the public about greenhouse gases and encouraging public transit, the City will extend and upgrade multi-use routes from residential areas to downtown. That's where Yukon Electrical comes in.

"We have agreed to a one-time investment of \$53,000 for streetlight conversion along two key routes, 4th Avenue and Pucket's Gulch Trail and Staircase," explains Yukon Electrical's James Grattan. "The new lighting will improve safety and make it easier for people to use these routes in both summer and winter.

"We're very pleased to be part of this project." Work is scheduled to begin in spring 2004.

Public Education

To improve electrical safety awareness, Yukon Electrical delivers *7 Steps to Electrical Safety* to contractors, government agencies and school groups. High-voltage displays are used to educate tree clearing and construction contractors and volunteer fire departments about electrical hazards.

Customers receive information about energy management, electrical safety and conservation through local service offices, bill inserts, brochures and trade shows.

Industry and Government Involvement

Yukon Electrical participates in the Yukon Council on the Economy and the Environment.

Northland Utilities Enterprises Ltd. **appendix 2**



The Hay River diesel plant.

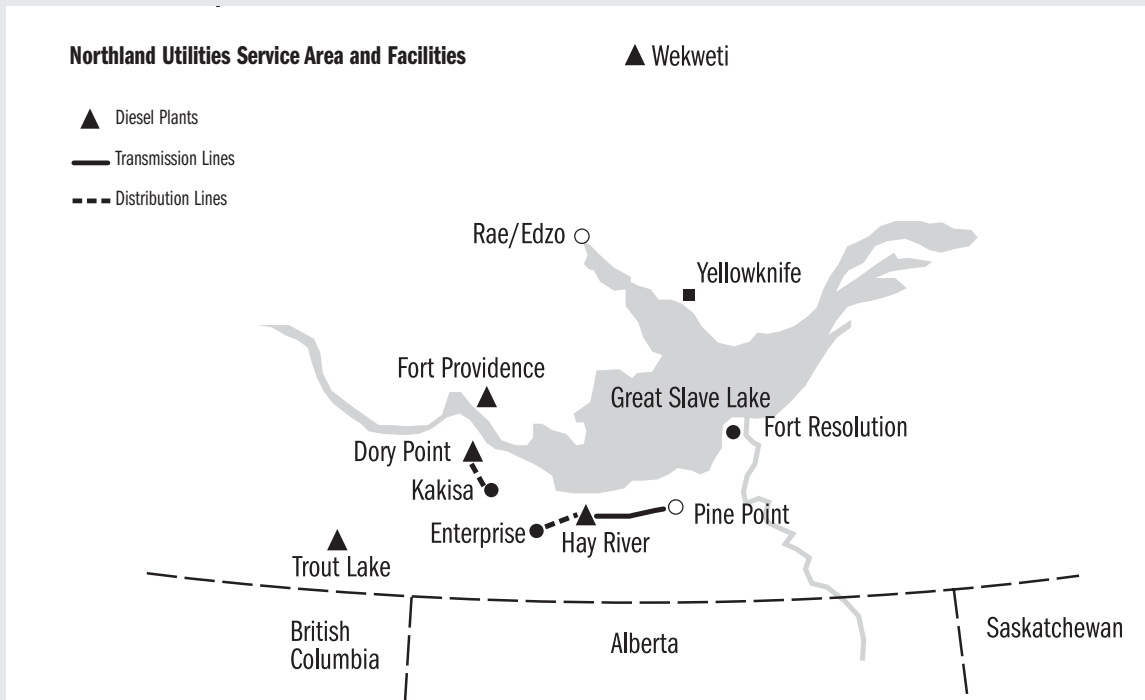
Corporate Profile

Northland Utilities Enterprises Ltd. is jointly owned by ATCO Electric and northern investors Denendeh Development Corporation and Arctic Energy Investors Ltd. (see corporate structure chart on page 3).

Northland Utilities has two subsidiary operating companies. Northland Utilities (NWT) serves 2,500 customers in Hay River, Wekweti (Snare Lake), Trout Lake, Dory Point, Kakisa, Enterprise, Fort Providence and K'atlodeeche First Nation (Hay River Dene Reserve). Northland Utilities (Yellowknife) distributes power to 8,000 customers in Yellowknife and neighbouring N'dilo.

Health, Safety and Environment Management

Northland Utilities continued implementation of its HS&E management system in 2003. The system is based on ATCO Electric's HS&E management system, with best practices tailored to Northland Utilities' specific corporate and regulatory requirements. Northland Utilities uses Safety First software to monitor HS&E data.



To identify their significant environmental aspects, Northland Utilities conducted a formal risk assessment in 2003. An action plan will be implemented in 2004.

Performance Evaluation

Compliance audits conducted in 2003 confirmed that health and safety programs are generally well-managed at both Northland Utilities companies. Action plans have been developed to correct any deficiencies.

Pollution Prevention

Air Emissions

Northland Utilities (NWT) operates five diesel-fueled generating plants. The plants are monitored for CO₂ emissions, based on the total amount of diesel fuel consumed annually and a CO₂ index. Higher emissions in 2003 reflect increased diesel generation as a result of the extended maintenance turnaround of the Taltson hydro plant (owned by the Northwest Territories Power Corporation).

Emission intensity is the amount of CO₂ produced per unit of electricity available to consumers.

Waste Management

Materials targeted in Northland Utilities' reuse, recycle and recovery programs include:

- Motor oil, oil filters and oily rags
- Engine coolant
- Salvaged oil-filled equipment
- Batteries, paints and solvents
- Streetlight heads
- Copper and aluminum scrap wire
- Wood poles
- Wire reels
- Plastic pails
- Paper toner cartridges
- Beverage containers
- Aluminum cans

■ Total Net Generation* (GWh)

	2003	2002	2001	2000	1999
	7.45	5.75	5.88	6.63	5.36

* Diesel plants

■ Total Net CO₂ Emissions (tonnes)

	2003	2002	2001	2000	1999
	5,926	4,623	4,716	5,354	4,320

■ CO₂ Emission Intensity (kg/KWh)

	2003	2002	2001	2000	1999
	0.761	0.800	0.800	0.810	0.810

Site Evaluations

Site evaluations are conducted annually to identify and reduce the potential for spills or other hazards and to ensure compliance with environmental standards.

Vegetation Management and Fire Prevention

Northland Utilities manages unwanted vegetation growth around electrical facilities primarily through mechanical methods (e.g. rototilling, mowing and trimming). Herbicide use is restricted to dandelion control.

Employee Education

In 2003, Northland Utilities provided employees with training in the HS&E management system and the Safety Standards Manual.

Incidents

Northland Utilities' employees are trained to respond quickly in the event of an environment or health and safety incident. After the immediate risk has passed, the incident is reported to the appropriate authorities. An investigation may be conducted, depending on the nature and severity of the incident. In the case of an environmental release, the site is also cleaned up; major releases are remediated to government standards. In 2003, there were three spills of varying amounts.

Northland Utilities promotes safe work practices and ensures all employees have the training and equipment they need for safety on the job. However, even the most extensive preparation cannot predict every eventuality, and incidents do still occur. To reduce the risk of incidents, we continue to make safety a priority in all our operations. In 2003, there was one injury incident where the employee needed outside medical

treatment but did not require time off work. There was also one work-related vehicle incident.

Energy Management

Northland Utilities utilizes waste heat from its Wekweti and Trout Lake diesel plants to heat local buildings, and is investigating similar opportunities with its Dory Point and Fort Providence plants.

Our website (www.northlandutilities.nt.ca) helps customers learn about energy management by touring the interactive "Power House." Customers can also access information at their local service office, through bill inserts and tips printed in community newspapers.

Northland Utilities (Yellowknife) is a member of the Arctic Energy Alliance (AEA), a not-for-profit organization dedicated to helping northerners reduce energy use. In 2003, Northland partnered with the AEA in the EnerGuide for Houses program, which offers customers an energy audit service for a nominal fee.

Northland Utilities (Yellowknife) is also a member of the Community Energy Planning group. Led by the City of Yellowknife, the group is developing a comprehensive plan to reduce energy usage in the community.



Fort Providence diesel plant.

Public Education

Northland Utilities offers safety education to local industry, firefighters and bylaw officers. High- and low-voltage hazard displays are also available for trade shows and presentations to other community groups.

An education package on our web site is designed for students in grades four to six. The package includes units on electricity generation, electrical safety and energy conservation.

Community Involvement

Northland Utilities is proud to be a part of the communities we serve. We support events such as the Caribou Carnival, Folk on the Rocks, youth sport teams, and provide in-kind contributions to many community organizations.

Our employees are also active volunteers and participate in many local organizations and community beautification projects, such as the Communities in Bloom program.

Industry and Government Program Involvement

Northland Utilities is a member of a territorial government committee working on reducing greenhouse gas emissions. The committee is sponsored by Natural Resources Canada.

Northland Utilities also participates annually in Occupational Safety and Health Week, with the Electrical Protection Branch and the Workers' Compensation Board.

Northland Utilities Wins WCB Safety Award

In 2003, Northland Utilities (Yellowknife) was recognized for its safety programs by the Workers Compensation Board during North American Occupational Safety and Health (NAOSH) week.

Manager Jerome Babyn says their winning submission focused on Northland Utilities' initiatives to reduce risk to young workers. Early in the year, the company introduced a new workers' orientation program that covers proper use of protective gear, safe use of equipment and tools, noise protection, health and safety standards/acts/regulations and much more. A 30-day follow-up confirms that young workers have understood and retained the information, and provides them with the opportunity to ask questions that have arisen on the job.

Health and Safety Principles

principles

Safety First - Always

“Safety is the primary consideration in everything we do. It is something that is part of every decision we make and every action we take. If something cannot be done safely, we do not do it.”

Everyone Is Responsible

“We believe every person is responsible for ensuring workplace health and safety and is accountable for the health and safety practices within his or her control. Individually and collectively, we take this responsibility seriously.”

Everyone Knows the Rules

“Policies, practices and procedures must be clear. They must be made known to those who work with them. And they must be consistently applied. Training our people on safe practices and procedures is a responsibility that must be accepted at all levels of the company.”

We Track Our Performance

“Ongoing reviews of how we’re doing make us even better. Regular inspections and periodic audits help us identify where we can improve our health and safety practices. Acting promptly on those results ensures continuous improvement.”

Environmental Principles

principles

MEETING OUR ENVIRONMENTAL RESPONSIBILITY

Integrating Environment into Decision Making

“We will ensure the integration of our environmental principles and policies with our economic decisions in business to minimize impacts on the environment.”

Meeting or Surpassing Regulatory Requirements

“We will strive to use the best available, cost-effective technology and practices to protect the environment. We will comply with, and through continuous improvement, aim to surpass all government environmental requirements.”

DEVELOPING PARTNERSHIPS AND SHARING INFORMATION

Building Partnerships with Customers and Others

“We will continue to work together with the communities we serve, concerned groups and regulatory authorities. We will share information about our environmental activities, discuss mutual concerns and future resource options and, through ongoing collaboration, review practical solutions to existing and emerging environmental challenges.”

Participating in Public and Regulatory Reviews

“We will be an active contributor and participant in various government, public and industry consultation processes concerning environmental policy, legislation, technological issues and community concerns. Our expertise will be available to help develop workable guidelines, standards, regulations and laws.”

FOCUSING ON POLLUTION PREVENTION

Promoting Employee Environmental Awareness

“We will provide training and development opportunities for staff to achieve a level of excellence in environmental awareness and protection. Sharing information on the environmental issues we face will raise awareness of individual responsibilities and strengthen the personal commitment of each employee to this standard of excellence.”

Monitoring, Reporting and Auditing

“Our environmental monitoring and reporting programs will meet and aim to surpass government requirements, confirm compliance with regulatory requirements, and enable the company to assess its impact on the environment. Environmental audits will lead to process improvements and provide assurance on our overall environmental performance.”

Implementing Responsible Waste Management

“We will aim to minimize and to eliminate waste through reduction, re-use, recycling and recovery programs. Appropriate operational procedures and purchasing policies will complement our waste reduction initiatives.”

Promoting Energy Efficiency

“We will be energy efficient in our operations. We will also promote and support energy efficiency with our customers.”

Preparing for Environmental Emergencies

“We will continue to develop, improve and communicate our emergency response plans so that environmental accidents and emergencies are handled safely, promptly and effectively.”

Supporting Environmental Research

“We will support and participate in appropriate research efforts directed at enhancing environmental management.”



ATCO

Code of Ethics

“Protection of the environment is one of our core values; all of us have a role in ensuring our operations comply with environmental legislation, standards and company policy. Safety must be everyone’s concern.

We are committed to providing everyone a safe and healthful workplace and to ensuring safe work practices and conditions.”



Health, Safety and Environment
10035 - 105 Street, Edmonton, Alberta, Canada T5J 2V6
Telephone: 780-420-3429 Fax: 780-420-4193
Email: joe.kostler@atcoelectric.com
www.atcoelectric.com

