

Chart of Competency

Power Station Operator

Electricity Human Resources Canada is a non-profit organization supporting the human resources needs of the Canadian electricity sector.

Our Vision

Keeping the lights on in Canada by preparing and empowering a world-class workforce for the entire electricity industry.

Our Mission

Working to strengthen the ability of the Canadian electricity industry in meeting current and future needs for their workforce—one that is safety-focused, highly skilled, diverse and productive.

Our Values

We are a values-driven organization, committed to the improvement of our sector, the growth of Canada's economy, and the stability of our power grid. Our core values are:

Collaboration

Working with all stakeholders in Canada's electricity sector for our mutual benefit.

Trust

Forging relationships and products built on unwavering integrity.

Innovation

Leading the industry to be future-ready.

Chart of Competency: Power Station Operator

This Chart outlines the competencies (also known as skills and knowledge) that are performed by Power Station Operators. For more details about each of these competencies, view the National Occupational Standard for Power Station Operators at electricityhr.ca

Occupational Definition:

Power Station Operators operate power generating equipment such as boilers, turbines and generators to convert the power created from primary energy sources (e.g. coal, natural gas, and water) into electricity. Power station operators monitor and control equipment and auxiliary systems from both the station floor (aka field) and control room(s) to ensure the equipment and systems are operating safely, efficiently, reliably and within the prescribed limits to meet regulatory requirements, achieve productivity and efficiency goals, and provide reliable electricity.

Major Category	Competency Area	Competency Unit						
Power Generation	Perform Power Station Routine Operation Duties	Inspect power generation equipment and systems	Perform operations-based tests	Respond to abnormalities				
	Operate Major Power Station Components	Operate power boilers and auxiliaries	Operate turbines, internal combustion engines and auxiliaries	Operate generators and auxiliaries	Operate hydro systems and auxiliaries			
	Operate Power Station Environmental Protection Systems	Operate station exhaust systems	Operate wastewater systems	Operate sump and dewatering systems	Operate aquatic life protection systems			
	Operate Power Station Auxiliary Systems and Equipment	Operate station service systems	Operate engineered safety systems	Operate auxiliary pressurized systems	Operate domestic and potable water systems	Operate chemical systems	Operate heating, ventilation and air conditioning (HVAC) systems	
	Operate Power Station Emergency and Standby Power Systems	Operate standby power generating systems	Operate uninterruptible power supply (UPS) system					
	Respond to Unexpected Events/ Incidents	Respond to unexpected events/incidents						
Construction and Installation	Assist with Commissioning of Power Generation Equipment and Systems	Assist with commissioning of power generation equipment and systems						
Transmission and Distribution	Operate Transmission System	Complete transmission switching	Operate switch yard					
	Operate Distribution System	Complete distribution switching						
Asset Maintenance	Maintain Generating, Distribution and Service Equipment	Perform preventative maintenance on power generation equipment						
	Assist with Power Generation Equipment Maintenance	Assist with power generation equipment maintenance						
Safety	Maintain a Safe Working Environment	Follow safe work practices	Use personal protective equipment (PPE)	Participate in safety meetings and emergency drills	Isolate component, equipment or system	Perform lock-out, tag-out procedures	Handle, transport and store hazardous materials	Work in confined spaces
		Use fall arrest equipment						
	Maintain a Sustainable Environment	Follow sustainable work practices	Contribute to wildlife mitigation practices					
	Respond to Emergencies	Respond to chemical spills and leaks	Respond to non-electrical emergencies	Participate in high-angle rescue	Participate in incident and accident investigations			
Security	Follow Security Practices	Follow security practices for physical work environment	Follow cybersecurity procedures					
Organizational Policies and Procedures	Follow Organizational Policies and Procedures	Follow organizational policies and procedures						
Information/Record Management	Complete Information/Record Management Tasks	Maintain technical information and data	Use information/ record management system for generation, transmission and distribution operations					
Information and Communication Technology Foundations	Use Digital Technology	Use communication applications	Use common software applications	Use navigation and mapping applications		Use digital mobile radios		
	Use Organization's ICT System	Use organization's ICT system						
Foundational Trades Skills	Perform Routine Trade Tasks	Use hand and power tools	Use electrical measuring and testing equipment	Use access equipment and work platforms	Operate vehicles and motorized equipment	Lubricate equipment and components	Perform rigging, hoisting/lifting and moving tasks	
Personal Competencies	Demonstrate Professionalism	Work as member of a team	Develop professionally	Demonstrate professional and ethical conduct	Mentor/coach others	Manage stress	Manage time	
	Communicate Effectively	Use active listening skills	Use speaking skills	Use hand signals	Use writing skills	Negotiate with internal and external stakeholders	Conduct meetings and presentations	Exchange information with internal and external stakeholders

National Occupational Standards (NOS)

NOS are voluntary guidelines that have been developed to provide businesses, educators, trainers, and job seekers with practical guidance.

How are NOS used?

Employers, employees, and educational institutions can put NOS to a wide variety of uses supporting effective workforce planning.

- Support personnel certification or accreditation programs
- Inform curricula for colleges and apprenticeships.
- Assist recruitment by informing job descriptions and providing a benchmark for employee appraisals.
- Identify career paths in order to promote employee retention.
- Help employers evaluate and determined the competencies of potential employees, including Internationally Trained Workers (ITWs).

Electricity Human Resources Canada has developed National Occupational Standards for a variety of occupations.

Visit electricityhr.ca for more information.