



CASE STUDIES

SUPPORTING LINE TRADE DEVELOPMENT: POST-JOURNEY POWERLINE WORKERS
REFRESHER TRAINING PROJECT

Canada

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About Electricity Human Resources Canada (EHRC)

Electricity Human Resources Canada (EHRC) is a not-for-profit organization helping to keep the lights on in Canada by enabling a world-class workforce for the entire electricity industry. EHRC helps to build a better workforce by strengthening the ability of the Canadian electricity industry to meet current and future needs for a highly skilled, safety-focused, diverse and productive workforce.

For more information visit www.ElectricityHR.ca.

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Introduction

About the Project

As a partnership between business, labour, education and government, the Electricity Human Resources Canada (EHRC) is the hub for the development and execution of research to address the need for sector-wide recruitment and retention to ensure that the future of the Canadian electricity sector remains bright. The EHRC, governed by a highly experienced industry-represented Board of Directors and dedicated staff, has been focused on developing tools, strategies and initiatives to ensure a safe, competent and competitive electrical workforce since 2005.

The primary purpose of the *Supporting Line Trade Development Project (LTD Project)* is to support and enhance the work of the line trade as it moves through a period of extensive technological change and growth in electrical grid operations. As one of the most critical operating roles in our industry, the work of Powerline Technicians (PLTs) is crucial to the safe and timely provision of services to customers as well as the construction and maintenance of power lines that support operational efficiency of the power grid. Effective training directly impacts the Powerline Technicians' (PLTs) abilities to do their jobs safely and to successfully learn new technologies.

As a key component of the *LTD Project*, the EHRC developed a common needs/gap diagnostic in support of journey person refresher training through extensive primary and secondary research and analysis. This project will provide necessary training supports to a vast number of PLTs in Canada. By looking at effective practices across the industry, trainers will be better equipped to deliver this training and the quality of training will improve, be more consistent, and better support labour mobility of the powerline trade and trades associated with powerline work.

About the Case Studies

The following Case Studies have been developed as part of the *Post-Journey Powerline Workers Refresher Training* component of the *LTD Project* to provide the industry with current examples of effective approaches for post-journey training for the line trade across the country. These profiles are not intended to define 'best practices' for training, but rather provide illustrative and practical examples of various approaches to post-journey training that are proving effective within the industry. These case studies will provide training personnel with a foundation upon which to gain further knowledge and direction on various approaches to post-journey refresher training that can be implemented within their own organizations.

To develop the Case Studies, training personnel from participating organizations were consulted to gather detailed information about their approaches to post-journey refresher training for the line trade, including: the program development process; challenges encountered and overcome in program development and delivery; major benefits of the program; and advice for others looking to develop a post-journey refresher training program in their own organizations.

We encourage readers to use the Case Studies presented as a resource document on the road to developing a post-journey refresher training program that works for their own organization. The information presented in these Case Studies is meant to shed light on existing effective programs and to spark discussions among organizations in regards to what can be done to meet their individual and unique post-journey refresher training needs.

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Fortis Alberta

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Case Study 1: ATCO Electric – Journeymen Excellence Program

About ATCO Electric

As part of the ATCO Group of Companies, ATCO Electric develops regulated distribution and transmission projects and plays a key role in the development of Alberta's industrial sector. With approximately 2,450 employees across two divisions (Capital Projects and Operations), ATCO Electric builds, operates and maintains a safe, reliable system of transmission and distribution lines, delivering power to homes, farms and businesses, in cities, towns and Aboriginal communities – 245 communities in all. ATCO Electric also serves Canada's North through 3 subsidiary companies

PROGRAM SNAPSHOT

Number of PLTs: 450

Frequency of Program: Annual

Trainees: Complete PLT workforce

Program Developed: In-house

Method: 75% practical, 25% theory

About the Journeymen Excellence Program

In addition to a lengthy history of delivering ongoing journeyperson training on a requested, as-needed basis, ATCO Electric developed the Journeymen Excellence Program in 2009 to capture key topics common to all PLTs to deliver to the entire PLT workforce. Through offering the Journeymen Excellence Program, ATCO Electric is able to foster consistency in training across common topic areas to all PLTs. ATCO Electric has two full-time training specialists that are responsible for managing training (in terms of developing a needs analysis, designing training and ensuring that training occurs) as well as upwards of 20 Subject Matter Experts (SMEs) directly from the field that act as trainers within the training department.

How did the Journeymen Excellence Training Program Begin?

ATCO Electric has a long history of developing and delivering journeyperson training programs and modules on an as-needed basis. However, in 2009, the organization developed the Journeymen Excellence Program in an effort to address, on a yearly basis, the training needs and requests that impact all ATCO Electric PLTs. Such an approach fosters consistency in training delivery by ensuring that all PLTs receive training on techniques, procedures and protocols that impact their daily work. Training needs are identified on a yearly basis; the training needs dictate whether there is a clear demand to bring in PLTs for training for any given year. As a result of needs identification, the Journeymen Excellence Training Program was offered within two (2) of the last three (3) years.

How Long is the Program and When is it Delivered?

The length of the Journeymen Excellence Program is dependent upon the training topics and typically ranges in length from three to five (3-5) days. Training is delivered from late-January to April and is attended by all PLTs. Training is completed in groups of 25 PLTs led by up to three (3) SME trainers. For practical training exercises, the PLTs are divided into groups of six to eight (6-8) and are directed and supervised by a SME trainer.

How is the Training Content Developed?

Training needs for the Journeymen Excellence Program are analyzed on a yearly basis through a survey of supervisors and management. Once topic areas have been identified, the design and the development of the program commences in-house. Existing materials for a given topic area are often already in-place; any

new content that is required is typically designed internally through the assistance of SMEs from the field and a full-time Training Specialist. In certain circumstances (if there is an existing program on a particular topic that is available), they will utilize an external vendor or training provider to obtain course material.

Who Takes Part in the Training?

The Journeymen Excellence Program is attended by all ATCO Electric PLTs, inclusive of those PLTs who have completed their third (3rd) year of apprenticeship. Each training session is delivered at the centralized, ATCO Electric training facility.

Who Trains?

Training is facilitated by full-time Training Specialists and SME trainers who are pulled from the field to conduct training on an as-needed basis. All SMEs have a strong technical background (as PLTs) and a passion for passing on their knowledge to others. ATCO Electric supplements each SME's technical knowledge with a train-the-trainer course to provide them with the fundamentals of being a trainer and teaching adult learners. The time that each SME dedicates to training can vary from one to six (1-6) weeks. ATCO Electric has upwards of 20 PLTs who are currently acting as SMEs within the Journeymen Excellence Program as well as other journeyperson refresher courses offered on an ongoing basis.

What are the Challenges to Program Development and Delivery?

ATCO Electric identified the following challenges to the development and delivery of the Journeymen Excellence Program:

- **Geography:** With the PLT workforce being spread across the province of Alberta, it can be a challenge to bring workers to a central location for training.
- **Time of Year:** Training takes place from late-January to April, a time of the year when weather can impede travel for training.
- **Workload in the Field:** With such a high workload in the field, it can be a challenge to release workers for training when productivity is compromised.
- **Availability of SMEs:** ATCO Electric utilizes SMEs from the field to deliver their training. There are only so many SMEs to go around, and their expertise is also required in the field.
- **Agreement on the Need in the Field:** While the Journeymen Excellence Program is designed to address training needs that impact all PLTs, it can be a challenge to identify and agree upon the most pressing needs that will be addressed in the yearly program.

How are Challenges to Program Development and Delivery Overcome?

In recognition of the challenges associated with program development and delivery, ATCO Electric has implemented the following mitigation strategies to help address these challenges and issues:

- **Agreement in the Field:** To assist with agreement on the yearly training topics and to determine the feasibility of the Journeymen Excellence Program on an annual basis, ATCO Electric has recently formed a PLT/Apprenticeship Steering Team with representation from the organization as a whole to guide the training process.
- **Availability of SMEs:** While the availability of SMEs will always be a challenge, the hiring of more permanent training staff capable of instructing PLTs has helped with this issue.

What are the Organizational Benefits to Training?

ATCO Electric recognizes numerous benefits associated with the Journeymen Excellence Program, which include:

- Consistency in training
- Easier to organize and deliver one program rather than meeting multiple requests for the same topic
- Planning training based on agreed areas where a performance gap exists or could exist in the future
- Interaction between crews from various parts of the province brought to one location
- Availability of equipment, labs and specialized equipment in one centralized training location
- Ease of booking classrooms/reproducing materials
- Administrative support
- Instructors in one location

How is the Journeymen Excellence Program Evaluated?

According to Kirkpatrick's Learning Evaluation model, training programs can be evaluated across four levels. ATCO Electric evaluates their annual Journeymen Excellence Program through the use of the following approaches:

Level 1: Reaction – How the participants feel about the training that they received

- ATCO Electric utilizes participant feedback forms at the end of each Journeymen Excellence Program session to capture direct commentary from the PLTs in regards to the training program.

Level 2: Learning – Measuring an increase of knowledge among training participants

- At the end of each training session, PLTs are required to complete a written examination to verify their learning. While the examinations are not pass/fail, the results provide the SME trainers and the managers with a perspective on the degree of learning that has occurred as a result of the course. If required, follow-up is conducted to ensure that the key principles of the training have been retained.

A Piece of Advice for Developing a Post-Journey Powerline Worker Refresher Training Program

Develop a management structure that allows for needs to be identified across the company and PLT workforce in order to deliver a concise program that directly meets those needs.

Design an annual program well in advance of the delivery time to have materials ready and Subject Matter Experts (SMEs) and trainers in place that are prepared and capable to deliver the program.

Case Study 2: BC Hydro – Safety & Technical Training Seminars

About BC Hydro

BC Hydro is a crown-owned electrical utility that operates 31 hydroelectric facilities and three thermal generating plants totaling 12,000 megawatts (MW) of installed generating capacity. Their hydroelectric facilities provide over 90 per cent of the total electricity they generate and are located throughout the Peace, Columbia and Coastal regions of B.C. Three thermal generating plants provide the remaining electricity generation. BC Hydro employs approximately 5200 employees; with about 450 being Power Line Technicians (PLTs).

PROGRAM SNAPSHOT

Number of PLTs: 450

Frequency of Program: Annual

Trainees: Complete PLT workforce

Program Developed: In-house

Method: 60% practical, 40% theory

About the Safety Seminars

Since 2000, BC Hydro has been delivering Safety & Technical Training Seminars to their PLT workforce through the Journeymen PLT Training Program, delivered regionally within each district. In 2009/2010, the organization set out to bring a more structured approach to training delivery and launched a centralized training program which brought in PLTs and field managers from various districts together to participate in annual Safety & Technical Training Seminars. With annual delivery, attending a Safety & Technical Training Seminar is an expectation of all BC Hydro PLTs.

How did the Journeymen PLT Training Program Begin?

BC Hydro has been delivering formalized Safety & Technical Training Seminars since 2000, before which time post-journey training was delivered on an as-needed and/or requested basis. The move toward a formalized and scheduled process for Journeyperson PLT training was triggered by a number of factors including technology and procedural changes. This initiative was put in place to ensure that the BC Hydro PLT workforce received consistent training that will ultimately negate the reoccurrence of near-misses and incidents and address advancements in safe work procedures related to BC Hydro work requirements.

How Long is the Program and When is it Delivered?

The typical length of each Seminar is between 2.5 and 3 days (depending upon the travel requirements for participants as well as the topic areas being delivered). During each Seminar, groups of approximately 14 PLTs from various districts throughout the province convene at the new BC Hydro Trades Training Centre, located in Surrey BC, to participate in a combination of classroom (40%) and practical (60%) training. Safety & Technical Training Seminars are delivered annually from September to June.

How is the Training Content Developed?

The training content changes on a yearly basis and is a direct reflection of needs assessments conducted annually by BC Hydro through consultations with supervisors, managers and field workers to discuss skills gaps, training needs and incidents/near misses that require addressing during the upcoming Safety & Technical Training Seminars. Once common needs and skills gaps are identified, training content is developed by internal Instructional Design Technologists, Trades Training Instructors, Safety Engineers and Subject Matter Experts (SMEs).

Once a training program has been developed, the course developers conduct an alpha-teach and Train the Trainer session to allow the Trades Training Instructors to experience the course, familiarize themselves with the content and to ask questions about content and delivery prior to teaching the course. This 'train-the-trainer' approach helps to foster consistency in program delivery among all Trades Training Instructors who will be teaching the Seminars.

Who Takes Part in the Training?

The Seminars are mandatory for all BC Hydro PLTs and field managers. Participation in the Seminars is tracked by BC Hydro to ensure that any PLTs who (for any reason) are not in attendance at their assigned Seminar are able to participate in a subsequent session.

Who Trains?

BC Hydro employs Trades Training Instructors who are responsible for the delivery of the Safety & Technical Training Seminars on an annual basis. The Trades Training Instructors are highly-experienced tradespeople who have moved into training positions within the Technical & Trades Training department. All Trades Training Instructors are required to complete a Provincial Instructors Diploma Program that is offered by Vancouver Community College (VCC). This provides them with knowledge of adult learning principles and training skills. BC Hydro also offers a mentoring program among Trades Training Instructors to foster peer-to-peer learning.

What are the Challenges to Program Development and Delivery?

BC Hydro experiences two main challenges to the delivery of the annual Safety & Technical Training Seminars, including:

- **Geography:** In covering such a large geographical area, it can be a challenge to coordinate training sessions to ensure that all PLTs are able to participate in the Seminars.
- **Manpower:** Whenever a PLT is participating in training, there is a loss of manpower in the field. The lights have to stay on, despite the need for training.

How are Challenges to Program Development and Delivery Overcome?

In recognition of their main challenges to the delivery of their annual Safety & Technical Training Seminars, BC Hydro has taken the following approach to mitigate their main issues:

- **Geography:** For the last three (3) years, BC Hydro has moved from a regional (district) to a central delivery approach for their Seminars. Rather than sending Instructors to the districts to complete the training, PLTs from various districts are brought to a central training location in the lower mainland to complete the training. Such an approach lends to consistency in training delivery and also provides PLTs with the opportunity to network with each other and boost morale.

In addition, a centralized training approach helps to increase participation numbers. When PLTs are removed from their districts, the likelihood that they will be pulled out of training to respond to trouble calls or storm damage drops significantly, meaning that more PLTs receive their training when they are scheduled.

- **Manpower:** It has been recognized that regardless of when or where training occurs, there will always be a loss of manpower in the districts when PLTs are removed from the field. However, as an organization, BC Hydro recognizes the importance of the Seminars and makes the required adjustments at a district level to ensure that all PLTs are able to participate in the program.

What are the Organizational Benefits to Training?

One of the main benefits of the annual Safety & Technical Training Seminars is establishing consistency in knowledge and adherence to policies and procedures. By involving all PLTs in the training process, the entire workforce (regardless of their district) is receiving the same message in terms of safe and efficient work practices. In addition, the training provides PLTs with explanations as to 'why' certain policies and procedures have changed and certain technologies and practices have been adopted. Training is also viewed as an opportunity for PLTs to network with their peers from other districts across the province.

How are the Safety Seminars Evaluated?

According to Kirkpatrick's Learning Evaluation model, training programs can be evaluated across four levels. BC Hydro evaluates annual Seminars through the use of the following approaches:

Level 1: Reaction – How the participants feel about the training that they received

- The majority of the evaluation of the Seminars is conducted through gathering commentary and feedback from participants using participant feedback forms immediately following the training that allows the PLTs to rate the training course and provide commentary in regards to the positives and negatives of the program.

Level 2: Learning – Measuring an increase of knowledge among training participants

- PLTs are required to complete an examination which includes the main take-away items for the seminar. While the examinations are not marked according to pass/fail, the results indicate to the Trades Training Instructors if additional coverage or explanation of a particular topic area is required at the end of the Seminar. The examinations provide the Instructors with a gauge of the learning retention of the participants.

Level 3: Behaviour – Measuring the extent that learning is applied on the job to change worker behaviour/practices

- Conducting behaviour assessments is the level of evaluation that BC Hydro is continually working to improve. Currently, Trades Training Instructors have discussions with managers and field staff to assess behavioural changes as a result of training; however, BC Hydro Technical & Trades Training is in the process of developing a more formalized structure to measure behavioural changes in the field post training.

A Piece of Advice for Developing a Post-Journey Powerline Worker Refresher Training Program

The key to effective program development is ongoing needs assessments. By distributing questionnaires, you can gather information about consistently requested/required training needs and/or knowledge gaps. If a needs assessment informs program development, you are ensuring that the program will meet the needs of the majority of your PLT workforce. Your trainees will be much more engaged if they feel that the training that they are receiving directly addresses a need. It is imperative to remember that needs assessments must be conducted on an ongoing basis to ensure that the program remains current.

Case Study 3: Fortis Alberta – Annual Journeymen Upgrade Program

About Fortis Alberta

Fortis Alberta is an investor-owned electricity utility and wire service provider that serves customers throughout the province of Alberta and employs a workforce of approximately 1200, 275 of which are Power Line Technicians (PLTs).

About The Annual Journeymen Upgrade Program

Post-journey refresher training is a long-standing tradition at Fortis Alberta, with the first program being delivered by the organization in 1984. Since its inception, the program has become a staple of the Fortis Alberta training regime and is accepted by PLTs as a critical component of their careers.

PROGRAM SNAPSHOT

Number of PLTs: 275

Frequency of Program: Annual

Trainees: Complete PLT workforce

Program Developed: In-house

Method: 50% practical, 50% theory

How did the Annual Journeymen Upgrade Program Begin?

Even long-standing programs have a starting point. For Fortis Alberta, the main determining factors for initial program development included: requests from internal stakeholders; incident trends identified by safety personnel; the evolution of new technologies and work practices; and the need to keep abreast of regulations.

How Long is the Program and When is it Delivered?

The Annual Journeymen Upgrade Program ranges in length from two to five (2-5) days depending on program requirements and needs and is delivered throughout the months of January, February and March.

How is the Training Content Developed?

On a yearly basis (typically in the Fall), managers representing various stakeholder groups (inclusive of: Field Operations, Safety, Fleet, Metering, Maintenance, Dispatch) meet to outline training needs and requirements for the upcoming session. Training needs can range from new technologies and work procedures to regulations, incident trends and re-certification requirements. Because training needs are identified on a yearly basis, the topic areas covered within the training program also vary from year to year, helping to ensure that the content remains fresh and relevant.

When identifying training topics for inclusion in the program, the following criteria are assessed by the organization:

- Is the topic a mandatory requirement for the work group as identified by the internal training committee?
- Is the topic a business priority as identified by the sponsor and the applicable managers?
- Is the topic required by the majority of the workgroup (if not, then training can be managed for particular subsets of the work group outside of the Annual Journeymen Upgrade Program)?

Once training needs are identified, the majority of training content is developed by in-house, training department staff. If required, third party vendors may be brought in to supply expertise for a particular topic.

Who Takes Part in the Training?

Throughout the duration of program delivery (i.e., January – March), groups of 14-18 PLTs receive a combination of classroom and hands-on training at the Fortis Alberta training yard (50% theory, 50% practical). Once the training cycle has been completed, all PLTs, apprentices, operations managers and technicians will have completed the program. Participation in the training program is tracked internally within the Fortis Alberta's *Training Partner* software.

Who Trains?

Depending on the topics and available resources, the Annual Journeymen Upgrade Program trainers may include a combination of in-house technical trainers, third-party vendors, safety coordinators and Subject Matter Experts (SMEs) from the field.

What are Challenges to Program Development and Delivery?

When it comes to delivering the Annual Journeyperson Upgrade Program, the following challenges are often faced:

- **Trainers:** Ensuring Subject Matter Experts (SMEs) commit a percentage of their time to the development of course material and preparing for course delivery; ensuring consistency between SMEs if there are hand-offs during course delivery.
- **Program Development:** Ensuring that documents are created/updated and published in time for the training.
- **Logistics:** Scheduling participants to meet the program requirements and maintain work requirements in their districts can be a significant challenge. With training being centrally located, logistics such as travel time, accommodations and work schedules are an additional challenge. Weather is a factor for the delivery of practical training that is completed outdoors in the training yard and weather can also impact attendance rates for travelling participants.
- **Coordination:** Since two training groups run in parallel during each session, it can be a challenge to build a course schedule that allows for groups to rotate through classes without causing overlap or lag time.

How are Challenges to Program Development and Delivery Overcome?

In recognition that challenges will always be encountered in the development and delivery of the Annual Journeymen Upgrade Program, Fortis Alberta utilizes the following strategies to overcome inherent challenges and barriers:

- **Program Development:** Goals are set with timelines for the development of lesson plans, course materials, practical demonstrations, dry-run sessions, printing, equipment and material management and other considerations for program delivery.
- **Program Management:** Specific roles and responsibilities are assigned to manage the program and each course component.
- **Logistics:** The organization has developed a template using program management principles for managing all of the logistics associated with the development and delivery of courses.
- **Coordination:** A Technical Training Specialist within the training department is designated as a Program Manager to work with the various stakeholder groups to define requirements, identify resources to develop and deliver the courses, ensure that materials and equipment are arranged for course delivery, develop and manage schedules to meet milestones, support SMEs brought in to assist in program development and delivery, work with administration personnel to ensure that the training is tracked and close off the program appropriately.

What are the Organizational Benefits of the Training?

By delivering the Annual Journeymen Upgrade Program, Fortis Alberta is ensuring that participants meet compliance requirements, are updated on procedures and equipment and are aware of changes in policies and procedures, which promotes safety and efficiency. Having a program delivered on an annual basis to the entire line group also provides a platform to deliver a consistent message for all attendees and line workers across the company. Participation rates prove to be more consistent with a centrally-run program; if the same training was delivered at all local Fortis Alberta offices, the courses would need to be delivered three to four (3-4) times to capture all workers. Having a centrally-run, annual training program promotes efficiency in training delivery.

How is the Annual Journeymen Upgrade Program Evaluated?

According to Kirkpatrick's Learning Evaluation model, training programs can be evaluated across four levels. Fortis Alberta evaluates their Annual Journeymen Upgrade Program using the following approaches:

Level 1: Reaction – How the participants feel about the training that they received

- The majority of the evaluation on the Annual Journeymen Upgrade Program is received through gathering commentary and feedback from participants using feedback forms and questionnaires immediately following the training.

Level 2: Learning – Measuring an increase of knowledge among training participants

- Quizzes and exams are given during the courses to assess the knowledge transfer.

Level 3: Behaviour – Measuring the extent that learning is applied on the job to change worker behaviour/practices

- Managers, safety coordinators and work methods specialists are required to complete site/safety audits throughout the year to evaluate the application of procedures learned through the training program.

Level 4: Results – Measuring the effect on the overall business or working environment

- The safety department analyzes incident trends through ongoing reporting. When a trend related to a recent course or program is detected, they will provide specific feedback to the training department on what trends have surfaced.

A Piece of Advice for Developing a Post-Journey Powerline Worker Refresher Training Program

In order to deliver a program such as this to line staff, the courses need to be relevant to the work these employees do; be technical in nature; and incorporate as much of a hands-on component as possible within the time available.

Case Study 4: Infrastructure Health & Safety Association (IHSA) – Powerline Technician Proficiency Program

About the IHSA

The Infrastructure Health & Safety Association (IHSA) was formed in January 2010 by amalgamating the Construction Safety Association of Ontario (CSAO), the Electrical & Utilities Safety Association of Ontario (E&USA) and the Transportation Health and Safety Association of Ontario (THSAO). The IHSA offers high-risk activity solutions to more than 85,000 member firms and trade unions in Ontario. IHSA's commitment to quality and philosophy of skills development through education is evident in the way that they deliver their 85 unique sector specific educational programs across numerous industries, inclusive of the electrical sector.

PROGRAM SNAPSHOT

Number of PLTs per Session: 6

Trainees: PLTs

Program Length: 3-5 days

Program Developed: Custom

Method: 30% theory, 70% practical

About the Powerline Technician Proficiency Program

The IHSA Powerline Technician Proficiency course is a back-to-basics program that can be used to assist those in the line trade who have been exposed to minimal formal training or as an update for those who have been away from formal training for some time as a refresher training exercise. The program can be customized to meet the unique needs and requests of each client and can include any or all of the following topics, including: interpretation of relevant Regulations and OHSA; job planning and tailboard talk; safe operation of hydraulic aerial equipment; bucket rescue; rigging; care, use and maintenance of rubber protective equipment and live line tools; temporary grounding techniques; underground switching/grounding; underground primary cable review; primary cable splice and terminate; high voltage rubber field exercise; and 3-phase transformer review.

How did the Powerline Proficiency Program Begin?

Since its beginning, the Powerline Proficiency Program has been a very well-received and popular course offering for the IHSA. With both an Overhead and Underground Component, the program can be customized to meet the needs of each client. Many organizations across the province of Ontario deliver the Powerline Proficiency Program as part of their refresher training component, often on a five-year training rotation. The Powerline Proficiency Program is an effective way for smaller organizations and those clients that do not have large internal training departments to offer a high-quality proficiency training program for their PLTs. In fact, some IHSA clients have partnered with neighboring organizations (e.g., 3 PLTs from one organization and 3 from another) to have the Powerline Proficiency Program delivered for their workers.

How Long is the Program and When is it Delivered?

The IHSA offers the Powerline Proficiency Program to clients on an as-needed basis, year round. Because the training content is customizable, the typical length of the program can range from three to five (3-5) days; however, clients have requested a 2-week training program which is also achievable.

How is the Training Content Developed?

Each Powerline Technician Proficiency Program offers customized training development and delivery for each client to ensure that organizational needs are met. Course content and practical exercises are developed after a needs analysis is conducted to confirm training needs and wants. Based on the defined course requirements, the appropriate trainer(s) will be assigned to deliver the program. In instances where technical skills are combined with other safety and trades skills (such as defensive driving or chain-saw training), various trainers may be involved in course delivery according to their areas of expertise.

Who Takes Part in the Training?

The Powerline Technician Proficiency Program is often utilized by organizations as an update for PLTs to refresh their skills. Many organizations opt to deliver the program to PLTs five years post-apprenticeship and on a five-year training cycle. Due to the hands-on nature of the program, six (6) PLTs participate in each training session under the guidance of an IHSA trainer.

Who Trains?

The IHSA currently employs 12 journeyperson PLTs as trainers. Each trainer has a minimum of 10 years journeyperson experience in the field. All trainers are passionate individuals who want to impart their knowledge and better the trade through the development and delivery of high-quality training. All trainers are Registered Professional Trainers and the IHSA also has their own in-house principles for effective training programs. All IHSA trainers (21 in total; 12 of whom are PLTs, with the remaining being SMEs in fields such as Transportation and Forestry), meet four (4) times a year to discuss the training delivery. In addition, they participate in demonstrations and learning sessions led by outside suppliers and industry to ensure that they have the most up-to-date knowledge to impart in their training courses.

What are Challenges to Program Development and Delivery?

Geography and distance can be challenging for organizations that wish to complete the Powerline Technician Proficiency Program at the IHSA training facility. In addition, weather can be a significant challenge to program delivery. All courses are scheduled with a finite timeline; if there is too much inclement weather during the training session, the hands-on portion of the course may have to be re-arranged.

How are Challenges to Program Development and Delivery Overcome?

To overcome the challenges associated with geography and distance, the IHSA routinely sends their trainers to an organization's worksite to deliver the training rather than having the trainees travel to the IHSA training facility. Not only does on-site program delivery mitigate travel issues, but it also allows the trainers to integrate actual jobs into the hands-on training component. In completing actual jobs as practical training, productivity is not compromised and it makes the training more purposeful.

What are the Organizational Benefits of the Training?

The IHSA recognizes numerous benefits of the Powerline Technician Proficiency Program including:

- Essential hands-on training from industry experts
- The ability to combine skills-based training with health and safety considerations
- Working with those new to the trade to build strong safety habits; working with those not so new to the trade to break bad habits
- Working with trainees to evaluate their strengths and challenges and working with their employers to build an environment of constant learning and improvement

How is the Powerline Technician Proficiency Program Evaluated?

According to Kirkpatrick's Learning Evaluation model, training programs can be evaluated across four levels. The IHSA evaluates their Powerline Technician Proficiency Program using the following approaches:

Level 1: Reaction – How the participants feel about the training that they received

- Trainees are asked to complete evaluation forms at the end of their program that evaluates both the training program and the instructor. The evaluation forms provide input in regards to how to improve the program for future delivery.

Level 2: Learning – Measuring an increase of knowledge among training participants

- Trainees are required to complete pre- and post-training examinations to assess knowledge prior to the program and to assess learning following the program. Examinations are developed specifically for each program to reflect the main learning points and take-away items from each session. While the examination is not a pass/fail assessment, the results provide the trainer with an assessment of the learning that has occurred as a result of the training.

Level 3: Behaviour – Measuring the extent that learning is applied on the job to change worker behaviour/practices

- In some instances, trainers are requested to evaluate trainees after a period of time to assess changes in job performance that have resulted from the learning process and their capabilities to perform their newly acquired skills while on the job.

What do IHSA Clients Say About the Powerline Technician Proficiency Program?

ENWIN has long engaged IHSA and its predecessor organization, E&USA, to provide Proficiency Training for both our Cable Splicers and Powerline Maintainers. Through proficiency training administered cyclically to our line staff, IHSA is able to assist us in the reinforcement of best practices and provide a supplement to our internal training programs, supervisory staff and committees. The IHSA employs professional trainers who are willing and able to tailor training materials to the individual needs of a particular utility. While their courses include reinforcement of legislation, rules and regulations, the training opportunities are rich in practical applications that focus on staff participation. While initially concerned that IHSA courses might focus on unrealistic, "text book" scenarios, our field staff have spoken positively of the proficiency training, noting the importance of an "external set of eyes" evaluating their performance and offering positive feedback in addition to tips for improvement that relate to actual field conditions at our utility. All in all, IHSA Proficiency Training provides a unique opportunity to refresh skills, reinforce best practices, re-visit legislative requirements and hone techniques in a professionally administered, local setting.

ENWIN Utilities

Delivering IHSA courses for the purposes of journey person refresher training and upgrading is beneficial for several reasons. Courses can be delivered on site, thus eliminating the costs associated with travel and training is delivered by crew which fosters teamwork and allows PLTs to practice their skills with their co-workers on equipment that is familiar to them. In the wake of retirements of numerous skilled workers presently and in the next five (5) years, the delivery of IHSA courses will remain imperative to ensure that the workforce remains skilled.

Ontario Utility

Case Study 5: Manitoba Hydro – Post-Journeymen Trade Training

About Manitoba Hydro

Manitoba Hydro is a crown corporation and the province of Manitoba's major energy utility serving 542,000 electric customers throughout the province through electrical generation, transmission, distribution and customer service. Manitoba Hydro has capital assets-in-service at original cost exceeding \$13 billion, making them one of the largest energy utilities in Canada. The organization employs approximately 6,200 workers, 500 of which are powerline workers, inclusive of overhead and underground operations.

PROGRAM SNAPSHOT

Number of PLTs per Session: Crew
Trainees: PLTs
Program Length: 3-4 days
Program Developed: Custom
Method: 40% theory, 60% practical

About the Program

Manitoba Hydro has spent the last two years developing a post-journeymen trade training program that was piloted approximately 12 months ago. The program has three main focus topics inclusive of: emergency transmission line restoration, specialty cable work and journeyperson troubleshooting skills. The pilot sessions delivered were between three to four (3-4) days in length. The training department is currently in the curriculum revision phase. In addition, they are identifying and setting parameters for the course audiences and will determine a delivery cycle for the training once full roll-out has been achieved.

How did the Post-Journeymen Trade Training program begin?

Manitoba Hydro has been offering Transmission Line Training for the past three (3) years. They have recently embarked upon the development of the Post-Journeymen Trade Training program to serve as a refresher training opportunity to address needs identified in the field and to ensure that PLTs remain current in safe work practices and methods. While the refresher training program is in the preliminary stages of development, pilot sessions conducted with PLTs have been promising, and internal training centre staff is working to develop high-quality course materials and practical exercises for program roll-out.

How Long is the Program and When is it Delivered?

Pilot sessions for the Post-Journeymen Trade Training program ranged in length from three to four (3-4) days; however, the length of the program, as well as the time of delivery, is often topic specific and dependent upon the training needs and availability of work crews to attend training sessions.

How is the Training Content Developed?

The training content for the Post-Journeymen Trade Training program is developed in-house by training centre staff. Training content is developed based on needs identified by the field as well as the newly developed PLT Review Committee, comprised of various stakeholders that are involved with the PLT workforce throughout the organization. The need for program delivery, as well as the recommended course content, is decided upon by the PLT Review Committee on a yearly basis.

Who Takes Part in the Training?

The Post-Journeymen Trade Training program will be offered to all PLTs employed by Manitoba Hydro – inclusive of overhead and underground operations. The program can be delivered on a crew by crew basis and tailored to meet the needs of each participating group of PLTs.

Who Trains?

The Post-Journeymen Trade Training program is delivered by in-house, full-time instructors employed by the Manitoba Hydro Training Centre. In addition, retired employees (journeypersons) are also hired on a contract basis to deliver training sessions on an as-needed basis.

What are Challenges to Program Development and Delivery?

The main challenges encountered by Manitoba Hydro in the development and delivery of the Post-Journeymen Trade Training program have been integrating the program into work scheduling from the organization as a whole as well as obtaining the resources required to support the on-going development and delivery of the program.

How are Challenges to Program Development and Delivery Overcome?

While in the preliminary stages of program development, Manitoba Hydro has worked to identify challenges that are being encountered and are currently in the process of developing strategies for addressing and overcoming these challenges.

What are the Organizational Benefits of the Training?

Manitoba Hydro places significant importance on refresher training for their post-journey workforce. In the eyes of the Training Centre, the Post-Journeymen Trade Training program will help to keep their most experienced field workers current on best practices and procedures which not only increases production and efficiency, but most important, promotes and enhances safety in the workplace.

How is the Post-Journeymen Trade Training Program Evaluated?

According to the Kirkpatrick's Learning Evaluation model, training programs can be evaluated across four levels. Manitoba Hydro evaluates their Post-Journey Trade Training program using the following approaches:

Level 1: Reaction – How the participants feel about the training that they received

- While in the preliminary stages, it is anticipated that trainees will be asked to provide written and verbal feedback post-program to provide the Training Centre staff with insights into program improvement and enhancement.

Level 2: Learning – Measuring an increase of knowledge among training participants

- Manitoba Hydro uses a competency based evaluation process. Successful completion of the program is indicated by the student demonstrating the hands-on task for the trainer.

What do your journeypersons think of the Post-Journeymen Trade Training Program?

Manitoba Hydro has received positive feedback on all training delivered to date. However, refresher training can be a cultural shift for more 'experienced' field workers.

A Piece of Advice for Developing a Post-Journey Powerline Worker Refresher Training Program

Do not wait too long when developing a training program; ensure that you have all the funding and supports (including human and monetary resources) in place from upper management to ensure an effective program roll-out.

