



Pulse of the Peace / 2015
PROFILING NORTHEAST B.C.'S IN-DEMAND WORKFORCE
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PROFILING NORTHEAST BC'S
In-Demand Workforce



Contents

Welcome /3

In-Demand Occupation Profiles

- 01 Industrial and Residential Electricians /4
- 02 Oil and Gas Drilling Service Related Labourers /6
- 03 Oil and Gas Drilling Workers and Service Operators /8
- 04 Power Engineers /10
- 05 Truck Drivers /12

Career Planning Tools /14

Industrial Worksite Training

- Occupational First Aid Level 1 /17
- Petroleum Safety Ticket /17
- H2S Alive /18
- Transportation Endorsement /18
- Transportation of Dangerous Goods /19
- Air Brake Endorsement /19
- WHMIS /20

Post-Secondary Education Funding Options /21

Upcoming Projects

- Site C Dam: BC Hydro Project /22
- LNG Pipeline: Liquefied Natural Gas /24

Resource Directory /28

General Contact Information /31

Acknowledgments /31



Welcome

Northeast B.C. is experiencing a powerful pulse of extreme economic growth!

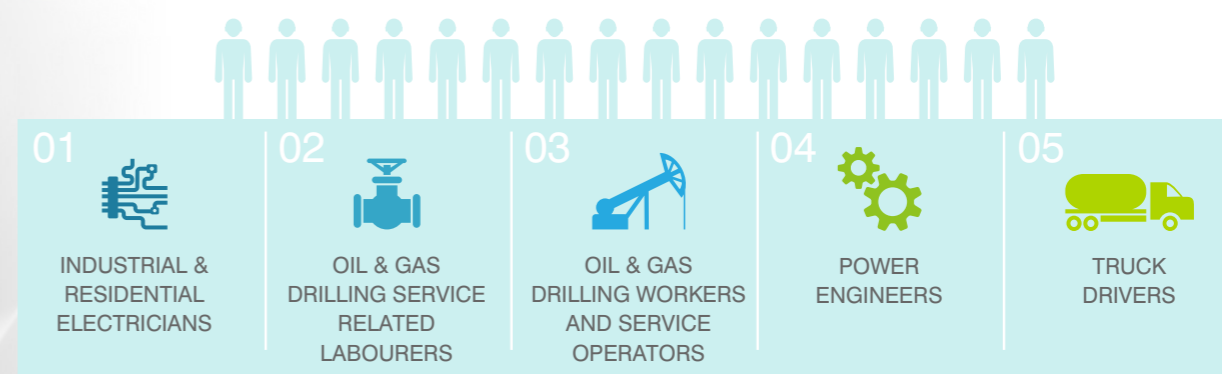
Current and future projects in the region, such as the Site C Hydroelectric Dam and the potential Liquefied Natural Gas (LNG) Pipeline, will provide amazing opportunities for trained and skilled workers. These projects are expected to increase the demand for workers exponentially, a demand that will continue to grow.

The Pulse of the Peace resource guide has been developed to provide job seekers, students, parents, career practitioners and teachers with access to information, resources and opportunities for the in-demand occupations in Northeast B.C.

In order to align existing regional training with local employment opportunities, the BC Jobs Plan has led to the creation of the Regional Workforce Tables (RWT), to ensure that British Columbian's have access to information, training and job opportunities in the region.

Based on information the RWT collected through research, combined with consultation with the BC Centre of Excellence in Oil and Gas, they identified existing training, training issues and potential gaps in the region. Although the committee is aware of numerous occupations that are experiencing a critical shortage, the focus was on the following in-demand occupations:

2015 NORTHEAST B.C. IN-DEMAND OCCUPATIONS



This resource guide provides complete profiles of each of these five in-demand occupations along with valuable information on the upcoming Site C Dam and potential LNG Pipeline projects.

If you are interested in learning more about the occupations not discussed here please reference the Resource Directory Section of this guide or visit www.workbc.ca/Job-Seekers/Industry-Profiles.aspx for more information.

IN-DEMAND OCCUPATION PROFILES

01

Industrial &
Residential
Electricians

- ✓ effective communication & problem solving skills
- ✓ text reading & numeracy skills
- ✓ well organized & safety conscious

Job Description

An Electrician is a skilled individual who must possess fundamental and specialized knowledge and skills related to installation, construction, alterations, repairs, maintenance, testing, servicing, calibrating, and operating electrical and electronic systems in any premise, place, building, or structure. Electricians perform a variety of tasks on the electrical systems of buildings and other structures.

Full information on Industrial & Residential Electrician apprenticeships can be found on the ITA website at: www.itabc.ca/program/electrician-industrial and www.itabc.ca/program/electrician-construction

Labour Market Information

There is a 1.1% expected annual demand growth rate between 2010-2020, and more than half of the job openings in the coming years are expected to come from new job growth. Over the last few years, the combination of low interest rates and a growing economy has resulted in a rapid increase in industrial activity.

Career Decision Making Tools

- www.itabc.ca/program/electrician-industrial
- www.itabc.ca/program/electrician-construction
- bc.tradesinfo.ca

Employment Opportunities

Industrial Electricians are employed by maintenance departments of factories, plants, mines, shipyards, oil and gas rigs, as well as platforms, and other industrial enterprises. Residential Electricians generally work for electrical contractors or building maintenance departments or may be self-employed. Experienced electricians can advance to supervisory positions as foremen, superintendents, estimators or electrical inspectors.

For more information on Employment Opportunities see bc.tradesinfo.ca

Average Salary

The average salary for this occupation is \$19-\$39 per hour, based on apprenticeship year and area of expertise.

Essential Skills

- Most important skills: document use, problem solving, computer use
- Interpersonal skills and teamwork skills
- Text reading and numeracy skills
- Critical thinking skills and decision-making skills
- Communication and listening skills
- Problem solving and troubleshooting skills
- Job planning and organization skills
- Safety proficiency
- Use of hand tools and equipment skills

High School & Diploma Upgrading

The following are recommended for apprentices entering this occupation. They are not pre-requisites, but rather a desired level of skill or knowledge that will contribute to their success.

- Recent Grade 12 graduate (within the past 5 years) with demonstrated mechanical aptitude, Principles of Mathematics 11, Physics 11 and English 12.
- Successful completion of an electrical industry assessment examination which includes items relevant to technical and mechanical aptitude, Principles of Mathematics 11 equivalencies, Physics 11 equivalencies, and English 12 equivalencies.
- Recent Electrical Foundations Program Graduate (within the past 5 years) of an ITA approved program.
- Industry strongly recommends that apprentices considering attending Level 1 Construction Electrician program have at least one year of work-based training as an electrical apprentice before beginning their in-school technical training. (ITA)

Post-Secondary Training

To work as an Industrial Electrician it is necessary to hold a certificate of qualification from the ITA or be registered in a four-year apprenticeship that will lead to qualification. Requirements for trade certification include:

- Completion of a four-year apprenticeship program
- Combination of more than five years work experience and some high school, college, or industry courses in industrial electrical equipment

The industrial electrician apprenticeship requires a combination of work experience and class time instruction. Apprentice programs can be started in secondary school, through entry-level training (Foundation) programs at colleges and technical institutes or by direct entry to the workplace

Apprenticeships require workers to find a sponsor employer who is willing to participate in the program.

Post-Secondary Regional Training Options

- Northern Lights College, Fort St. John / Industrial Electrician, Apprentice
- Thompson Rivers University, Kamloops, Williams Lake / Industrial Electrical (Electrician), Apprentice

Sources

- www.workbc.ca/Job-Seekers/Industry-Profiles.aspx
- bc.tradesinfo.ca
- www.itabc.ca

IN-DEMAND OCCUPATION PROFILES



Oil & Gas Drilling Service Related Labourers



✓ take direction & show initiative

✓ able to work in any weather condition

✓ physically fit & flexible

Job Description

Oil & Gas Drilling Service Related Labourers carry out a variety of duties and operate equipment to assist in the drilling and servicing of oil and gas wells. Employees in this occupation work for drilling and well servicing contractors and petroleum producing companies.

Labour Market Information

The oil & gas industry is key to Canada's economy, and with many people retiring over the coming decade, the industry is expected to hire for years to come. The number of people retiring already outnumbers those joining the industry today. The Petroleum Human Resources Council has generated medium to long-term industry validated labour market information that forecasts employment demand to 2020 for exploration, development, production, service industries, pipeline transmission, gas processing and mining, and extracting and upgrading heavy oil (in situ) and bitumen. Overall, oil sands operations are expected to provide the most new employment opportunities, while conventional oil and gas activity is projected to decrease over time and not return to the peak experienced in 2006.

Career Decision Making Tools

Visit www.careersinoilandgas.com or link directly to:
www.careersinoilandgas.com/media/153394/drilling%20and%20service%20rig%20semi-skilled%20worker.pdf

Employment Opportunities

Unless a person has experience on oil & gas drilling or service rigs, they will begin in the entry level position of lease hand or floor hand. With experience and time, individuals can advance to more senior crew positions.

Average Salary

The average full time salary for this occupation falls within the range of \$18-\$31 per hour based on experience. In this occupation a large piece of an employee's income can be generated from working overtime hours.

Essential Skills

- Mechanical aptitude and abilities
- Ability to problem solve, troubleshoot and think quickly
- Ability to judge distances and spatial relationships
- Tolerance, stamina, and flexibility to work outdoors in any weather conditions
- Respect for safety of self and others
- Willingness to perform responsibilities that require physical exertion
- Willing to ask questions, learn on the job and complete different tasks
- Ability to take direction and show initiative

High School & Diploma Upgrading

Entry-level drilling and service rig jobs do not require previous experience or post-secondary education. Employers look for individuals with a strong work ethic, a willingness to learn and a clean drug and alcohol test.

Post-Secondary Training

Workers must have some safety tickets including:

- H2S Alive
- Occupational First Aid Level 1 (OFA Level 1)
- WHMIS
- Transportation of Dangerous Goods (TDG)
- Specific employers may require further industry standard safety tickets as well.
- A valid Class 5 driver's license may be needed to operate a personal or company vehicle

Post-Secondary Regional Training Options

- Northern Lights College, Fort St. John/Dawson Creek/Fort Nelson
- Echo Safety, Dawson Creek
- Alpha Safety, Fort St. John
- Trojan Safety, Fort St. John
- St. Johns Ambulance, Fort St. John
- JT Safety, Dawson Creek

Sources

- www.workbc.ca/Job-Seekers/Industry-Profiles.aspx
- Visit www.careersinoilandgas.com or link directly to:
www.careersinoilandgas.com/media/153394/drilling%20and%20service%20rig%20semi-skilled%20worker.pdf

IN-DEMAND OCCUPATION PROFILES



Oil & Gas Drilling Workers and Service Operators



✓ excellent hand-eye
coordination

✓ mechanical
aptitude & abilities

✓ tolerance of working
in remote locations

Job Description

This Occupation Profile represents a wide variety of specialized Well Services Operator jobs that provide servicing to oil & gas wells in pre-production and post-production phases. These jobs are integral to development and long-term viability of the well. Most are highly specialized and dependent on one another for process sequencing and scheduling.

Labour Market Information

The oil & gas industry is key to Canada's economy and with many people retiring over the coming decade, the industry is expected to hire for years to come. The number of people retiring already outnumbers those joining the industry today.

The Petroleum Human Resources Council has generated medium to long-term industry validated labour market information that forecasts employment demand to 2020 for exploration, development, production, service industries, pipeline transmission, gas processing and mining, and extracting and upgrading heavy oil (in situ) and bitumen. Overall, oil sands operations are expected to provide the most new employment opportunities, while conventional oil and gas activity is projected to decrease over time and not return to the peak experienced in 2006. In addition, the service and pipeline sectors are expected to provide increasing support to the heavy oil (in situ) extraction within the oil sands.

Career Decision Making Tools

Visit www.careersinoilandgas.com or link directly to:
www.careersinoilandgas.com/media/153394/drilling%20and%20service%20rig%20semi-skilled%20worker.pdf

Employment Opportunities

- Acidizing Operator or Pump Servicer
- Power Tong and Casing Operator
- Cementing or Coil Tubing Operator
- Completion and Service Tool Operator
- Drill Stem Test Operator
- Fracturing Equipment Operator
- Logging and Coring Operator
- Nitrogen Operator
- Production Well Test Operator
- Snubbing Services Operator or Swabbing Unit Operator
- Wireline Operator

Average Wage

The average full time salary for this occupation falls within the range of \$26-\$42 per hour, based on experience. In this occupation a large piece of an employee's income can be generated from working overtime hours.

Essential Skills

- Mechanical aptitude and abilities
- Ability to visualize how a tool is functioning without being able to look at it
- Tolerance, stamina, and flexibility to work outdoors in any weather condition
- Ability to problem solve, troubleshoot, and think quickly on your feet
- Mindful of safety precautions for self and others
- Interested in opportunity to be exposed to and the potential to learn different work specializations
- Willingness to perform responsibilities that require physical exertion
- Tolerance for travelling to and remaining in isolated locations
- Willingness to work hard for long hours

High School & Diploma Upgrading

Grade 12 with good math skills, a strong work ethic and willingness to learn are what employers typically look for.

Post-Secondary Training

Many Well Service Operators are required to operate heavy trucks and possess a Class 1 or 3 operator's license with heavy truck endorsement and a clean driving record. Operators are required to obtain Industrial Worksite Training in the following:

- Occupational First Aid Level 1 (OFA Level 1)
- WHMIS
- Transportation of Dangerous Goods (TDG)
- H2S Alive

Post-Secondary Regional Training Options

- Northern Lights College: Oil and Gas Field Operations One Course
Fort St. John/Dawson Creek/Fort Nelson
- Echo Safety, Dawson Creek
- Mountainview Safety Services Ltd., Dawson Creek
- Alpha Safety, Fort St. John
- Trojan Safety, Fort St. John
- St. Johns Ambulance, Fort St. John
- JT Safety, Dawson Creek

Sources

- www.workbc.ca/Job-Seekers/Industry-Profiles.aspx
- Visit www.careersinoilandgas.com or link directly to:
www.careersinoilandgas.com/media/153394/drilling%20and%20service%20rig%20semi-skilled%20worker.pdf

IN-DEMAND OCCUPATION PROFILES



Power Engineers



✓ good vision, hearing & manual dexterity

✓ mechanical aptitude & abilities

✓ ability to work well in a team environment

Job Description

Power Engineers are responsible for the safe and efficient operation and maintenance of industrial equipment such as boilers, steam and gas turbines, generators, gas and diesel internal combustion engines, pumps, condensers, compressors, pressure vessels and related controls. In large industrial or building complexes, they also may be responsible for heating, air-conditioning, ventilation, refrigeration, fire systems, and building control systems. Responsibilities vary from one position to another.

Labour Market Information

Over the next decade, the Oil & Gas sector will need to fill between 37,700 and 47,900 job openings due to industry activity and age-related attrition. Despite a decline in the total number of conventional exploration and production jobs, oil sands operations will require significant hiring. Age-related attrition will create a number of job vacancies for both sectors. It is expected that between 6,850 and 10,700 job openings in conventional E&P and between 14,900 and 22,200 in oil sands operations will need to be filled due to industry activity and age-related attrition (low growth and expansion scenarios respectively). Foreign investment and the province's liquids-rich natural gas have kept B.C.'s industry busier than expected, especially considering the low natural gas price environment. In the low growth scenario, where increased demand is from domestic sources, B.C.-based employment only grows by 640 jobs to 2022. In the expansion scenario, where the development of a B.C.-based LNG export industry is realized, the projected employment growth is 1,600 jobs to 2022.

Career Decision Making Tools

Visit www.safetyauthority.ca or link directly to:
www.safetyauthority.ca/licences-certificates/exams-certificates/boiler#1st

Employment Opportunities

A Power Engineer is a person skilled in the overall operation of a power (steam) plant or process. This includes operation of high and low pressure boilers and related areas such as: water treatment, pump operation, instrumentation, electricity, fuels and combustion, air compressors, maintenance, housekeeping and refrigeration.

You will gain solid practical, theoretical, and technical knowledge that will enable you to work in the following positions:

- Power plant operations and management
- Maintenance to pressurized systems and boilers
- Thermal engineering
- Fluid mechanics
- Technical communications
- Basic instrumentation
- Industrial electronics

Average Wage

The average wage for this occupation ranges from \$31-\$58 an hour, based on class obtained. In this occupation a large piece of an employee's income can be generated from working overtime hours.

Essential Skills

- Mechanical and electrical aptitude
- Good vision, hearing, manual dexterity, and eye-hand co-ordination
- Effective communication skills
- Good organizational and decision making skills
- The ability to work safely and efficiently
- The ability to work well with others in a team environment

High School & Diploma Upgrading

Those who wish to enroll in Power Engineering programs are required to have a good command of written English and a minimum of Math 11. Grade 12 education is preferred.

Post-Secondary Training

Power Engineering is not an apprenticeship trade; however, it is divided into levels of skill and training, much like that of apprenticeship trades.

The Power Engineering skill levels are referred to as classes, with Fourth Class being the entry skill level and First Class being the highest level of achievement. A combination of work experience and course completions (either at a post-secondary training institution or by correspondence training), followed by successful completion of interprovincial examinations, allows a Power Engineer to advance from one class to another.

Pre-requisites to enter into Power Engineer Training

Each level of the program is designed to meet the requirements you need to advance to the next level of training. This is combined with work experience and successful completion of the interprovincial examinations for that class.

Post-Secondary Regional Training Options

Northern Lights College, Fort St John

Sources

- www.workbc.ca/Job-Seekers/Industry-Profiles.aspx
- www.bcit.ca/energy
- www.safetyauthority.ca
- Visit www.northernopportunities.bc.ca or link directly to:
www.northernopportunities.bc.ca/the-programs/trades-programs/power-engineering/job-power-engineer/

IN-DEMAND OCCUPATION PROFILES

05

Truck
Drivers✓ excellent
driving skills✓ able to remain focused
for extended hours✓ mechanical aptitude
& abilities**Job Description**

Truck Drivers operate light and heavy trucks, including multi-trailer combinations, to transport goods and materials over urban, interurban, provincial and international routes. People in this occupation work for trucking, transportation, and manufacturing companies.

Labour Market Information

Since this is a large occupational group, a significant number of openings are expected. New openings will result from growth in the transportation and warehousing industry as well as the oilfield Industry.

Career Decision-Making Tools

Visit www.icbc.com or link directly to:
www.icbc.com/driver-licensing/types-licences/Pages/Get-your-commercial-driver-licence.aspx

Employment Opportunities

Truck drivers can work for trucking, transportation, and manufacturing companies in positions such as bulk goods driver, flatbed driver, logging driver, long haul driver, moving driver, tow truck and various other combinations.

Average Salary

The average full-time salary for this occupation falls within the range of \$30-50 per hour, based on experience and chosen field. In this occupation a large piece of an employee's income can be generated from working overtime hours.

Essential Skills

- Excellent driving skills, good judgment, an ability to remain focused for extended periods of time and to react quickly in emergency situations.
- Should enjoy meeting new people as well as working alone.
- Have good time management and organizational abilities.
- Are expected to be aware of various regulations governing truck transportation, including record keeping requirements, weights and dimensions regulations and acceptable routing.

High School & Diploma Upgrading

There is no current minimum high school education standard for truck drivers.

Post-Secondary Training

There is currently no minimum training standard for Truck Drivers; however, they do require holding a valid Class 3 or Class 1 driver's license. These training programs are offered at B.C. colleges or private institutions and typically run 3-4 weeks in length.

Post-Secondary Regional Training Options**Private Training Programs:**

- Taylor Professional Driving, Prince George / Class 1, 2, 3 & 4 Training
- Safety First Professional Driver Training, Fort St. John / Class 1 & 3 Training
- The Patch Driver Development, Fort St. John / Class 1 Training
- BC Transport, Dawson Creek / Class 1 & 3 Driver Training

Pre-requisites to enter into Truck Driving

Employers typically establish their own standards for hiring and may require a combination of secondary school level of education and work experience. Other requirements are:

- Class 3 commercial license to operate vehicles with more than two axles
- Class 1 driver's license for trucks with semi-trailers
- Air Endorsement to operate a truck with air brakes
- Drivers must be a minimum of age 18 to acquire a Class 3 and age 19 to obtain a Class 1
- May need to pass a standard drug test and participate in ongoing drug and alcohol testing programs
- A good driving record and no criminal history
- The ability to read and write English fluently
- Transportation of Dangerous Goods(TDG) for drivers who transport hazardous materials
- Certain employers may require other Industrial Worksite Training to be obtained by employee, depending on area of employment

Sources

- www.workbc.ca/Job-Seekers/Industry-Profiles.aspx
- www.icbc.com/driver-licensing/types-licences/Pages/Get-your-commercial-driver-licence.aspx

Career Planning Tools

Do you know what you want to do for a career? Are you attending high school? Or just coming out of high school? Are you looking for something more than just a job?

The following resources can help you learn and decide what career path will fit you best. Any of these resources can help you decide if any of the above occupation profiles could be the right fit for you.

If you are currently in high school and want to start planning your career path, visit your school counsellor for guidance and direction to make the best decision for you and your labour market. Your local high school may offer a dual credit program that can help you get started on the trade of your choice. You can also visit the following websites to help you map out your future:



tools

Career Cruising / careercruising.com

On Career Cruising you can use many of their online products to help launch you in the right direction of your career. This site uses innovative career exploration to help match you with your dream career. To access the site, simply go to the website link and use the following login information:
Username: **employmentconnection**
Password: **careers**

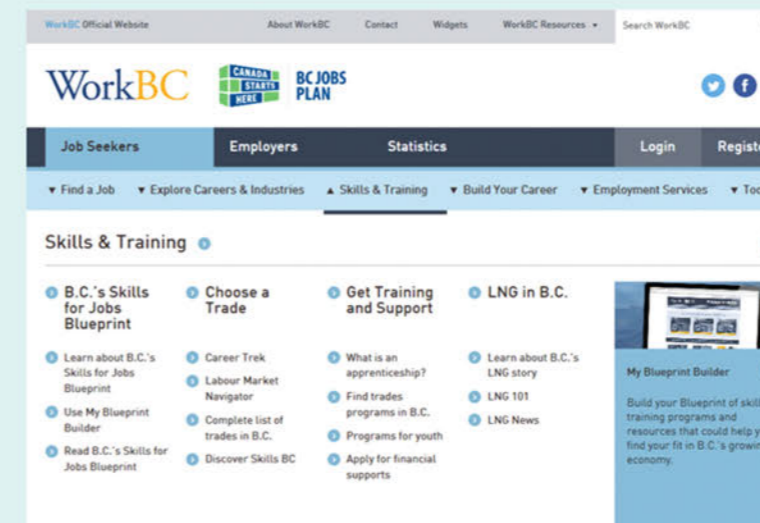
Your Local WorkBC Job Search Centre / www.employmentconnections.bc.ca

Your local WorkBC Job Search Centre can offer you supports from job searching, to eligibility for financial assistance in your job search and training, to up-to-date information on the local labour market. Check out this resource online or in person to help you plan your career.

WorkBC / workbc.ca

On the WorkBC site you can access labour market information for any career in B.C. The many resources available include:

- **Find a Job:** your tool to search B.C.'s most comprehensive job search databases
- **Labour Market Navigator:** Search by region, occupation, or industry to uncover important labour market information including wage, unemployment rate, skills required and other occupational information.
- **Career Trek:** Explore careers that you may be interested in. Trek through videos, maps, Skills, and specific careers to learn what it's like to be in an occupation you might be interested in.
- **Blueprint Builder:** Find the skills training resources you need to find your fit. Explore options from high school to post-secondary as well as potential employers. Use the Blueprint Builder to find LNG related trades that fit you.



Northern Opportunities / northernopportunities.bc.ca

Northern Opportunities is an innovative Northeastern B.C. partnership that unites Fort Nelson, Peace River North, and Peace River South School Districts, Northern Lights College, First Nations, industry and your community with a common goal: to provide young people with a seamless learning pathway from secondary school to post-secondary training leading to career success. Programs combine high school, college studies and work-based training enabling you to simultaneously earn your high school diploma and advanced credit in post-secondary and/or industry certification.

ITA / itabc.ca

ITA is your link to the trades world. ITA works with employers, employees, industry, training providers, and government to issue credentials, manage apprenticeships, set program standards, and increase opportunities in the trades in B.C. ITA has recently launched an innovative recruitment tool designed to position the trades as an exciting post-secondary option, and a viable alternative to university, among B.C. students, career counsellors and parents. The guide offers a unique and highly visual overview of opportunities in the skilled trades across B.C. This 2014 Trades Guide provides graphs and diagrams about how apprenticeship works in the province and the steps needed to get started as an apprentice. For the full Trades Guide see: http://makeisawesome.com/ITA-2014_Viewbook_Final_INTERACTIVE_PDF.pdf

To download An Action Plan for LNG Trades Training pdf visit:
http://www.itabc.ca/sites/default/files/docs/Trades-Training/ITA_LNG%20Action%20Plan_Sept10.pdf

Industrial Worksite Training

Various work environments and occupations require specific safety qualifications.

Depending on your working environment, you may require one or more of the certificates outlined in this section.

These courses may be arranged through your employer but in many cases the employer looks favourably upon those employees who have already obtained the required certification.

In this section you will find the main industry worksite training certificates that are required for the occupations listed in this resource guide.



TRAINING

OCCUPATIONAL FIRST AID LEVEL 1 (OFA LEVEL 1)

Valid for	3 years
Prerequisites	Be at least 16 years of age. Be medically and physically apt to perform full movement in First Aid related activities.
Brief description	Provides training in basic first aid skills including C-spine control, respiratory and circulatory emergencies, soft tissue injuries, identification and management of stroke, diabetes, seizures, and fainting. The course includes the use of automated external defibrillator (AED) training.
Length of course	8 hours
Offered at	Northern Lights College (Fort St. John, Fort Nelson), St. Johns Ambulance, Trojan Safety (Fort St. John), JT Safety, Mountainview Safety (Dawson Creek).

PETROLEUM SAFETY TICKET

Valid for	3 years
Prerequisites	None
Brief description	Petroleum Safety Training (PST) is an introductory online course for new hires to the petroleum industry or a refresher for experienced workers, supervisors and managers. The course provides a general introduction and overview of health and safety hazards and how to control them. It discusses the legal framework that employers must follow and focuses on workers' and employers' responsibilities with respect to health and safety at work.
Length of course	4-5 hours
Offered at	Northern Lights College (Fort St. John, Fort Nelson), St. Johns Ambulance, Trojan Safety, Enform (Fort St. John), JT Safety, NLC, Mountainview Safety (Dawson Creek)

Industrial Worksite Training / cont...

SAFETY
training

H2S ALIVE

Valid for 3 years**Prerequisites** Be medically and physically apt to "drag" an adult in practising an emergency evacuation situation. Wear durable and modest clothing. Donning and doffing a Self-Contained Breathing Apparatus (SCBA) in practise.**Brief description** This course is intended for all workers in the petroleum industry who could be exposed to hydrogen sulphide (H2S). The course covers the physical properties and health hazards of H2S, how to protect oneself, and basic rescue techniques. Each student is required to operate a self-contained breathing apparatus, a detector tube device, and participate in CPR and rescue lift and drag exercises.**Length of course** 8 hours**Offered at** Northern Lights College (Fort St. John, Fort Nelson), Alpha Safety, Trojan Safety, Echo Safety, St. Johns Ambulance (Fort St. John), JT Safety, Mountainview Safety (Dawson Creek)

TRANSPORTATION ENDORSEMENT

Valid for 3 years**Prerequisites** Occupational First Aid Level 1 (OFA LEVEL 1)**Brief description** The major goal of this program is to assist students in developing more confidence and competence providing first aid treatment and to help them deal successfully with medical emergencies. The course provides the student with the essential knowledge and skills required to provide first aid and to prepare a person for transport when advanced medical help arrives.**Length of course** 8 hours**Offered at** St Johns Ambulance, Alpha Safety, Trojan Safety (Fort St John), JT Safety, Mountainview Safety (Dawson Creek)

TRANSPORTATION OF DANGEROUS GOODS (TDG)

Valid for 3 years**Prerequisites** None**Brief description** This course is intended for anyone who handles, ships or receives, transports or offers a consignment for transport. Your safety training begins with an understanding of the federal law and who can enforce dangerous goods laws. You will learn how dangerous goods are classified under the international system, safe packaging requirements and how to protect yourself from hazards by familiarizing yourself with safety marks such as placards and labels. Filling out a shipping document is also part of the dangerous goods course.**Length of course** 4-8 hours**Offered at** Northern Lights College (Fort St. John, Fort Nelson), Alpha Safety, Trojan Safety (Fort St. John), Echo Safety, JT Safety, Mountainview Safety (Dawson Creek)

AIR BRAKE ENDORSEMENT

Valid for No expiration**Prerequisites** Valid Class 5 or Class 7 B.C. Driver's License, with no outstanding charges.**Brief description** Covers the basic functions of air brake systems, their maintenance and service. Students require this safety course, and then take a knowledge and pre-trip inspection test from ICBC to achieve the endorsement. Students may receive credit for pre-inspection test if they pass the course.**Length of course** 20 hours or 3 days**Offered at** Northern Lights College (Fort St. John, Fort Nelson), Safety First, The Patch, BC Transport Training, Safe Start, Mountainview Safety (Dawson Creek),

Industrial Worksite Training / cont...

WHMIS

Valid for Permanent / Employer to update every year

Prerequisites No Expiration

Brief description Whether you work with or near a controlled substance (any chemical including bleach), WHMIS training is required by all workers across Canada. In this course you will learn about your employer's, co-workers' and your responsibilities under the law, what to do in an emergency with the specific chemicals at your worksite, and ensuring suppliers of chemicals meet shipping requirements. WHMIS training takes a common sense approach to workplace health & safety. Course involves interactive lecture material, video and practical exercises.

Length of course 4-9 hours

Offered at Northern Lights College (Fort St. John, Fort Nelson), Alpha Safety, Echo Safety, JT Safety, Trojan Safety (Fort St. John), Mountainview Safety (Dawson Creek)

Additional Industrial
Worksite Training

Additional industrial worksite training that may be required for your occupation or by the employer includes:

- ATV Safety
- Bear Aware
- Confined Space
- Fall Arrest

Post-Secondary
Funding Options

If finances are a barrier to your success in post-secondary training, there are many options you may be eligible for.

Canada-B.C. Job Grant

The Canada-BC Job Grant is a cost sharing program that helps employers offset the cost of training for new or current employees. The grant helps British Columbian's gain the skills they need to fill available jobs; it helps employers invest in their workforces. Visit www.workbc.ca/canadabcjobgrant for more information.



funding

There are funding options from a variety of sources including:

- Northern Lights College: www.nlc.bc.ca/Admissions/FinancialAssistance.aspx
- Scholarships Canada: www.scholarshipscanada.com
- Provincial Government of BC: www.studentaidbc.ca
- Aboriginal Learning Links: www.aboriginallearning.ca
- Student Awards: www.studentawards.com
- UNBC Youth in Care Grant: <http://www.unbc.ca/news/35148/new-youth-care-tuition-waiver>

High School Students:

- School District 59: www.ccsd59.org
- School District 60: www.prn.bc.ca
- School District 81: www.sd81.bc.ca

The WorkBC site also offers information on funding options:

- <http://www.workbc.ca/Job-Seekers/Build-Your-Career/Planning-Your-Career/Getting-the-Right-Education/Finance-Your-Education/Scholarships,-Bursaries-and-Loans.aspx>

You can also visit your local WorkBC office to check eligibility criteria for post-secondary training, or go online and check industry sector organizations and

service organizations such as Rotary Clubs and major employers in your region. They may also provide education funding.

UPCOMING PROJECTS

Site C Dam

CLEAN ENERGY PROJECT

Employment

The construction of Site C Dam would create:



of direct employment during construction of the dam.



of employment through all stages of development and construction.



directly related to the day to day operations of the dam.

Additional employment would result from sustaining investments in the project such as refurbishment and/or replacement of project components over the life of the project.

BC Hydro's Site C Clean Energy Project is a proposed third dam and hydroelectric generating station on the Peace River in Northeast B.C.

Project Overview

- The dam would provide 1,100 megawatts (MW) of capacity, and produce about 5,100 gigawatt hours (GWh) of electricity each year — enough energy to power the equivalent of about 450,000 homes per year in B.C.
- As the third project on one river system, Site C would gain significant efficiencies by taking advantage of water already stored in the Williston Reservoir. This means that Site C would generate approximately 35 per cent of the energy produced at W.A.C. Bennett Dam, with only five per cent of the reservoir area.
- Site C requires environmental certification and other regulatory permits and approvals before it can proceed to construction. In addition, the Crown has a duty to consult and, where appropriate, accommodate Aboriginal groups.

Key Project Design Components

- An earth fill dam, approximately 1,050 meters long and 60 meters high above the riverbed.
- A generating station with six 183 MW generating units.
- An 83-kilometre-long reservoir that would be, on average, two to three times the width of the current river.
- The realignment of up to six segments of Highway 29 over a total distance of up to 30 kilometers.
- Shoreline protection at Hudson's Hope.
- Two new 500 kilovolt AC transmission lines that would connect the Site C facilities to the existing Peace Canyon Substation, along an existing right-of-way.
- Access roads in the vicinity of the site and a temporary construction access bridge across the Peace River at the dam site.
- Construction of two temporary cofferdams across the main river channel to allow for construction of the earth fill dam.
- Worker accommodation at the dam site, with other workers being housed off site and in the region.

For more information about the Site C Project visit: www.sitecproject.com

Economic Activity



APPROXIMATELY CONTRIBUTED TO REGIONAL GDP



CONTRIBUTED DURING CONSTRUCTION TO PROVINCIAL GDP

Government Revenues

- During construction, Site C would result in a total of \$40 million in tax revenues to local governments and, once in operation, \$2 million in revenue from grants-in-lieu and school taxes.
- Activities during construction would result in approximately \$179 million in provincial revenues, and approximately \$270 million for the federal government.
- The Province would receive annual water rentals amounting to approximately \$35 million per year.
- A regional legacy benefits agreement would provide \$2.4 million annually to the Peace River Regional District and its member communities for a period of 70 years, starting when Site C is operational. The annual funding would be indexed to inflation.



Anticipated In-Demand Occupations

- Boilermakers
- Carpenters
- Commercial Divers
- Cement Mason/Concrete Finishers
- Electricians and Winders
- Elevator Mechanics
- Heavy Duty Mechanics
- Heavy Equipment Operators
- Instrumentation and Control Technicians
- Insulators
- Ironworkers
- Industrial Labourers
- Millwright/Machinists
- Painters
- Piledrivers
- Pipefitters
- Plumbers

UPCOMING PROJECTS

LNG Pipeline

PROJECT

Natural gas is the largest energy source used in Canadian homes. It is also used in manufacturing plants to generate electricity, and fuel in heavy-duty trucks.

What is LNG?

- LNG is the Acronym for Liquefied Natural Gas
- LNG is natural gas chilled to -160 degrees Celsius so that it can be converted into a liquid form. After it has been liquefied, natural gas is compressed so it takes up much less space – approximately 1/600th less than natural gas.
- Once compressed, LNG gas can be loaded on to specially equipped ships and transported overseas for sale into export markets. LNG is odourless, non-toxic, non-corrosive and less dense than water. If a spill were to occur, the natural gas would warm and evaporate, leaving no substances behind.

Economic Development & Jobs

It is expected that B.C.'s LNG industry will:

- \$150 BILLION** Generate \$150 billion in tax revenue for the federal government.
- \$1 TRILLION** Contribute up to \$1 trillion to the province's gross domestic product.
- 100,000 JOBS** Create 100,000 direct, indirect and induced LNG-related jobs.

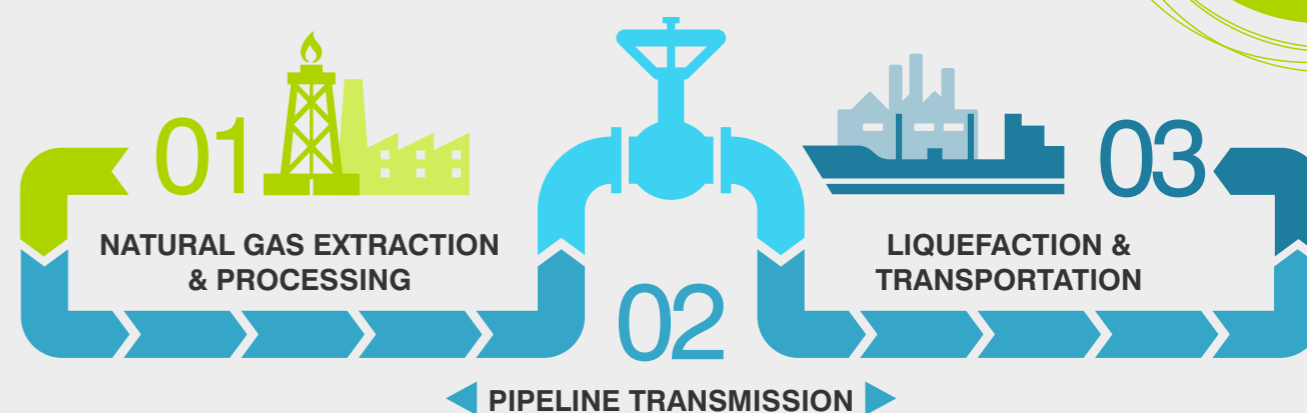
For more information about the LNG Pipeline visit:

- www2.gov.bc.ca and search LNG; and/or
- www.workbc.ca and search LNG in BC, LNG Forecast, and BC LM Outlook

projects

Stages of LNG

There are three main stages to the LNG projects: Upstream Activity, Pipeline Activity, and Liquefaction and Transportation. Though all three stages will open employment opportunities, we will see the most opportunity and growth in the Northeast during the first and second stages.



01 Natural Gas Extraction & Processing (Upstream Activity)

Extraction and processing is the initial step in the LNG chain. After successful exploration, wells are drilled to extract natural gas. The raw gas is then transmitted by pipelines into processing plants where gas is separated from liquids and impurities to produce "pipeline-quality" natural gas. Examples of some of these activities, which typically occur in Northeast B.C., are Apache's upstream activities for the Kitimat LNG project, Shell's Groundbirch project, and Progress Energy's activities in Montney.

02 Pipeline Transmission (Pipeline Activity)

The final step in the LNG chain before shipment is liquefaction. The liquefaction process involves removal of certain impurities such as acid gases, water, and heavy hydrocarbons that could cause difficulty handling LNG downstream. The natural gas is then condensed into a liquid at close to atmospheric pressure by cooling it to approximately -162°C. The liquefied natural gas (LNG) is then stored in large tanks and safely loaded onto ships for transport overseas. Most liquefaction plants in B.C. are likely going to be in Prince Rupert (Aurora LNG, Imperial Oil/ExxonMobil Canada, Woodside LNG), Port of Prince Rupert (Pacific NorthWest LNG and Prince Rupert LNG), and Kitimat (Douglas Channel Energy, Kitimat LNG, LNG Canada, and Triton LNG).

03 Liquefaction & Transportation (Final Step)

The final step in the LNG chain before shipment is liquefaction. The liquefaction process involves removal of certain impurities such as acid gases, water, and heavy hydrocarbons that could cause difficulty handling LNG downstream. The natural gas is then condensed into a liquid at close to atmospheric pressure by cooling it to approximately -162°C. The liquefied natural gas (LNG) is then stored in large tanks and safely loaded onto ships for transport overseas. Most liquefaction plants in B.C. are likely going to be in Prince Rupert (Aurora LNG, Imperial Oil/ExxonMobil Canada, Woodside LNG), Port of Prince Rupert (Pacific NorthWest LNG and Prince Rupert LNG), and Kitimat (Douglas Channel Energy, Kitimat LNG, LNG Canada, and Triton LNG).



UPCOMING PROJECTS

How will the LNG Pipeline boost job growth?

DIRECT WORKFORCE DEMAND OF THE TOP TEN OCCUPATIONS FOR LNG BY 2018

Occupations	Demand
Construction Trades Helpers & Labourer	11,800
Steamfitters & Pipefitters	3,800
Welders	2,200
Concrete Finishers	1,500
Transportation Truck Drivers	1,500
Carpenters	1,400
Heavy Equipment Operators	1,110
Gasfitters	1,100
Purchasing Agents & Officers	875
Care Operators	800

ESTIMATED DIRECT AND INDIRECT CONSTRUCTION WORKFORCE DEMAND 2014-2023

Year	Direct Downstream	Direct Midstream	Direct Upstream	Direct	Indirect	Direct & Indirect Total
2014	0	0	0	0	0	0
2015	1,100	1,560	690	3,300	4,500	7,900
2016	4,340	4,310	2,800	11,400	12,300	23,800
2017	9,060	7,870	5,700	22,600	20,200	42,800
2018	14,690	11,420	5,540	31,700	27,000	58,700
2019	13,090	7,780	6,180	27,000	21,700	48,500
2020	12,720	4,660	6,470	23,900	24,600	48,500
2021	14,780	4,910	9,830	29,500	25,400	54,900
2022	16,840	5,160	7,920	29,900	26,300	56,200
2023	11,410	4,260	4,430	20,100	8,100	28,200

ESTIMATED DIRECT AND INDIRECT OPERATIONS WORKFORCE DEMAND 2014-2023

Year	Direct Downstream	Direct Midstream	Direct Upstream	Direct	Indirect	Direct & Indirect Total
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	80	20	380	500	0	500
2019	160	50	770	1,000	4,900	5,800
2020	300	70	1,360	1,700	4,900	6,600
2021	440	100	1,950	2,500	6,500	9,000
2022	700	130	3,170	4,000	6,700	10,700
2023	920	150	4,210	5,300	18,500	23,800

Resource Directory

Resource Name	Information	Website/Contact
Alpha Training	Fort St. John Industrial Worksite Training	www.alpha-training.ca
BC Institute of Technology	BCIT programs are developed to ensure that you'll be at the forefront of the latest developments in your industry.	www.bcit.ca/energy
BC Transport Training	Dawson Creek Truck Driver Training	34-9700 18 Street Dawson Creek, BC 250-784-1603
BC Safety Authority	BC Safety Authority is mandated to oversee the safe installation and operation of technical systems and equipment.	www.safetyauthority.ca
Careers In Oil and Gas	Search job postings, build your career, and learn labour market information to better solidify your career in the oil & gas industry.	www.careersinoilandgas.com
Dawson Creek Catholic Social Services Society	Dawson Creek WorkBC Employment Services Centre	www.jobsearchonline.bc.ca
Echo Safety	Dawson Creek Medical, Safety and Training Services	www.echomstinc.com
Employment Connections	Fort St. John WorkBC Employment Services Centre	www.employmentconnections.bc.ca

Resource Name	Information	Website/Contact
Fort Nelson Employment Services	Fort Nelson WorkBC Employment Services Centre	www.fortnelsonemployment.ca
Health Match BC	A free health professional recruitment service funded by the Government of BC.	www.healthmatchbc.org/Health-Career-Directory/Browse.aspx
HR Petroleum Council	The Council is designed to help the oil & gas industry attract, develop and retain skilled talent.	www.petrohrsc.ca
Industry Training Authority	ITA is the Industry Training Authority for apprenticeships	www.itabc.ca
JT Safety	Dawson Creek Industrial Worksite Training	www.jtsafetytraining.ca
Metis Nation BC	Métis Nation British Columbia develops and enhances opportunities for our Métis Chartered Communities and Métis people in British Columbia by providing culturally relevant social and economic programs and services.	www.mnbc.ca/about-mnbc
Mountainview Safety Services Ltd.	Dawson Creek Industrial Worksite Training	www.mountainviewsafety.com
Northern Lights College	Northern Lights College offers a diverse range of courses, programs, to ensure your successful transition from high school to post-secondary education to a successful career.	www.nlc.bc.ca

Resource Directory / cont...

Resource Name	Information	Website/Contact
Northern Opportunities	Northern Opportunities provides young people with a seamless learning pathway from secondary school to post-secondary training leading to career success.	www.northernopportunities.bc.ca
Safety First	Fort St. John Truck Driving Training	10412 113 Avenue Fort St John, BC 250-263-2964
St. John's Ambulance	Canadian Industrial Worksite Training	www.sja.ca
Taylor Professional Driving	Taylor Truck Driving Training	www.taylorprofessionaldriving.com
The Patch Driver Development	Fort St. John Truck Driving Training	www.patchdriverdevelopment.ca
Thompson Rivers University	TRU offers a diverse range of courses, programs, and delivery to ensure you're successful in post-secondary education.	www.tru.ca
Trojan Safety	Fort St. John Industrial Worksite Training	www.trojansafety.com
Welcome BC	Find all of the information you need to know to live, immigrate, and work in BC.	www.welcomebc.ca/Work/find-a-job/occupational-guides.aspx
WorkBC	Search the comprehensive job board or use up-to-date labour market information to help guide your education and career path.	www.workbc.ca

General Contact Information

Employment Connections | WorkBC Employment Services Centre
 #101 - 9907 99 Avenue, Fort St. John, BC V1J 1V1
 Tel: 250-787-0024 | Toll Free: 1-855-987-0024
www.employmentconnections.bc.ca

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- BC Centre of Excellence
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- Community Futures of Peace Liard
- District of Chetwynd
- District of Tumbler Ridge
- Employment Connections | WorkBC Employment Services Centre
- Encana
- Enform BC
- Fort Nelson Chamber of Commerce
- ITA (Industry Training Authority)
- Metis Nation British Columbia
- NENAS (North East Native Advancing Society)
- Northeast Regional Training Plan Committee Members
- Northern Health Authority
- Northern Rockies Regional Municipality
- North Peace Economic Development Commission
- Peace River Regional District
- School District #60
- Shell Canada
- Spectra Energy
- Treaty 8 Tribal Association
- UNBC (University of Northern British Columbia)