



# Lindbergh Substation and 144 kV Transmission Line

PROJECT INFORMATION

November 28, 2008

## Summary

ATCO Electric is planning to build new power transmission facilities in the Elk Point-Lindbergh area of east-central Alberta. The project includes:

- A new substation called "Lindbergh" located about 30 kilometres (km) northeast of the Town of Elk Point.
- About 26 to 28 km of new 144 kilovolt (kV) transmission line originating from an existing 144 kV transmission line west of Highway 41 or 28 north of Elk Point, and extending east to connect to the new substation.

See Page 2 and enclosed drawings for more details.

This summary is being sent to landowners, occupants, agencies and interested parties in the vicinity of the proposed transmission facilities, to provide information about the project prior to ATCO Electric submitting a Permit and Licence Application to the Alberta Utilities Commission (AUC).

## Project Need

These facilities are needed to provide power to a new Inter Pipeline Fund (IPF) pump station north of Lindbergh, and to help maintain reliable service and power quality in the area. The need for the new power facilities has been identified by the Alberta Electric System Operator (AESO). AESO will apply to the AUC for approval of the need concurrent with ATCO Electric's application for the facilities.

## Proposed Timing

- Consult landowners/agencies.....December 2008 to February 2009
- Finalize routing, apply to AUC.....February 2009
- Obtain AUC approvals.....July 2009
- Obtain right-of-way/easements.....July 2009
- Construction .....August to December 2009
- Facilities completed and operating.....December 2009

Timing and other details may vary with final plans.



### Typical 144 kV Transmission Structures.

On the left: single-pole "wishbone" design.

On the right: "wishbone" design with a distribution line attached.



## Public and Agency Referral

Information is being provided to government agencies, landowners and occupants within 0.8 km of the proposed facilities.

Please contact us as soon as possible with any comments, questions or concerns, or to confirm that you have no concerns. A reply form is included in this package.

## Attachments

### ATCO Electric

- Regional Map (drawing P-01)
- Typical Structures (drawing P-02)
- Typical Right-of-Way (drawing P-03)
- Lindbergh Substation Proposed Site Plan (drawing P-04)
- Preliminary Routes Mosaic (drawing P-05)
- Transmission Lines On or Near Your Property information sheets (10 pages)
- Reply form and stamped envelope
- Open House Notice

### AUC Brochure

- Public Involvement in Facility Applications to the Alberta Utilities Commission (8 pages)

## CONTACT INFORMATION

Please contact us with any comments, questions or concerns. **Right-of-Way Planning Contact:**

**Deb Nelson**

ATCO Electric  
10035 - 105 Street  
Edmonton, AB T5J 2V6

**Telephone: 780-420-4151**

**Toll-free: 1-866-600-0022**

Fax: 780-420-8017

E-mail: [deb.nelson@atcoelectric.com](mailto:deb.nelson@atcoelectric.com)

Website: [atcoelectric.com](http://atcoelectric.com)

## Project Details

The project includes:

- Constructing a **new Lindbergh substation "969S"** at the new IPF pump station located on Crown land in SW 7-58-4-W4M.
- Constructing about 26 to 28 km a **new 144 kV transmission line "7LA53"**, starting from a connection-point on existing transmission line "7L53" about 5 to 8 km north of Elk Point, and extending east to the new Lindbergh substation.

Refer to the enclosed drawings for further details.

### **144kV TRANSMISSION LINE DETAILS**

- The proposed line will consist of three conductor-wires plus an overhead shield wire strung on wood-pole structures.
- The typical structure would be a single-pole "wishbone" design, about 18.6 m tall, about 4.2 m wide (at the cross-arms) with a typical span length of about 140 m between poles.
- Non-typical structures with taller or additional poles and/or anchors and guy wires are required where the line ends or bends, at corners, and to go around or over obstacles.
- At the "tap" point where the new transmission line connects to the existing line, there will be a set of multi-pole structures with cross-beams where large switches are mounted.
- In all cases, minimum clearance will meet or exceed the requirements of provincial safety regulations.
- Structure and line details are shown on the enclosed drawings (P-02 and P-03).

### **LINDBERGH SUBSTATION DETAILS**

- The substation facilities require a gravel pad within a fenced area of about 30 by 45 m.
- The substation will consist of a power transformer, a 144 kV circuit breaker and related electrical and communications equipment.
- The substation will include a 30-m high telecommunications tower.
- The substation will be located on or immediately adjacent to the pump station site.

Substation details are shown on drawing P-04.

## Environmental Protection

- Clearing, construction, reclamation, and subsequent activities will all be carried out in accordance with Alberta Environment's *Environmental Protection Guidelines for Electric Transmission Lines* (C7R/IL/95-2). These transmission facilities are of a class not normally requiring an environmental impact assessment report or an approval under *the Environmental Protection and Enhancement Act*.
- ATCO Electric understands from similar projects that the priority concerns of landholders and agencies include avoidance of residences, cultivated fields, and sensitive areas such as watercourses and wildlife habitat. Measures will be taken to address environmental management concerns, including timing of construction.
- ATCO Electric will address these and other identified concerns with the affected parties, and will apply to the appropriate agencies for any additional approvals or permits as required.

## Noise and Traffic

- Any significant noise or traffic is generally limited to the initial construction period. Construction traffic would include trucks and heavy equipment for material and equipment delivery, equipment installation and clearing, and lighter equipment and vehicles for crew access and daily activities (several vehicles daily).
- During long-term operation, facilities require occasional light traffic and activity (weekly at substations and annually for lines) for routine inspection and maintenance.
- During continuous operations, transmission lines normally would not be audible away from the right-of-way and substation equipment would not be audible beyond a few hundred metres away. No appreciable noise increase relative to adjacent land use and activities is anticipated.



A typical substation at a pipeline pump station.

**Note:** Timing, layout and other details may vary slightly with final plans.

On direction from AESO, ATCO Electric must apply to the AUC for approval to build and operate transmission facilities. If you have any questions regarding the process for applications to the AUC, please contact the **AUC at 780-427-4903**, or e-mail [Info@auc.ab.ca](mailto:Info@auc.ab.ca). Enquiries about the need for the facilities can be directed to AESO at 1-888-866-2959, or [stakeholder.relations@aeso.ca](mailto:stakeholder.relations@aeso.ca).

ATCO Electric owns and operates the transmission and distribution systems that deliver electricity to customers in northern and east-central Alberta. For Power Emergencies call us at 1-800-668-5506. For General Enquiries about power lines or meters call us at [1-800-668-2248](tel:1-800-668-2248). For questions about hook-ups or your bill, please contact your energy retailer (see the phone number on your bill).

## Study Area

The project is located within the County of St. Paul in an area with a mixture of private farmlands, generally to the south, and forested Crown lands, generally to the north and east. This area has extensive farming-grazing operations, oil and gas operations, power transmission and distribution facilities, and telecommunication towers. The local landscape is generally level to rolling, and has several smaller watercourses and water bodies. Kehewin Lake limits routing options in the northwest, and there are some steeper areas (Moose Hills ) and muskeg limiting options in the in the centre-north part of the study area.

## Route & Site Selection

The Lindbergh substation site was determined by the location of the point of delivery for new customer service. The new Lindbergh substation site will have suitable site conditions (level, well-drained); good access; sufficient space for initial development, incoming lines and substation expansion; and adequate setback from adjacent development and environmentally sensitive areas.

Route options were chosen based on key technical, economic, environmental and land-use criteria:

- Minimize impacts with other land uses, especially residences, built-up areas, highways, active farming/grazing, oil and gas operations and communication facilities.
- Follow existing road allowances or property boundaries wherever possible, for access and to avoid impacts to agriculture.
- Keep routes as straight as possible to reduce line length and avoid more-costly corner structures.
- Avoid environmentally sensitive areas such as watercourses, wet or steep areas, wildlife habitat and other sensitive areas such as designated historical sites.

The final route is ultimately based on a balance of the different factors and may not necessarily satisfy all of the above criteria.

## Route Options

Based on assessment of the key routing criteria, several preliminary route options have been identified, as shown on the attached maps. Other route options may be considered if identified through stakeholder consultations.

**Only one route will be required.** The final route, subject to AUC approval, may be a combination of different options, and may include entirely new options identified during consultations with affected parties.

## Route Option Details

Route options for this project are shown on the enclosed drawing P-05. Route details are described using "Node" identifiers (e.g., "N1") as reference points to distinguish the route options on the preliminary route mosaic and the route descriptions that follow.

**North Option:** (N1 or NC1→N8→N20→N23→N29→S29)

From "tap-point" N1 or NC1, goes **east/south** for 4.8 to 5.6 km along quarter-section boundaries to N8; **east** for 12.4 km along quarter lines (with some cut lines and occasional access roads) to N20; **north** for 2.4 km along a partially developed road allowance to N23; **east** for 6.4 km along Tp. Rd. 582; then **south** along Rge. Rd. 50 for 1.2 km to the proposed substation site. Total length is about 28 km, with about 70% along Crown land and about 30% along private property.

**North Central Option:** (N1 or NC1→N8→C8→C15→N15→C22→C29→S29)

From tap-point N1 or NC1, goes **east/south** following the north option to N8; **south** 0.8 km, **east** 6.4 km and **north** 0.8 km, mainly along undeveloped road allowances, to C15 to rejoin the north option; **east** for 6.4 km along quarter lines (with some cut lines) to N20; **north** for 1.6 km along a partially developed road allowance to C22; **east** for 6.4 km along quarter-section boundaries to C29; then **south** for about 0.5 km to the proposed substation site. Total length is about 28 km, with about 65% along Crown land and about 35% along private property.

**South Option:** (C1, SC1 or S1→S15→C15→S20→S27→S29)

From "tap-point" C1, SC1 or S1, goes **eastward** for 2.4 to 3.2 km along Highway 28 (C1-C5) or along mainly quarter/section lines to S5; **east** for 7.2 km along quarter lines to S15; **north** for 0.8 km along an undeveloped road allowance to C15; **east** for 6.4 km along mainly undeveloped road allowances to S20; **east** along Tp. Rd. 580 for 6.4 km; then **north** 2.4 km along Rge. Rd. 50 to the proposed substation site. Total length is about 26 km, with about 40% along Crown land and about 60% along private property.

**Connecting Routes:** (S13→C13→N13; S25→C25; C27→N27)

Several north-south road allowances are included as route options that may connect the main routes described above.

**General Comparison:**

The north and north central options are similar. The south route may be a bit shorter and would follow some existing power distribution lines, but would have more private land and more residences along the route.

## Definition of Terms

**Transmission Line:** Transmission lines (69 kilovolts or more) are higher voltage and have the ability to transmit power over a longer distance to local substations where the distribution lines (25 kilovolts and lower) deliver power to homes, farms and businesses. Transmission lines are like major highways for longer distance travel, whereas distribution lines are comparable to secondary roads and local streets.

**144 kilovolt (144 kV):** A 144 kilovolt line is a mid to higher capacity type of line, usually transmitting power within regions and to larger industrial loads.

**Substation:** A fenced enclosure containing equipment such as transformers that connect the transmission lines to the distribution system. Substations are also designed to operate and protect the electric system similar to in-home breaker units but are a much more sophisticated, larger scale version.

**Study Area:** The area in which we are examining both the opportunities for routing such as existing power lines, roads, high ground, etc., and the key constraints such as residences, sensitive environmental or cultural features, conflicting developments, etc.

**Route or Route Option:** A possible location for the proposed transmission line and right of way, selected to try to meet the technical, economic, environmental and land use criteria. The route selection process also involves obtaining essential feedback from agencies and landholders toward ensuring we minimize environmental or land use impacts. Preliminary routes require further refinement and may be rejected, or may shift by several hundred metres depending on information gathered through further examination, surveys and the feedback from landholders and interested parties. In the final analysis, only one new line is needed along an acceptable route.

**Right of Way:** An area that is cleared of trees, brush, debris or other obstacles to allow access for construction and ongoing maintenance and operation of the transmission line. Right of way also means the legal rights to use the land, normally obtained by a power line agreement or easement.

**Alberta Utilities Commission (AUC):** The AUC is an independent, quasi-judicial agency of the Government of Alberta. Its mission is to ensure that the delivery of Alberta's utility services take place in a manner that is fair, responsible, and in the public interest. The AUC ensures that electric facilities are built, operated, and decommissioned in an efficient and environmentally responsible way. All new transmission facilities require the approval of the AUC. The AUC replaced the Alberta Energy and Utilities Board (EUB) on January 1, 2008.

**Alberta Electric System Operator (AESO):** A corporation established under provincial law, the AESO acts as the independent system operator, directing the reliable and economic operation of Alberta's interconnected electric system. AESO plans the transmission development in Alberta by identifying present and future needs, and contracts with transmission facility owners such as ATCO Electric and AltaLink to provide the needed transmission services and facilities. AESO is independent of any industry affiliations and owns no transmission assets.

**ATCO Electric:** ATCO Electric Ltd. builds, operates and maintains more than 68,600 kilometres of transmission and distribution power lines in northern and east-central Alberta. With a service area covering almost two-thirds of the province, ATCO Electric provides safe, reliable delivery of electricity to Alberta homes, farms, and businesses. ATCO Electric also reads the electricity meters and provides consumption information to the retailer, which passes these charges on to their customers. ATCO Electric's costs are regulated by the Alberta Utilities Commission.

## TRANSMISSION LINES ON OR NEAR YOUR PROPERTY

Albertans as a whole use more power every year. Transmission lines are required to transmit bulk power from generating sources to the distribution systems which serve homes, farms, businesses and industry. Transmission lines are designed and built to carry bulk electricity safely, reliably and economically over long distances. They are the lifeline of growth, development and prosperity in Alberta.

The Alberta Interconnected Electric System consists of over 21,000 kilometres of transmission lines and 530 substations, connecting more than 300 generating units across the province. Electricity flows over the transmission system from generating stations to supply customers around the province.<sup>1</sup>

If you are a landowner or leaseholder\* faced with the possibility of having a transmission line built on or near your property, you probably have some questions or concerns. These information sheets provide facts and answers to the questions most frequently asked about transmission lines. ATCO Electric encourages you to become involved in the process for selecting new transmission line routes.

*\*Wherever the word "landowner" is used throughout these information sheets, "leaseholders" and others with an interest in land are also implied. The exception to this is in the Compensation section.*

### FOR MORE INFORMATION

If you need more information, please contact one of our planning staff by calling toll-free 1-866-600-0022, or by writing to:

**ATCO Electric**  
**Engineering Department**  
**Box 2426**  
**Edmonton, Alberta T5J 2V6**

Or, you may wish to contact the Alberta Utilities Commission for a list of relevant publications, e.g.,

- *AUC Information No. 2, Having Your Say at an AUC Hearing*

Available from:

**Alberta Utilities Commission**  
4th Floor, 425 – 1 Street SW  
Calgary, Alberta, T2P 3L8  
**Phone: (403) 592-8845 or (780) 427-9362**  
E-mail: [Info@auc.ab.ca](mailto:Info@auc.ab.ca)  
[www.auc.ab.ca](http://www.auc.ab.ca)

<sup>1</sup> Based on information from Alberta Electric System Operator, *Your Guide to Transmission in Alberta*, December 2007.

**ROUTE SELECTION AND PLANNING**

If your property is situated in the general area between existing or proposed power substation locations, there is the possibility that a transmission line may be routed on or near your property.

ATCO Electric carries out detailed studies to identify route alternatives that will have the least impact on landowners, but it is impossible to avoid everyone's property. The lines have to be built somewhere, and there are many factors to be considered.

The final decision on the specific location of a proposed transmission line is made by the Alberta Utilities Commission.

**How are potential routes for a transmission line decided?**

ATCO Electric's planners carefully gather and study the best available information about the area between substation locations, to determine possible route alternatives. Engineers, surveyors, and construction personnel assist with these studies.

They get their information from maps and aerial photographs, site investigations, cost and technical studies, landowners, local governments and planning bodies, as well as various departments of the provincial and federal governments.

Alternative routes are selected to avoid, wherever possible, any problems or conflicts identified by the studies.

**What factors does ATCO Electric consider when selecting potential routes for a transmission line?**

Generally, our planners select routes that meet cost and technical criteria, while creating the least disruption to people, agriculture, industry and the environment.

Factors to consider could be:

- geographical features (lakes, rough terrain)
- cultivated land
- residential property and built-up areas
- other power lines
- pipelines and related facilities
- highways
- airports
- parks and environmentally sensitive areas

The nature and significance of route constraints vary for each project. Planners have to consider all known factors and constraints, then evaluate them to determine the most suitable route alternatives.

**LANDOWNER PARTICIPATION**

When planning new power facilities, ATCO Electric encourages landowners to participate, as early as possible, in the process of selecting a route for a transmission line. If it looks like a transmission line may be routed on or near your property, we want you to tell us how you think the proposed line will affect you. We will make every reasonable effort to satisfy your concerns.

**How will I know if a proposed transmission line route is on or near my property?**

Once some possible routes have been identified, ATCO Electric planners will send information to all landowners who have property within about 0.8 km (one-half mile) of any of these route possibilities. This does not always apply to land within incorporated villages, towns or cities, where we would give notice of the project through advertisements in the local newspaper.

**Who can I talk to about my concerns?**

The name and phone number of the project planner along with details about the project are included in an information package which you should receive from ATCO Electric early in the planning process. We encourage you to call the toll-free number during business hours to let us know about your concerns, or to get more information.

In addition, ATCO Electric may schedule a public open house on the project. If so, the time and place will be announced in your information package and through advertisements in your local newspaper. Open houses are usually held in a local community hall or similar facility.

Remember, the open house is being held to get **your** views on the route alternatives being considered. At this stage, ATCO Electric has not necessarily decided on a preferred route; all of the alternatives shown are still considered viable options.

ATCO Electric's planners, transmission engineers, land agents and service staff will be available to talk to you about your concerns on a one-to-one basis. This is your chance to spend as much time as you need to discuss the project and your specific concerns with the people responsible for routing and designing the transmission line. We record each participant's comments and concerns, to help us determine exactly where specific features are located that we should avoid.

The open house gives you, the individual landowner, the chance to voice your specific concerns about how the proposed line would affect your property.

**Formal public meeting or informal open house?**

A formal public meeting usually does not give every landowner an opportunity to bring all of his or her individual concerns to the planners' attention. For this reason, we have found a public meeting is usually not as effective as an informal open house.

**Can my concerns be important enough to change the route proposed for a transmission line?**

Your concerns are very important to us. In the past, there have been occasions where landowners have brought up a variety of concerns important enough to convince ATCO Electric's planners and engineers to make changes in the proposed routes.

**LANDOWNER PARTICIPATION (Continued)**

However, it is important for you to make your concerns known to us as soon as possible. If you wait until an Alberta Utilities Commission (AUC) hearing is announced (which may or may not be required) or later, it may be too late for us to make changes that will satisfy your major concerns. **Talk it over with us before it's too late.**

**What happens after the landowner consultation?**

After our representatives have met with potentially affected landowners, our planners evaluate all the factors and select a preferred route (and alternatives, if any). ATCO Electric then applies to the AUC for permission to build and operate the line.

We will notify you after we have submitted our application to the AUC, and we will advise you of the route(s) described in the application.

The list of landowners affected is forwarded to the AUC as part of the formal application. The AUC may also contact landowners along the route, to determine if there are any objections, or to announce the date and place for a public hearing on the transmission line project. If necessary, a hearing date and location may also be advertised in your local newspaper.

If no landowners or other interested parties oppose the project, a hearing may not be called.

**THE REGULATORY PROCESS**

On direction from the Alberta Electric System Operator (the province's independent transmission system administrator), ATCO Electric must apply to the Alberta Utilities Commission (AUC) for permission to construct and operate a transmission line, which is any power line carrying 69,000 volts or more. In the application, we will describe the preferred route and alternatives, if any, and the reasons for our selection.

**Who has the final say on the location of transmission lines and substation sites?**

The AUC must decide whether or not the transmission line is required, and if so, where it is to be located. Before reaching these decisions, the AUC may conduct a public hearing.

Any directly affected group or individual is entitled to participate in the hearings as an intervener, to support or oppose all or any part of the company's proposal. If a hearing is not required, anyone with an interest in the project can make their views known by contacting the AUC directly.

Once the AUC has considered the information presented by all parties, it will announce its decision. And once the decision has been made, it is normally too late to make changes to the transmission line route. The simplest and most effective way of having your concerns recognized and considered is to make them known to ATCO Electric's route planners as early as possible.

The AUC does not make a decision on matters of land compensation. These issues are dealt with by the Surface Rights Board.

**TRANSMISSION LINE CONSTRUCTION**

Construction activities for a new transmission line include: surveying, preparing the right-of-way, installing the poles or towers, and stringing the conductor wires. Surveying can occur before approvals are granted by the Alberta Utilities Commission (AUC). The other activities occur only after the AUC has issued its approvals.

Before construction begins, ATCO Electric assigns a representative to contact landowners along the route and inform them of our schedule. Our representative serves as a liaison between ATCO Electric and you, ensuring that your concerns are respected before, during and after construction.

Preparing the right-of-way may require selective clearing or removal of trees, according to safe clearance standards. The actual width of the cleared right-of-way will depend on the type of transmission structure and the height of trees nearby. Our liaison representative can explain the right-of-way width required on your property.

In some cases, we may have to temporarily remove a fence or gate, or relocate granaries or other structures. Temporary fences will be installed, where necessary, to make sure your livestock is contained. We may have to construct temporary or permanent roads for access to the right-of-way, sometimes on property not crossed by transmission lines, especially in steep terrain.

Before we put up the transmission poles or towers, foundation holes are drilled and, in the case of towers, the footings may be embedded in reinforced concrete. The structures are assembled, then raised and set into place. In the final stage of construction, trailers carrying large reels of wire are brought in, and the wire is pulled from the reels and strung onto the towers or poles.

**How will the right-of-way look after construction is completed?**

All construction debris is removed from the right-of-way, either before our contractors leave the area or, in the case of winter construction, as soon as ground conditions permit. All fences removed or relocated will be restored to the condition they were in before construction began. Brushing debris is normally burned on site.

When clearing treed areas, we do not grub roots or break up new ground. You may wish to do this work yourself if you want to cultivate the newly cleared area. We will, however, seed the right-of-way to compatible grasses if you request this. We will make every effort to restore, as near as practicable, the work site to its original condition.

**After construction, will ATCO Electric need access to the right-of-way?**

Access rights are granted in the power line easement or agreement. By law ATCO Electric must inspect the line, either on the ground or from the air, at regular intervals, usually yearly. Our crews may need access to inspect or repair the line, or to control hazardous vegetation. You will be paid fair compensation for damage to crops, land or fences.

Vegetation must be managed to provide for the safe operation of the line. ATCO Electric tries to keep the right-of-way covered with grass or other low-growing plants, to allow access and to protect the soil. Vegetation is controlled chemically by spraying herbicides (such as Garlon 4 or Tordon 101), or mechanically by trimming, slashing or mowing.

**TRANSMISSION LINES AND FARMING**

When planning new power facilities, ATCO Electric tries to avoid placing transmission lines diagonally across cropland. We make every effort to position transmission structures where they will have the least possible impact on farming operations.

Single poles can usually be located on road allowances, thereby avoiding private land. However, if there are too many homes or other restrictions, we may have to place the poles along quarter lines or section lines - usually offset 1 metre from the property boundary - or across cultivated land. Transmission lines built on the larger two-pole or steel lattice-type structures are usually located along quarter lines or section lines. For all transmission lines on private property, we pay compensation for the inconvenience of farming around structures, as explained in the information on Compensation.

In some cases, such as line deflections, we may have to approach the landowner for an easement for a supporting guy wire and anchor, or even for additional poles.

Double-pole "H-frame" structures and steel towers cannot be safely located on opened road allowances. As a result, we have to position these structures on adjacent properties. ATCO Electric will try to place them where the least amount of cropland will be affected, such as on pastureland.

**Will transmission line construction interfere with my farming operations?**

Depending on the time of year construction takes place, there may be some temporary interference with some farm activity. We will make every reasonable effort to co-ordinate our construction activities with your farming operations to minimize any inconvenience to you.

**Will I still be able to farm around and under the line, once it is completed?**

You will still be able to farm around and under it, subject to certain restriction due to the exact location of the poles or towers.

Normally, you should be able to operate your farm equipment under the wires without any concern. For your own safety, equipment should be no higher than 4.3 metres (14 feet), as specified by provincial safety regulations. Most farm equipment meets this height restriction, but if you have any doubts about your equipment or loads, please contact us.

**Do transmission lines affect production by honey bees?**

Honey production may be affected if hives are located too close to a transmission line. Bees are sensitive to both the low-level electric fields around the hives and the very low-level induced charge that may develop on a hive's supers.

Shielding hives with a grounded wire plate or moving them further away from the transmission lines will eliminate these effects, and the bees will carry on their normal level of honey production.

**ELECTRICAL EFFECTS**

Occasionally landowners express concern about the electrical effects of transmission lines. Unfortunately, misconceptions can cause unnecessary concerns for many people. The following questions cover the most common concerns people have about electrical effects.

**Should I worry about getting an electrical shock from a transmission line?**

You will not get a harmful shock from a transmission line **unless** you or your equipment comes into contact with or is very close to the actual conductor wires.

Occasionally you might experience a slightly annoying but harmless electrical sensation if you touch an ungrounded metal object near a high voltage transmission line. This sensation is similar to what you may have experienced in your own home, after walking across a carpet and touching a door knob. Typical ungrounded objects include wire fences with dry wood posts, large vehicles with old rubber tires, and metal buildings.

It should be remembered that long lengths of ungrounded pipe parallel to and near a power line can build up an induced hazardous electrical charge.

To eliminate these mild shocks, make sure metal objects and fences are properly grounded. During construction of a new line, ATCO Electric will do this. You can always contact us about proper grounding methods.

**Is it safe to drive or park a car or truck near a transmission line?**

Most vehicles today are naturally grounded, because their tires are made of semiconducting carbon black. A mild electric charge can build up on a vehicle with old rubber tires because they generally do not conduct electric currents. Such induced charges are annoying, but harmless, regardless of the size of the vehicle or the length of time it is left under a line.

If your vehicle tends to develop a mild electric charge, it can be grounded by attaching a chain that is long enough to touch the ground.

There have been no reported cases of fires caused by static sparks induced by transmission lines. However, the refueling of vehicles under lines could pose a problem in the unlikely event that certain conditions (including hot, still weather and a completely insulated vehicle) existed all at the same time. As a precaution, never refuel your vehicles directly under a transmission line. If you have no choice in the matter, use a plastic gasoline container.

**Will a transmission line endanger my property in a lightning storm?**

Transmission lines do not attract distant lightning. When a storm is directly overhead, they may actually draw lightning away from nearby trees, buildings, animals and people. Since lightning is attracted to the highest available object, in a rural area the power lines are often struck. However, because these structures are well grounded, the potential danger is far less than if it were to strike a tree or building.

**ELECTRICAL EFFECTS (Continued)****Will transmission lines affect my radio and TV reception?**

Transmission lines in Alberta are alternating current (AC) lines, which normally do not affect radio or TV reception.

However, under certain circumstances, there may be some static interference which may affect the reception of weak signals from far away radio and TV stations, particularly if poor quality receiving equipment is used.

ATCO Electric will make every reasonable effort to correct any interference caused by its facilities. Sometimes it may be a matter as simple as tightening a nut or bolt.

However, if you have poor reception now without the presence of a transmission line, the company cannot improve your reception after a transmission line is built. If you like, ATCO Electric, in consultation with the federal department for communications (Industry Canada), will monitor your radio and TV reception before and after energizing a new power line. Industry Canada stipulates that within six months of the line being energized, radio noise levels are to be measured, and that they must fall within set limits.

**Do transmission lines create noise?**

Transmission lines are very quiet in good weather. You will hardly notice any sound they make during normal operation.

During rain or heavy fog, you may hear a low level crackling or buzzing sound at the edge of the right-of-way. Even so, the noise is less than the sound of a light breeze.

**A WORD ABOUT SAFETY.**

You should always be careful and follow common sense rules of safety when near any type of power line.

Some of the hazards you should avoid in the home, around the farm and on the job are illustrated in a variety of safety booklets and materials, available at no charge by contacting your local electricity provider.

Look for safety tips on our web site:  
[www.atcoelectric.com](http://www.atcoelectric.com)

**ELECTRIC AND MAGNETIC FIELDS****What is EMF?**

EMF stands for "electric and magnetic fields" which are fields of force caused by electric voltage and current.

Since the 1970s, scientists have been researching the potential health effects of EMF, particularly the 60-hertz, alternating current type that surrounds all electrical equipment, from high voltage power lines and lower voltage distribution lines to household wiring and appliances. In fact, EMF surrounds all things electrical.

**Should I be concerned?**

Concerns are mainly about chronic, long-term exposure rather than occasional exposure such as harvesting crops under a power line.

Research has been focusing on magnetic fields, where some studies have suggested a slightly increased risk of certain illnesses associated with people who may be exposed to higher EMF levels. However, the associations are weak, and other studies indicate no association at all. And none of the research has found a cause-and-effect relationship.

**What do we know about EMF?**

We do know that field strengths decrease quickly with distance. Magnetic fields are commonly measured in units of milligauss (mG). Magnetic field strengths might be up to 60 mG directly beneath a typical ATCO Electric 240 kV transmission line, but would drop to about 0.5 mG at a distance of 70 metres (230 feet) to 100 metres (330 feet) away.

For a typical 144 kV transmission line, magnetic field strengths might be up to 25 mG directly beneath the line, dropping to about 0.5 mG at a distance of about 60 metres (200 feet) away. The average magnetic field in most homes is 1 mG or less.

**Are there EMF limits or guidelines?**

Health Canada does not consider guidelines necessary because scientific evidence is not strong enough to conclude that typical exposures cause health problems.

**What is ATCO Electric doing about EMF?**

ATCO Electric is taking steps to act responsibly. We continue to build and operate our transmission facilities within accepted engineering and safety standards. We try to route new facilities away from built-up areas.

We are also committed to monitoring what is happening in the research, and sharing information with customers, employees, government officials or any other interested people or organizations on matters concerning EMF.

Further information and links can be found on the Canadian Electricity Association web site: [www.canelect.ca](http://www.canelect.ca).

**COMPENSATION**

For new transmission lines ATCO Electric negotiates compensation settlements that are fair and reasonable to landowners and in accordance with surface rights legislation.

Compensation negotiations usually take place after the Alberta Utilities Commission (AUC) issues the company a permit to construct the transmission line along a designated route.

Our land agent will negotiate compensation settlements with each landowner or leaseholder from whom rights must be obtained. ATCO Electric does not purchase the land outright for a right-of-way, but simply acquires rights to use it for a specific purpose.

**How much compensation will I be offered?**

The amount of compensation depends on how, and to what extent, the transmission line will affect you and your property. A number of factors are considered, and not all may apply to your case. Compensation is paid for each of the following, if required:

1. an entry fee payment (required under surface rights legislation) based on \$500 per acre of land required. For each parcel of land, the minimum payment is \$250 and the maximum is \$5000;
2. an easement or agreement for the transmission line right-of-way, based on the amount of land within the right-of-way and the fair market value of the land (or a portion of the value if the rights are only temporary);
3. an agreement allowing for the removal of trees and brush adjacent to the right-of-way;
4. a temporary working-space agreement allowing for additional area outside the right-of-way of the transmission line during the construction period.

In addition, you may receive payment for general disturbance such as costs for time, and other inconveniences related to the installation of the power line.

**When do I get my compensation?**

Whenever possible, ATCO Electric will pay the initial lump-sum compensation before construction begins.

Where the transmission structures are to be located on agricultural land, the negotiated settlements will also include annual compensation payments for inconvenience and crop loss. You may review these annual payments with the company at five-year intervals, at which time they may be adjusted to reflect changes in farming costs and crop prices. Our land agent will explain these procedures to you in more detail.

**Does the compensation payment include reimbursement for construction damage?**

Claims for damage arising from construction activities are settled separately from the main compensation agreement after construction is completed.

**What can I do if I am not satisfied with the company's final offer?**

If you are not happy with the company's offer or settlement of damage claims, you are entitled to ask that the amount of compensation be determined by the Surface Rights Board.

DATE: \_\_\_\_\_

FAX OR MAIL TO: Deb Nelson, ATCO Electric, Fax No. 780-420-8017

PROJECT: Lindbergh Substation and 144 kV Transmission Line

Do you have any facilities or developments in the area that may be affected by this project?

No.       Yes, and they are as follows:

\_\_\_\_\_  
\_\_\_\_\_

Do you have any concerns about the project?

No.       Yes, and they are as follows:

\_\_\_\_\_  
\_\_\_\_\_

Is there anyone else we should be contacting about this project?

No.       Yes, and they are as follows:

\_\_\_\_\_  
\_\_\_\_\_

Do you have any other comments or questions?

No.       Yes, and they are as follows:

\_\_\_\_\_  
\_\_\_\_\_

If we have any errors in your name and address, please provide corrections.

\_\_\_\_\_  
\_\_\_\_\_

Sent By: Name \_\_\_\_\_

Agency/Company Name \_\_\_\_\_

Address \_\_\_\_\_

Phone No.: \_\_\_\_\_ Fax No.: \_\_\_\_\_

E-mail/Other: \_\_\_\_\_