

Powerline Trade Development Initiative

What?

Support to enhance refresher training for journeypersons

How?

Through extensive research and in-depth analysis.

Why?

Better equip trainers and training departments.

Improve the quality and consistency of training.

Support labour mobility.

Products

Occupational standards and essential skills for two associated trades; utilities arborist and Power Cable Technician (PCT).

Web-based Toolkit for journey powerline refresher training.

Context

Electricity Human Resources Canada's (EHRC) *Supporting Line Trade Development* project is a key initiative 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. Effective training directly impacts the abilities of Powerline Technicians (PLTs) to do their jobs safely and to successfully learn new technologies.

The overall goal of the project was to develop a common needs/gap diagnostic in support of journeyperson refresher training through extensive qualitative and quantitative research and in-depth analysis. By looking at effective practices across the industry, trainers and training departments will be better equipped to deliver this training. Further, the quality of this training will improve, will be more consistent, and will better support labour mobility for the powerline trade and trades associated with powerline work.

This project also provides a pan Canadian perspective on two key associated support roles to the trade, Utilities Arborist and Power Cable Technician. This was accomplished through the development of occupational standards and associated essential skills profiles for



Photo: Hydro Ottawa

both of these supporting occupations. While these roles are active in all provinces, few have developed trades profiles for these support roles. The *National Occupational Standards* (NOS) and *Essential Skills Profiles* developed under the ESC's Supporting Line Trade Development project are developed not only for industry, but more importantly, by industry. The goal of National Occupational Standards and Essential Skills Profiles is to accurately depict the skills, knowledge, and abilities required to successfully perform a given job.

Finally, a web-based *Toolkit* was developed to provide resources to support the industry and provincial authorities in building effective post journey powerline refresher training.

Terms of the Trade

It is worth noting that during the primary research the industry adopted the term "Power Cable Technician" as a replacement for "Cable Splicer" to be more inclusive of the work completed by tradespeople. This was also done with the hope that in the future, the trade would receive Red Seal status (certification status) and that the Powerline Technician (PLT) and the Power Cable Technician (PCT) would share similar terminology.

Our Research

- Research & Consultation Report For Post-Journey Powerline Workers' Refresher Training
- National Occupational Standard & Essential Skills Profile for Utility Arborist
- National Occupational Standard & Essential Skills Profile for Power Cable Technician Project

Our Refresher Training Toolkit

The Toolkit includes:

- refresher training material;
- contact database of training experts in Canada;
- list of useful resources; and
- informational videos on training and leadership.

Who Is It For?

For training professionals and provincial authorities.

Research

Several reports and HR tools were created as part of the *Powerline Trade Development Initiative*.

Case studies have been developed as part of this project to provide the industry with current examples of effective approaches for post-journey refresher 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.

Case studies provide training personnel with a foundation upon which to gain further knowledge and direction on various approaches to post-journey refresher training to implement within their own organizations.

Web-based Refresher Training Toolkit

The Web-based Refresher Training Toolkit for Powerline Technicians builds upon the four recommendations of the Research and Consultation for Post-Journey Powerline Workers Refresher Training research:

- Develop a framework/benchmark for post-journey refresher training
- Develop a communication network and resource library for post-journey refresher training
- Develop supervisory training resources
- Promote continuous learning for Powerline Technicians

The content of the toolkit includes a document repository that includes industry refresher training material, a contact database of refresher training experts in Canadian utilities, a list of useful online and print training resources, and informational videos on refresher training and leadership skills. Due to the online nature of the web-based refresher training toolkit, the document repository



Photo: Hydro Ottawa

Access Our Research

To download all of our research documents, please visit www.electricityHR.ca

has the ability to expand as more utilities contribute relevant training documents in the future.

The target demographics of the web-based refresher training toolkit are training professionals and provincial authorities that are responsible for providing technical and safety refresher training to Powerline Technicians. By providing access to best practice information and resource material, Electricity Human Resources Canada will support these professionals in providing effective, quality, and standardized refresher training programs.

Get the Toolkit

The toolkit is available on the Electricity Human Resources Canada website www.electricityHR.ca.

The Training Toolkit: Benefits to Powerline Technicians

1. Decrease in time spent developing refresher training programs

Since sample refresher training documents, resources, and training experts will be accessible through the web-based toolkit, training professionals can cut down on the time they spend looking for refresher training content. Essentially, utilities will be able to springboard off previous training successes in the electricity sector. This will give training professionals more time to work on the successful delivery of these programs.

2. Promote continuous learning for Powerline Technicians

Due to the dynamic nature of the online web-based refresher training toolkit, the toolkit has the ability to expand in content as more utilities contribute relevant training resources in the future.

3. Greater workplace efficiency

With the web-based toolkit supporting up-to-date refresher training programs, Powerline Technicians and their employers will enjoy greater workplace efficiency after reviewing best practices and procedures.

Recommendations

1. Create a communication network and resource library.
2. Develop a framework for post-journey refresher training programs.
3. Provide supervisory training resources.
4. Promote continuous learning for PLTs.

Recommendations For Enhancing Post-Journey Refresher Training

Based on the research findings collected over the course of the project, the research team has compiled the following recommendations as feasible and practical strategies that have relevance for various stakeholders within the Canadian electricity sector interested in developing or enhancing post-journey refresher training programs for powerline workers.

1 Develop a communication network and resource library for post journey refresher training

Pan-Canadian consultation participants indicated that they welcome opportunities to network with their peers from across Canada to share insights, challenges and ideas with one another. Many participants indicated that their opportunities for such networking activities are somewhat limited and that developing a virtual communications network and resource library for post-

journey refresher training would be an excellent way to keep in touch, foster partnerships and develop a support network among representatives who are working towards developing or enhancing their post-journey powerline worker refresher training programs.

2 Develop a framework/ benchmark for post-journey refresher training

Throughout the pan-Canadian consultation process, it became evident



that utility and contractor representatives alike were in favour of the notion of developing a national framework or benchmark to outline a suggested process or 'best practice' for the design, development and implementation of post-journey refresher training programs. Representatives noted that such a framework would greatly benefit organizations (particularly those without staffed training departments) as a guiding resource rather than having to 'start from scratch.'

3 Develop supervisory training resources

Throughout the research process, across key informant interview and pan-Canadian consultation data, it became evident that industry is in need of training resources to support individuals moving into supervisory roles. Numerous research participants indicated that individuals are moving into supervisory roles much earlier in their careers (and at younger ages) than before and these individuals are often completely unaware of the roles and responsibilities associated with their new positions, which can make the transition from crew member to foreperson or lead hand incredibly daunting and difficult. To support this transition, representatives from utilities and contractors alike suggested that having training programs available to workers prior to their movement into supervisory roles, as well as support resources for once in the roles, would be highly beneficial for the industry.



4 Promote continuous learning for PLTs

Research participants indicated that as a Powerline Technician, continuous learning throughout one's entire career is critical for remaining up-to-date with advances in technology, equipment and work processes and procedures. Many participants indicated that the electricity sector has created a false assumption that the training period for a PLT is four years (the length of one's apprenticeship) and that once a PLT has been certified, the learning process is over. Participants indicated that it is imperative that the industry takes strides to change this mindset and adopt the philosophy that continuous learning is critical for success in the trade. To jumpstart this change in mindset, it was suggested that the seed should be planted in the apprenticeship period to encourage apprentices to seek out learning opportunities and embrace training and learning opportunities as a part of their careers after they achieve journeyman status.



Recommendations for Use of National Occupational Standards and Essential Skills

As a result of the culmination of the research findings collected over the course of the project, the research team is proposing the following recommendations as feasible and practical uses of the NOS and ES Profile that have relevance for various industry stakeholders – inclusive of small, medium and large organizations, publicly and privately-owned utilities, municipal utilities and contractors.

Recommendations

1. Formalize national and provincial trade certification.
2. Make use of NOS for training development.
3. Use NOS for performance appraisals, hiring and training.
4. Promote power line trades as a viable career option.

1 Trade Certification

Throughout the research process, job incumbents from across the country expressed their desire for enhanced trade recognition in the form of a provincial/ national certification process. Participants suggested that the lack of certification (at the provincial or national level (i.e., Red Seal), negatively impacts not only attraction and retention in the trade, but also the level of respect that the trade garners within the industry.

National Occupational Standards provide a benchmark of the skills, knowledge and abilities required for competent job performance and often serve as the foundation for the development of certification schemes or approaches (that is, similar to the National Occupational Analysis that forms the basis of skill requirements for Red Seal Designated Trades). As such, the NOS could be utilized as a foundational document should a province/territory or national certifying entity choose to move forward in the development of a certification program for the Power Cable Technician Trade. At the very least, the NOS can be utilized as a critical document to illustrate the highly developed skill-set required of the Power Cable Technician workforce, which can assist in justifying additional recognition and certification development for the trade.



2 Training Development

Through consultation with various utilities from across the country, it became evident that several organizations (particularly utilities located in Ontario) have established internal training programs (often inclusive of an apprenticeship program) for the Power Cable Technician trade. In these instances, organizations have identified the skill requirements of journeyman workers from which they have developed training (often a combination of classroom theory and hands-on, practical learning experiences) to educate future cable workers for their organizations.

In this vein, the NOS can serve as a foundational document in the development of organizational, provincial/territorial or national training for the Power Cable Technician trade. In particular, the NOS can serve as a first step



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.

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for the further analysis of each Task using a process known as Systematic Curriculum and Instructional Design (SCID).

The resulting analysis provides the extensive level of detail associated with each Task that is required to develop competency-based learning modules for a specific Task or related group of Tasks within the NOS. These competency-based modules are conducive to the hands-on, practical training approach preferred by the electricity sector in that they are learner-led, include tactical, scenario-based learning activities and assume competency-based testing as an evaluation methodology.

3 Competency Mapping and Benchmarking

NOS have a practical use at the organizational level in the development of HR materials to assist with performance appraisals, hiring and training.

By using the NOS as a foundational document, or benchmark, to identify essential competencies that will be woven or 'mapped' throughout the suite of HR development resources, an organization is fostering consistency in the skill set development of their entire cable workforce.

4 Enhancing Trade Awareness

Industry participants indicated that a major point of concern among job incumbents is the overall lack of awareness of the Power Cable Technician trade. Participants suggested that this lack of awareness, which in turn leads to lack of attraction to the trade, is due largely in part to the lack of certification for the trade. However, in recognition that the road to certification is long and winding, efforts must be made now (at both the organizational and industry level) to draw attention to the Power Cable Technician trade as a viable career option within the electricity sector.

The National Occupational Standard (as well as the Essential Skills Profile for Power Cable Technician), plays a critical role in highlighting the skill level, associated work tasks, knowledge requirements and literacy levels of the trade. These documents serve a window into the work and can provide young people interested in entering the electrical trades with a sense of the Power Cable Technician trade. As such, the NOS and ES Profile for Power Cable Technician can be utilized as an informational and educational tool by high school guidance counselors, educational counselors/advisors and recruiters to promote the job and to enhance trade awareness.

This project also included the development of a National Occupational Standard (NOS) and Essential Skills Profile (ESP) for the role of Utility Arborist. Both the Standard and the ESP were developed not only for industry, but more importantly, by industry.

In this vein, the participation of industry professionals was imperative to the project's success, playing a critical role in the development, revision, and subsequent validation of the NOS. The goal of National Occupational Standards and Essential Skills Profiles is to accurately depict the skills, knowledge, and abilities required to successfully perform a given job. To create the NOS it was imperative that electricity professionals, those individuals who are competent performers of the functions

and duties of the occupations, acted as the authoritative body throughout the project, particularly in the final validation stage.

Men and women were interviewed from several provinces across Canada. The interview participants ranged in age and job experience spanning from Utility Arborist apprentices to Utility Arborists with several decades of experience. Interviewees spoke about their continuous learning activities, describing them predominately as self determined and safety orientated. Interviewees also described the impact of changing technology on their daily work tasks. Most interviewees felt that advancements in digital technology were resulting in positive changes, with cell phones being noted as having the greatest impact,

facilitating communication among crews, supervisors, controlling authorities and utilities

The following is the final version of the definition of a Utility Arborist.

Utility Arborists are specially trained individuals who fell, prune and/or clear brush, trees and limbs that are in close proximity to energized power lines or associated electrical equipment. Utility Arborists use various hand tools, ropes, pulleys, chainsaws, chippers and aerial devices. Utility Arborists may work with specialized sprayers and herbicides to further manage vegetation. Utility Arborists are required to wear personal protective equipment and may wear climbing gear. Most Utility Arborists work for power utility companies or private contractors.

