

# Nuclear Operator

REALISTIC JOB PREVIEW

Bruce Power is looking for career-driven, skilled and energetic people who want to work in a dynamic and innovative company. The job of a Nuclear Operator is unique and challenging, and is the first step towards many other roles within Bruce Power. Learn more about this career opportunity and find out if becoming a Nuclear Operator is right for you.

## Join our Operations team

At Bruce Power, Nuclear Operators play a key role in keeping the stations running safely and reliably. We're looking for skilled and energetic individuals ready to take on this unique challenge.

**“Working as a Nuclear Operator at Bruce Power means being part of a highly skilled, close-knit team that supports one another while operating one of the largest nuclear facilities in the world. The role offers continuous learning, meaningful responsibility, and clear opportunities for growth — balanced with predictable schedules and flexibility that support life outside of work. Every shift contributes directly to site priorities, long-term station success, and the future of clean energy in Ontario.”**

**TYLER SEARLE**  
Section Manager,  
Bruce B Operations



## Bruce Power — Powering Ontario forward

Established in 2001, Bruce Power is Canada's only private sector nuclear generator, safely delivering clean, reliable nuclear power to families and businesses across Ontario and cancer-fighting medical isotopes used around the world.

At Bruce Power, you will experience the meaningful work of advancing Ontario's clean energy future and

medical isotope innovation while contributing to a culture of excellence. Step into an inclusive and dynamic environment that values collaboration, encourages bold ideas and empowers you to make a real difference.

Be a part of the team — our future is bright!

## Table of Contents

- 4 Overview of the hiring process
- 6 My career in Operations
- 8 What does a typical day look like?
- 10 Additional job details
- 11 Your career path
- 12 Other key aspects
- 14 Is this the right career for me?
- 15 The future is nuclear

**Limitless  
opportunities.  
Meaningful work.  
Innovative energy.**





# Overview of the hiring process



## Step 1: Vacancy

A vacancy is advertised. Applicants must submit an application online at [brucepower.com/careers](https://brucepower.com/careers). Applicants must be eligible to work in Canada.

## Step 2: Review

Applicants will be reviewed to determine if they meet the following criteria:

- A Grade 12 diploma from a Secondary School that includes Grade 12U (university preparation) mathematics, physics and chemistry, or Ontario Academic Course (OAC) credits in mathematics, physics and chemistry.
- Completion of a two-year College Technician or Technologist diploma program in Power Engineering, Marine Engineering, or other relevant discipline, or a Bachelor's Degree in Engineering, Science, or a related discipline, is preferred.

- Having relevant operating and/or CANDU experience is an asset.

As applicants progress through the selection process, they will be required to demonstrate they meet the educational requirements by providing transcripts and diplomas/degrees earned.

## Step 3: Interview

Candidates who are shortlisted will progress through a **two-step** interview process.

The **first** step is a virtual prerecorded interview, approximately 40 minutes in length, where selected candidates will record video responses to a set of standardized interview questions. These questions focus on motivation, role awareness and a mix of behavioural and technical topics. Candidates who are successful at this stage will be invited to the **second** step, a joint interview with Human Resources and Operations line leaders. This interview is

approximately 1.5 hours and includes both behavioural and technical questions designed to further assess job-related skills, decision-making and alignment with the role and organization.

The behavioural interview consists of a series of job-related questions and scenarios. The questions are behaviour-based (i.e., candidates are asked to provide examples of how they have dealt with various job-related scenarios in the past to demonstrate their competency).

All candidates are asked the same structured questions and evaluated against the same job-related criteria.

## Step 4: Discovery Day

As part of the Nuclear Operator in Training recruitment process, candidates may be invited to participate in a Discovery Day, a full-day, in-person experience designed to provide a realistic preview of the role while allowing assessors to observe job-relevant skills. The day includes a series of hands-on and team-based activities that reflect the type of work performed in Operations, such as mechanical problem-solving, following procedures to complete tasks and participating in group exercises that highlight communication, teamwork and human performance behaviours. Rather than relying solely on interviews or written assessments, Discovery Day focuses on practical application and real-time decision-making in a controlled, supportive environment. This approach ensures a fair, thorough evaluation while giving candidates a clear understanding of what it is like to work in Operations and what is expected of Nuclear Operators in Training

## Step 5: Selection

**A job offer is conditional on successfully passing the following:**

### SECURITY CHECKS

Working at a nuclear facility requires a very detailed security background clearance process. Applicants are subject to Canadian Security Intelligence Service,

Royal Canadian Mounted Police and Ontario Provincial Police background checks prior to site admittance. The security process can take approximately eight to twelve weeks to complete. Successful candidates will need to ensure their paperwork is completed in a thorough and timely manner.

### MEDICAL REQUIREMENTS

Applicants must complete a confidential medical information questionnaire.

### REFERENCE CHECKS

References of selected applicants will be contacted (we require a minimum of two supervisory references).



## Empowered workforce

A diverse workforce helps to ensure that we have varied and unique perspectives to achieve our business goals. Here at Bruce Power, we take immense pride in embracing individual viewpoints and fostering the kind of workplace where every employee is empowered to achieve their best.



# My career in Operations

**Bruce Power operates eight nuclear reactors, with four units at Bruce A and four at Bruce B. We generate enough clean, reliable electricity to meet over 30 per cent of Ontario's electricity needs.**

Although there are some minor differences between Bruce A and Bruce B, Nuclear Operators are essentially the same at both stations. There are three specializations, or streams, in the Operator family. Each new Operator is assigned to one of these streams at either station.

## **Stream 1 — Generating Units**

Operators control and monitor a nuclear reactor, steam-powered turbine generator and support systems to safely and efficiently produce electricity.

## **Stream 2 — Common Unit\***

Operators control and monitor equipment and systems critical to maintaining the safety of the generating units, common unit and fuel handling areas.

## **Stream 3 — Fuel Handling**

Operators safely handle and control the nuclear fuel for the generating unit reactors using the fuel handling machine and support systems and equipment.

*\*Common Unit is also known as Unit 0.*

During the selection process, candidates are assigned to a particular stream and station. Typically, once assigned to a particular station, Operators do not tend to move between streams or between stations.

## Orientation and training

Upon hire, candidates begin orientation and training, with most candidates working shift for the first three months before attending Nuclear Power School. Success requires the ability to be self-directed, to learn within short timeframes and to process lots of information. Until an Operator is qualified to work on their own, they will be accompanied by a more experienced Operator. Once qualified, they will work without such supervision.

Nuclear Operators are required to complete extensive classroom and computer-based courses. Training focuses on both the aspects of the job that are common across all streams and are specific to one particular stream. Common training is known as skills training in instrumentation and control, mechanical and electrical skills.

Periods of classroom and computer-based courses are balanced with on-the-job training, where trainees work under the guidance of an experienced Operator. Classroom and computer-based training will typically be more theoretical, while on-the-job training will involve the application of classroom learning.

## Training duration

New Operators will be placed in both general and stream-specific training courses, alternating with periods of shift assignment, which allows the trainee to relate the training to the job. Some streams may take longer to complete due to the nature of the material and the stream. Altogether, training may take up to two years to complete.

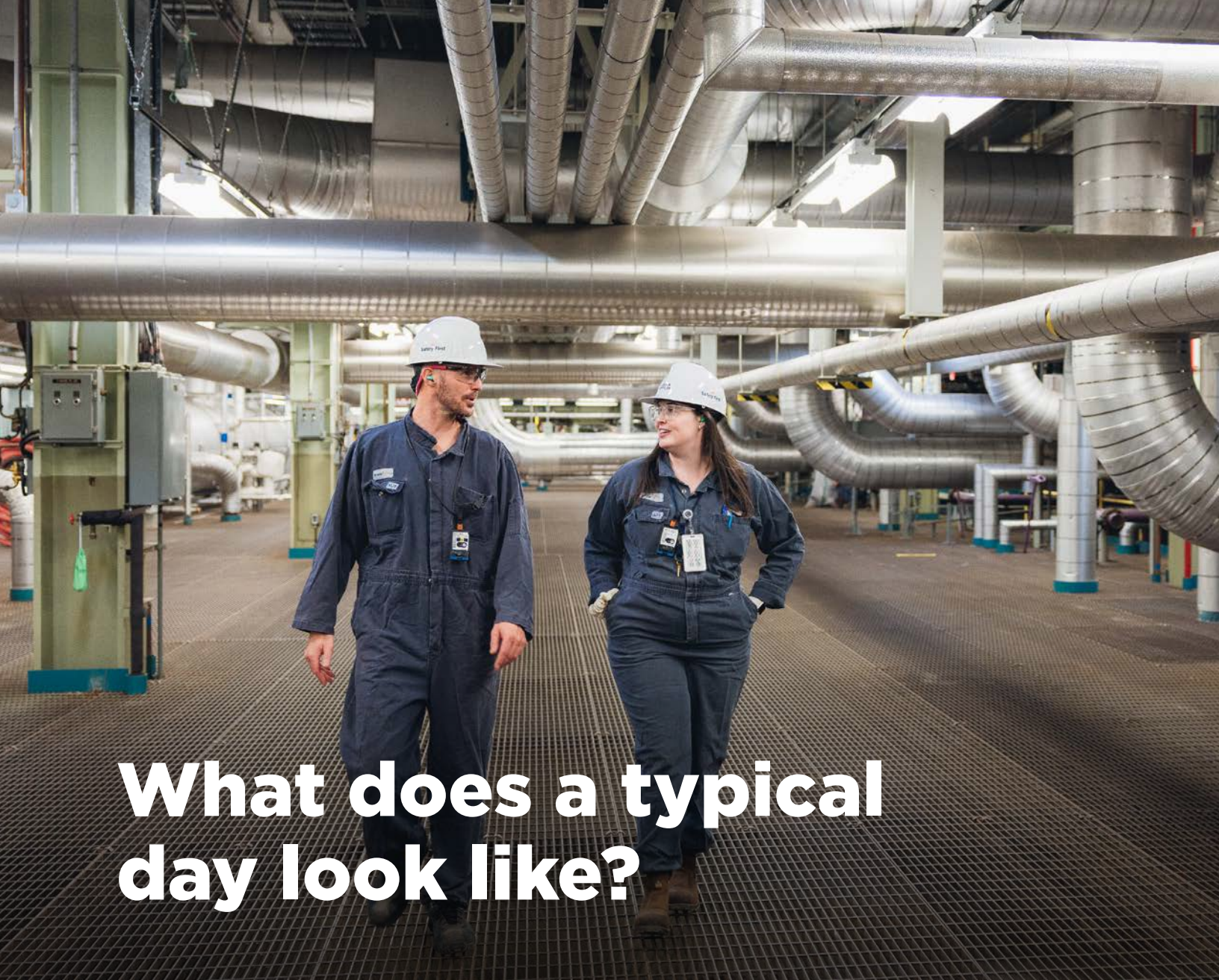
## Testing

Trainees are tested at every phase of their development. Classroom knowledge is evaluated using tests and exams. Applied knowledge (e.g., demonstrating proficiency in the field environment) is tested using Job Performance Measures (JPMs). An Operator is considered to be “stream qualified” upon successful completion of a series of both classroom testing and JPMs, and after demonstrating competency to their supervisors.

## Probationary period

The first six months of training are a probationary period for the new Operator. Mandatory union coverage and access to Bruce Power benefits, including pension plan enrolment, are provided during this period.





# What does a typical day look like?

It's a natural question, so we offer this broad description of the duties and other characteristics of an Operator's role. It is not meant to be exhaustive in its description but rather a summary of some of the key aspects of the job.

## **Job duties**

The primary function of an Operator is to work rotating shifts to support the safe, reliable operations of our stations. All staff are required to adhere to safety procedures at all times to proactively prevent workplace accidents and protect their own safety, the safety of others and the safety of plant equipment.

## **Equipment maintenance and surveillance**

A significant portion of an Operator's duties is to make rounds of their designated area within the plant to check and maintain the operating status of equipment and systems such as pumps, fans, motors and gauges. This type of work requires an Operator

to detect and rectify problems within their area of discretion. Operators apply the skills and system knowledge they gain through training to monitor the plant. This could mean monitoring and maintaining system pressure, temperatures, water levels and checking the integrity of the equipment.

Situations may arise where a problem, though not serious, requires immediate action. Upon detecting a problem, the Operator will contact their supervisor and the Control Room Operator with the nature of the deficiency. The response could range from taking some immediate actions to resolve the issue to documenting the deficiency for repair. All deficiencies and changes in equipment status will be logged by the operations staff in the official unit log as per regulatory requirements.



## Housekeeping and administration

During a shift, it may take several hours to complete routine inspections of equipment. Duties may include cleaning equipment and work areas, topping up liquid levels, ensuring equipment and work areas are safe, and requesting work on equipment from other groups, which requires the completion of specific documentation and procedures.

Administrative duties such as initiating work requests, material requests, record keeping, work reports and document corrections might also be required. Operators are required to use a computer to complete the majority of these administrative tasks.

## Testing and sampling

Testing equipment is a large part of an Operator's job. It may involve local or remote manipulation of equipment like valves and the start-up/shut down of fans and pumps to simulate certain operating conditions. It might also include drawing samples and, in some cases, after chemical technicians have conducted analyses, initiating corrective actions such as adding chemicals to maintain system specifications.

## Physically intensive duties

There are a number of physically intensive aspects to an Operator's job.

These may include:

- Working rotating shifts
- Working in confined spaces
- Working at heights and/or outdoors
- Manually removing equipment components
- Manually opening and closing large valves
- Manually carrying heavy loads
- Wearing personal protective equipment
- Wearing a breathing apparatus and a fully enclosed plastic suit



# Additional job details

Other important characteristics of the job include:

## Schedule

Operators are required to work shift and need to be flexible in their availability. There are various types of shift work at Bruce Power that will be applicable to new Operators. Most Operators work a set of rotating 12-hour shifts, and eight-hour day shifts are used for training.

Everyone is required to work weekdays, weekends and statutory holidays, day shifts and night shifts. A one-year schedule is set in advance and is balanced over the course of the year to average out to 40 hours per week. Typically, a period of two or three shifts on is followed by a similar time period off.

Working shift allows for greater flexibility throughout your work week. It also allows individuals to plan in advance as you know your crew shift for the year. This provides greater flexibility when planning lengthy vacations.

## Duties

Much of the Operator duties involve repetitive tasks. Variety is dependent upon plant conditions and work streams.

Opportunities for hands-on activities are limited because the systems are highly automated. However, because of the number of systems, job duties require exposure to a wide variety of systems.

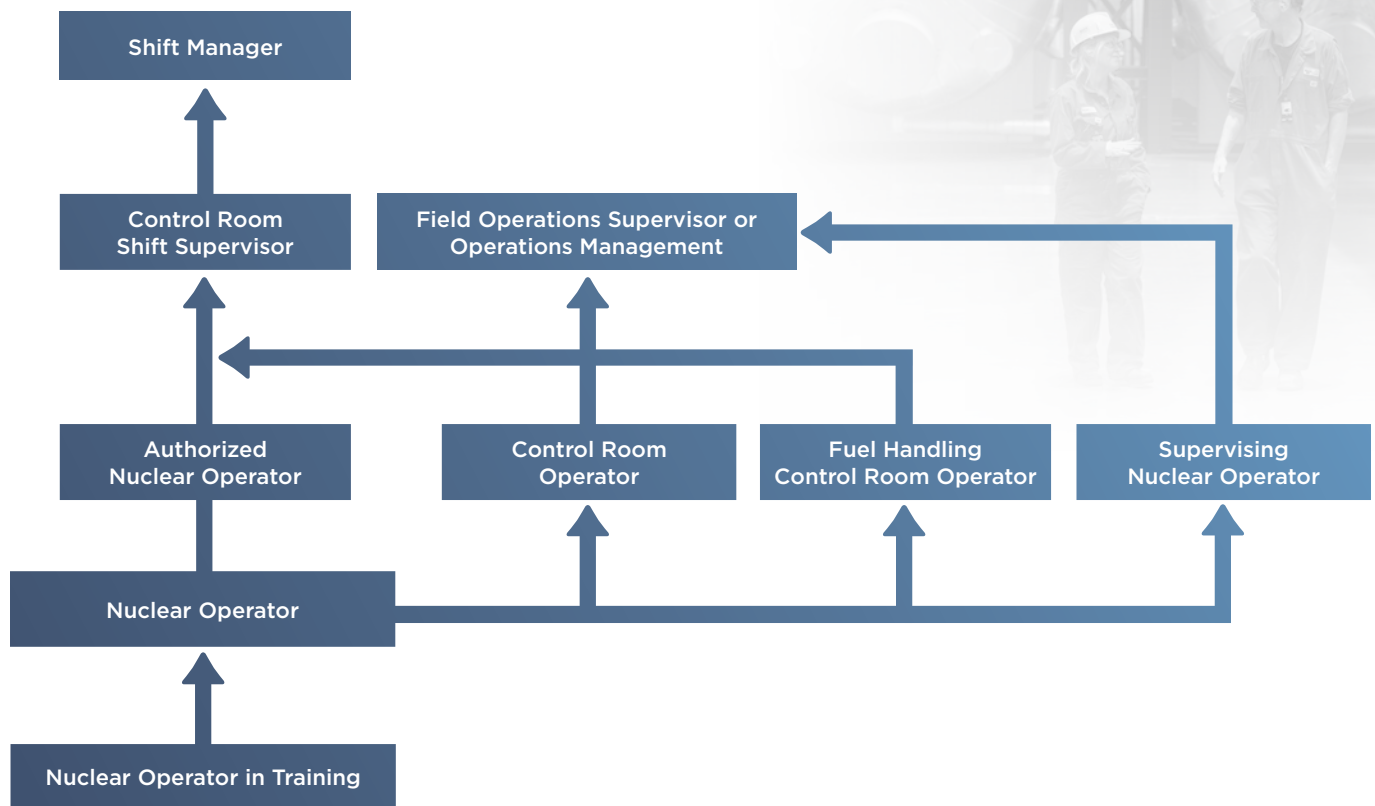
## Discretion and responsibility

Operators are responsible for the safety of personnel, the station and the community. This is accomplished through strict adherence to policies and procedures at all times. There is little discretion in the way tasks are carried out.

## Workload

Operators have a full workload during each shift. Each Operator is assigned a set of routine tasks to complete.

Upon completion of these tasks, additional work is assigned by supervisors for the balance of the shift. Operators in all streams have a steady workload all year round, though it can increase significantly during unit shutdowns.



# Your career path

## Training

Qualifications must be renewed or refreshed every one to three years depending on the task and stream. Qualifications can also be upgraded to broaden one's skill set. Operators will need to take an active role in monitoring their training needs.

## Career opportunities

Individuals can move to different positions at the same level in the organization (lateral move) or can move to higher positions (vertical move).

Lateral moves typically involve getting a position in one of the other Operator streams or moving elsewhere in the organization to non-Operator positions, which will require retraining. These moves will also depend on the availability of replacements for the Operator wanting to make the move.

Operators can move vertically into various supervising positions, including Supervising Nuclear Operator and Field Shift-Operating Supervisor. Interested individuals go through a selection process in which a candidate is reviewed based on meeting position requirements and their leadership abilities. Qualified Operators may also be considered for control room operating positions like Authorized Nuclear Operator or Control Room Operator.

These positions require extensive training above and beyond the training period required for the Operator position. Nuclear Operators don't become eligible for control room operating positions until they have demonstrated competency in the Nuclear Operator position for several years.



# Other key aspects

## Challenging and rewarding career

As an Operator, you have the opportunity to continually grow and learn. Operations can be rewarding in itself, but there is also opportunity for Operators to explore careers throughout the company.

## Pay and benefits

Pay and benefits are based on a union collective agreement; both are very competitive. There is an opportunity to progress within the Operator job family. Economic increases are negotiated between Bruce Power and the Power Workers' Union.

Your Total Rewards package will include health and dental benefits, pension, group life insurance, vacation, and short-term and long-term disability coverage. Employees may also be offered incentive payments contingent upon the company meeting its business commitments, including but not limited to safety targets, timelines and production targets.

## Commitment to safety

At Bruce Power, Safety First is our number one value. Whether protecting our people, the environment, or our neighbouring communities, we work 24 hours a day with safety at the forefront of everything we do.

## Job security

The amount of time dedicated to training Nuclear Operators makes them a valuable resource at Bruce Power. Bruce Power's Major Component Replacement Project will extend the life of the site for generations to come, providing opportunities for exciting long-term career prospects.

## Teamwork

Relationships can and do extend beyond the workplace. Given that Operators typically work within small groups, there is lots of opportunity to get to know your colleagues and work within a team environment.



# Safety First

BRUCE POWER'S NUMBER 1 VALUE

---

## Social responsibility

At Bruce Power, we have the privilege to contribute to the community, supporting the great work that is being done to improve lives, protect the environment, celebrate culture, encourage education and build healthy communities.

We are committed to a clean energy future and are also proud of our work in producing cancer-fighting medical isotopes for the global healthcare system.

## Small-town environment

Bruce Power is located on the eastern shore of Lake Huron near Tiverton, Ontario. The region provides the opportunity for lakeside living, a variety of outdoor activities in all seasons and good amenities, with none of the traffic or congestion issues found in larger centres. The area is also very family friendly, with good schools and ample social activities.

## Interesting work environment

At the start of a shift, Operators are provided with a pre-job briefing that details the activities to be completed on the shift and any hazards associated with that work. Union Team Leaders, Supervising Nuclear Operators and Field Shift-Operating Supervisors are easily accessible at all times.

Supervisors will periodically observe the execution of Operator duties, but they do not constantly monitor their work. Any additional non-routine work assigned by supervisors during the shift would be accompanied by an additional pre-job briefing. Typically, at the end of each shift, a debriefing of the shift's activities also takes place.

Operators work indoors for the majority of their shift under artificial light. The exceptions to this are the Common Unit/Unit 0 Operators — they work indoors and outdoors.

Operators may have to crawl into tight spaces, work in extreme temperatures and in areas with high noise levels. All Operators work at significant heights on grated flooring with 10-metre drops and from elevated platforms. Operators may also deal with strong odours during the course of some duties.

Operators are on their feet for the majority of their day moving through large portions of the station. Surveillance work requires walking around the station and climbing ladders and stairs. Personal protective equipment and safety clothing are worn, and additional protective gear may be required depending on the work being performed.

Operators work with equipment or containers that may contain hazardous materials such as radioactive materials and chemicals. However, hazardous materials are contained and highly monitored, minimizing the threat. Exposure to radiation is monitored at all times and is kept well below regulatory limits.

Protective equipment and clothing is available for duties that require them. Some of the equipment and clothing can be heavy, warm and restrictive. Operators should be comfortable being constrained for extended periods.



# Is this the right career for me?

The following factors are important for success and satisfaction as a Nuclear Operator. Use the list as a self-assessment guide to think about how well your skills match those necessary to be successful at the job.

## Can I...

- Direct my own learning (e.g., study independently during training)?
- Accept criticism about performance and make the required changes?
- Stay focused and attentive when doing repetitive tasks?
- Follow strict policies and procedures?
- Work with minimal supervision?
- Handle shift work?
- Stay alert, even during night shifts?
- Respond in a calm and effective manner when priorities change?

## Am I...

- Comfortable working in a controlled environment with hazardous chemicals or contaminated materials?
- Comfortable with radiation protection equipment (e.g., plastic suits, respirators) and personal protection equipment (e.g., footwear, hearing protection, gloves)?
- Interested in the mechanical, electrical and technical functioning of equipment?
- Detail-orientated?
- A conservative and methodical decision-maker?
- Capable of meeting the physical challenges of this job?

## Will I...

- Be safety conscious?
- Mind doing repetitive work?
- Mind working on jobs that involve other work groups?



# The future is nuclear

## Awards and recognition

We know your career is important to you. We are honoured to be recognized as a great place to work by a number of organizations and publications.



## Proud past, bright future

The Bruce Power site has a proud history of nuclear power generation. Now, with our multi-year Life-Extension Program, we're building on our expertise to invest in our assets, our communities and our province.

As part of the Life-Extension Program, Bruce Power is carrying out its Major Component Replacement (MCR) Project. The MCR Project began in January 2020 and focuses on the replacement of key reactor components in Units 3-8, including steam generators, pressure tubes, calandria tubes and feeder tubes.

The program will secure an estimated 22,000 jobs directly and indirectly from operations, and an additional 5,000 jobs annually through the investment program, injecting billions into Ontario's economy.

## About Bruce Power

Bruce Power is an electricity company based in Bruce County, Saugeen Ojibway Nation Territory, Ontario. We are powered by our people. Our 4,200 employees are the foundation of our accomplishments and are proud of the role they play in safely delivering clean, reliable nuclear power to families and businesses across the province and cancer-fighting medical isotopes used around the world. Bruce Power has worked hard to build strong roots in Ontario and is committed to protecting the environment and supporting the communities in which we live. Formed in 2001, Bruce Power is a Canadian-owned partnership of TC Energy, OMERS, the Power Workers' Union, and The Society of United Professionals.



[brucepower.com/careers](https://brucepower.com/careers)