

Power Plant Engineer – Subsidiary 4

APS Benchmark Listings

Sub.No.	Bench- mark	Department	Working Title Job Title	Know-How				Creativity/ Problem Solving		Responsibility		Total Points
				Prof./ Cont.	Comp. Div.	H.R. Skills	Points	%	Points	Profile	Points	
Power Plant Supervisor 3rd Class (Point Range 269 - 313)												
004	046PP20	Infrastructure	Power Plant Supervisor 3 rd Class	D+	I	2	175	29	50	R1	57	282
Power Plant Engineer 3rd Class (Point Range 192 - 227)												
004	044PP18	Infrastructure	Power Plant Engineer 3 rd Class	D	I	1	132	25	33	R1	38	203
Power Plant Engineer 4th Class (Point Range 161 - 191)												
004	043PP16	Infrastructure	Power Plant Engineer 4 th Class	D-	I	1	115	25	29	R1	33	177

Last Review / Update: May 2024

Subsidiary 4

Benchmark Evaluation – 046PP20

Identification Section

Working Title:	Power Plant Supervisor
Department:	Infrastructure
Division, Branch/Unit:	Properties Division, Property Management Branch, Government Centre
Reports To:	Facilities Coordinator
Levels to D.M.:	6
Job Description:	046PP20
Minimum Recruitment Standard:	See Minimum Recruitment Standards for Power Plant Engineer
Job Code:	046PP – Power Plant Supervisor 3 rd Class

Comments on Role

Reporting to the Facilities Coordinator, the position is responsible for the operation and maintenance of a large array of heating and cooling equipment as well as emergency/backup generators that provide utility services to the government center complex.

Evaluation

Knowledge	Creativity / Problem Solving	Responsibility	Total Job Points
D+ 2 175	29% 50	R1 57	282

Comments on Evaluation

▪ Knowledge:

Professional/Content Knowledge:

The position requires Power Plant Engineer 3rd class certification and extensive related experience in the operation and maintenance of a variety of building mechanical equipment and systems including supervision of staff and contractors. Specific to this role is the regulated requirement for a Pool Operators certification for water treatment (chemicals). The D+ rating is supported given the additional administrative and contracting responsibilities.

Complexity and Diversity:

Position is responsible for the operations and maintenance of a large physical plant requiring the application of analytical skills in the planning, organizing, scheduling, coordination, and direction of activities.

Human Relations Skill:

This is a supervisory position responsible for assigning, scheduling, and reviewing work and providing guidance, training and expertise to 3rd and 4th class power plant engineers, as well as the supervision of contracted resources.

▪ Creativity/Problem Solving:

The position works with considerable independence within the designated scope for a 3rd class Power Plant Engineer and a framework of Federal and Alberta regulatory requirements and codes governing power plant operations, systems, and maintenance. As the operational expert is relied on to provide expertise and direction to staff and contractors; and to determine issues/concerns and put forth appropriate recommendations for resolution within the framework governing the work. The position evaluates needs of the operations and systems and recommends requirements for upgrades, replacement, major maintenance shutdowns as well as need for contracted resources. The position was not rated 33% as solutions are found within an established framework of trade certification/scope of work, regulations, and codes.

▪ Responsibility:

The position is responsible for the delivery of services to ensure the operations and maintenance of building systems and equipment.

Last Reviewed: April 2023

Subsidiary 4 Benchmark

Job Description – 046PP20

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

Reporting to the Facilities Coordinator the incumbent is responsible for the operation and maintenance of a large array of heating and cooling equipment as well as emergency/backup generators that provide utility services. This position is required to supervise a skilled unit of Power Plant Engineers.

Responsibilities and Activities

(The purpose of the job can be broken down in different responsibilities and end results. Each end result shows what the job is accountable for, within what framework and what the added value is. Normally a job has 4-8 core end results. For each end result, approximately 3 major activities should be described.)

Supervise the operation and maintenance of the heating and cooling plant components and other mechanical and auxiliary equipment within the assigned facility are operated and maintained in accordance with established policies, guidelines, and standards:

- Instruct, train, and assist subordinates. Perform annual performance agreements.
- Requisition materials, equipment, and parts. Maintain material inventories and authorize material purchases.
- Maintain records, certify timesheets, compose letters, and prepare reports.
- Ensure that preventative maintenance schedules are followed for physical plants.
- Investigate and recommend improvements to maintenance schedules.
- Identify, analyze, and recommend improvements to maintenance schedules.
- As a member of a 24-hour emergency response team, respond to emergency call backs.
- Working with a site wide BMCS ensure various utility delivery components operate efficiently and effectively.
- Provide for weekend checks of the boiler rooms and maintain logbooks according to ABSA regulations.

Oversee private sector contractors and consultants:

- Develop scope of work and/or specifications and supervise contracts related to the operation and maintenance of physical plant.
- Provide for contract administration for various projects that pertain to operating and maintaining the Power Plant.
- Work with various consultants relating to investigations and contract document preparations.

Operate and maintain plant auxiliary equipment:

- Cover-off vacations, statutory holidays.
- Compile logs, records, and files on plant operation.
- Recommend improvements to increase system efficiency and performance.

Operate and maintain a one million-litre pool and fountain operation:

- Provide to staff and contractors relating to maintaining water quality to standards as set by Alberta health Services.
- Ensure logbooks are maintained up to date relating to pool maintenance schedules and water treatment activities.

Other related duties.

Scope

(List specific information that illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Position supervises several positions that operate and maintain a large variety of heating and cooling equipment necessary to provide utility requirements to the entire site. Responsible for safe and efficient plant operation with minimum interruption and down time. Position provides direction, guidance and feedback to staff and contractors. Much of its contact is with staff for the purpose of guidance, training, and evaluation.

Knowledge, Skills, and Abilities

(Provide a list of the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others not only diplomas and degrees. Specific training if it is an occupational certification/registration required for the job.)

Qualifications:

A 3rd Class Power Engineering Certificate is required.

Knowledge:

- Government business plans, goals, strategies, and priorities as they relate to the Ministry and work area.
- Operations and maintenance procedures for heating and cooling systems and related auxiliary equipment.
- Building mechanical maintenance practices and approaches.
- Safe operation and maintenance of relevant tools and test equipment.
- Relevant provisions of legislation, regulations, directives, policies, and codes (e.g., ABSA regulations, mechanical system and equipment standards, Site Maintenance Manuals, *Occupational Health and Safety Act* and WHMIS regulations, First Aid and CPR standards, Code of Conduct and Ethics, *Freedom of Information and Protection of Privacy Act*).
- Relevant information, building management control, and maintenance management systems and business productivity tools (e.g., Microsoft Office, internet).
- Requires a working knowledge of boiler operation, HVAC (Heating, Ventilation and Air Control) systems, refrigeration systems, and other related physical plant systems.

Skills and abilities:

- Written and verbal communication skills, including ability to articulate technical issues and solutions.
- Interpersonal skills to interact positively with facility users, clients, contractors, and co-workers.
- Organizational and time management skills, including ability to prioritize multiple and competing requests for action.

- Problem solving skills.
- Plan and prioritize work, multitask, and function effectively within a dynamic work environment.
- Maintain focus on maintaining asset value while coordinating delivery of results at the operational level.
- Functional independently as well as contribute within a team environment.
- Demonstrate initiative, sound judgment, flexibility, creativity, and attention to detail and accuracy.
- Demonstrate commitment to confidentiality, diplomacy, client service and continuous improvement.

Contacts

(The main contacts of this position and the purpose of those contacts.)

Regular and ongoing contact with:

- Facility users and clients to respond to work requests and issues relating to facility conditions, exchange information, organize service delivery, and communicate during interruption of services.
- Representatives of Alberta Infrastructure and other departments to exchange information, respond to requests, and resolve issues.
- Contractors and suppliers to clarify requests, monitor work, and exchange information.
- During major events the general public may be involved.

Supervision Exercised

Supervises Power Plant Engineer 3rd Class and Power Plant Engineer 4th Class.

Subsidiary 4 Benchmark Evaluation – 044PP18

Identification Section

Working Title:	Power Plant Engineer 3 rd Class
Department:	Infrastructure
Division, Branch/Unit:	Properties Division, Property Management Branch, Government Centre
Reports To:	Power Plant Supervisor
Levels to D.M.:	7
Job Description:	044PP18
Minimum Recruitment Standard:	See Minimum Recruitment Standards for Power Plant Engineer
Job Code:	044PP – Power Plant Engineer 3 rd Class

Comments on Role

This position functions independently with minimum supervision on a shift. Plant equipment operated and maintained includes boilers, a heating plant, compressed air, refrigeration units, reverse osmosis systems and associated equipment. Position is also required to operate an electronic building management control system.

Evaluation

Knowledge	Creativity / Problem Solving	Responsibility	Total Job Points
D I 1 132	25% 33	R1 38	203

Comments on Evaluation

- **Knowledge:**

Professional/Content Knowledge:

Position is a full working level Certified Power Plant Engineer 3rd Class with knowledge of the operations and maintenance/repair of boilers, HVAC, refrigeration systems and other related physical plant systems within its assigned operation. Must understand safety operations and have comprehensive knowledge of governing legislation, regulations, policies, and Codes. The position is rated “D” recognizing it is a full working level role. It is not rated D+ as it reports to a Power Plant Supervisor and does not have administrative responsibilities.

Complexity and Diversity:

The position functions independently applying technical skills and knowledge to the ongoing operations and maintenance of the systems. The position also coordinates work with other staff members and

contractors, as necessary.

Human Relations Skill:

Interactions are technical in nature exchanging/gathering information and receiving direction from the supervisor.

▪ **Creativity/Problem Solving:**

The position is rated 25% as it operates and is governed by an established framework of legislation, regulations, codes, and practices governing the trade and operations of building/physical plant systems. Decision making and judgment are guided by policies, standards, guidelines and past precedents and solutions are found within the established framework. 29% is not supported as it has access to technical assistance from the supervisor.

▪ **Responsibility:**

Service delivery role providing operation and maintenance of building environment systems.

Last Reviewed: April 2023

Subsidiary 4 Benchmark

Job Description – 044PP18

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

This position must be able to function independently with minimum supervision on a shift. Plant equipment operated and maintained includes high pressure boilers, a heating plant, compressed air, refrigeration units, reverse osmosis systems and associated equipment. Position is also required to operate an electronic building management control system.

Responsibilities and Activities

(The purpose of the job can be broken down in different responsibilities and end results. Each end result shows what the job is accountable for, within what framework and what the added value is. Normally a job has 4-8 core end results. For each end result, approximately 3 major activities should be described.)

Heating and cooling plant components and other mechanical and auxiliary equipment within the assigned facility are operated and maintained in accordance with established policies, guidelines, and standards:

- Reads, interprets, and adjusts meters and gauges.
- Tests and controls chemical content of heating and cooling systems and auxiliary equipment.
- Ensures boilers and other equipment are operated safely and within specifications.
- Checks operations of and maintains air handling systems, stand-by boilers, and emergency generator sets and related equipment.
- Takes appropriate actions to assure heating and cooling requirements are met.
- Responds to air quality and other complaints and concerns from facility users.
- Orders and receives required parts, chemicals, and supplies.
- Identifies and records items requiring maintenance and repair.
- Prepares reports and maintains accurate records of heating and cooling plant operations.
- Performs scheduled visual inspections, regular building checks by computer and in person and also perform preventative maintenance activities.

Routine maintenance of boilers and other mechanical and auxiliary equipment within the assigned facility is performed in accordance with established policies, guidelines, and standards:

- Performs plant duties in accordance with Alberta Boiler Safety Association (ABSA) regulations and provides routine maintenance and repair in accordance with the Act.
- Works with other staff members and contractors to perform major servicing and repair work.
- Identifies need for parts and materials associated with maintenance, research options and supply sources, and participates in ordering, receiving, and installing new parts and equipment.

Preventative maintenance is performed on mechanical and auxiliary equipment within the assigned facility in accordance with established policies, guidelines, and standards:

- Inspects equipment and performs quality assurance checks on scheduled basis to detect operational problems and maintenance issues.
- Changes filters, lubricate equipment, cleans coils, and replaces belts, bearings, motors, and other

components.

- Performs general housekeeping in mechanical rooms.
- Keeps records of inspections, services, and repairs.
- Assists with repair of utility lines and related components.

Administrative and other services are provided in support of facility operations and maintenance:

- Provides assistance with identifying projects, preparing tenders, performing site tours, and inspecting and verifying work of contractors.
- Performs special projects assigned by the supervisor.
- Assist and work with tradespeople.
- Perform minor plumbing.
- Operate forklift for various duties.
- Prepare utility spreadsheets showing utility quantities consumed for a given period.
- Review various utility invoices and compare against in-house readings.
- Perform various activities towards the safe disposition of surplus hazardous materials generated by the site.

Routine maintenance of pools and fountains:

- Perform water quality tests and make necessary chemical adjustments.
- Perform pool vacuuming and strainer cleaning activities.
- Maintain proper chemical level dispensing.
- Ensure pool chemical inventory is maintained to an adequate level.
- Ensure logs are up to date and maintained.

Scope

(List specific information that illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Working within a team environment, this position independently operates and maintains building systems and equipment that are critical to the functionality of the assigned facility, the comfort and safety of staff and facility users, and the delivery of client programs. The Power Plant Engineer 3rd Class operates complex and diverse equipment and systems with minimal or no assistance (e.g., when working alone on weekends and holidays). Equipment operated and maintained can include air, heat and cooling systems, water and wastewater treatment systems, diesel powered emergency power generators, and natural gas cogeneration plants.

This position displays initiative, judgement, and personal direction when carrying out responsibilities. The Power Plant Engineer 3rd Class must be able to coordinate work with other staff members and contractors as necessary, prioritize and respond to work orders appropriately, anticipate potential issues, and provide solutions within established standards and procedures to avoid problems and delays in relation to services provided.

This position collaborates with the supervisor, managers, and consultants to support client operations by ensuring the effective completion of projects and provision of maintenance requirements within the assigned facility. Issues or situations outside established policies, directives, and guidelines or without clear precedent are discussed with the supervisor. Recommendations for changes to operational policies and processes or with major resource allocation or financial implications are also referred to the supervisor.

Knowledge, Skills, and Abilities

(Provide a list of the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others not only diplomas and degrees. Specific training if it is an occupational certification/registration required for the job.)

Qualifications:

A 3rd Class Power Engineering Certificate is required.

Knowledge:

- Government business plans, goals, strategies, and priorities as they relate to the Ministry and work area.
- Operations and maintenance procedures for heating and cooling systems and related auxiliary equipment.
- Building mechanical maintenance practices and approaches.
- Safe operation and maintenance of relevant tools and test equipment.
- Relevant provisions of legislation, regulations, directives, policies, and codes (e.g., ABSA regulations, mechanical system and equipment standards, Site Maintenance Manuals, *Occupational Health and Safety Act* and WHMIS regulations, First Aid and CPR standards, Code of Conduct and Ethics, *Freedom of Information and Protection of Privacy Act*).
- Relevant information, building management control, and maintenance management systems and business productivity tools (e.g., Microsoft Office, internet).
- Requires a working knowledge of boiler operation, HVAC (Heating, Ventilation and Air Control) systems, refrigeration systems, and other related physical plant systems.

Skills and abilities:

- Written and verbal communication skills, including ability to articulate technical issues and solutions.
- Interpersonal skills to interact positively with facility users, clients, contractors, and co-workers.
- Organizational and time management skills, including ability to prioritize multiple and competing requests for action.
- Problem solving skills.
- Plan and prioritize work, multitask, and function effectively within a dynamic work environment.
- Maintain focus on maintaining asset value while coordinating delivery of results at the operational level.
- Functional independently as well as contribute within a team environment.
- Demonstrate initiative, sound judgment, flexibility, creativity, and attention to detail and accuracy.
- Demonstrate commitment to confidentiality, diplomacy, client service, and continuous improvement.

Contacts

(The main contacts of this position and the purpose of those contacts.)

- The supervisor to receive instructions, clarify requirements, and provide reports as to maintenance and repair requirements.
- Facility users and clients to respond to work requests and issues relating to facility conditions,

exchange information, organize service delivery, and communicate during interruption of services.

- Representatives of Alberta Infrastructure and other departments to exchange information, respond to requests, and resolve issues.
- Contractors and suppliers to clarify requests, monitor work, and exchange information.

Supervision Exercised

No supervision.

Subsidiary 4

Benchmark Evaluation – 043PP16

Identification Section

Working Title:	Power Plant Engineer 4 th Class
Department:	Infrastructure
Division, Branch/Unit:	Properties Division, Property Management, Government Centre
Reports To:	Power Plant Supervisor
Levels to D.M.:	7
Job Description:	043PP16
Minimum Recruitment Standard:	See Minimum Recruitment Standards for Power Plant Engineer
Job Code:	043PP – Power Plant Engineer 4 th Class

Comments on Role

Position operates and maintains building system equipment in a large facility. Equipment is diverse and includes air, heat and cooling systems, water treatment systems and low-pressure boilers. Due to the nature of the facility, position requires a well-rounded knowledge of a wide range of processes.

Evaluation

Knowledge	Creativity / Problem Solving	Responsibility	Total Job Points
D- I 1 115	25% 29	R1 33	177

Comments on Evaluation

▪ **Knowledge:**

Professional/Content Knowledge:

Requires a 4th Class Power Engineer certificate and a working knowledge of boiler operations, HVAC (Heating, Ventilation and Air Control) systems, refrigeration systems and other related physical plant systems. Size and pressure of boilers require 4th Class certification to operate. The role requires less depth in knowledge and preparation than the Power Plant Engineer 3rd Class resulting in the D- rating.

Complexity and Diversity:

Position performs activities requiring planning and coordination skills in the operation and maintenance of diverse building system equipment.

Human Relations Skill:

- Rating of 1 is applicable as communication is of a technical nature; purpose is for exchanging and gathering information requiring the ability to clearly receive general and technical instructions and

communicate issues or problems during information exchange.

- **Creativity/Problem Solving:**

With readily available assistance, the position works with diverse equipment and is guided by established guidelines and standards. Framework of legislation, regulations, codes, and scope of work per trade certification, allows for latitude when applying judgement in determining the best course of action in different situations encountered. The nature of equipment and systems operated and maintained at the assigned location and related guidelines governing same supports a rating 25%. As both problems and solutions are standard, 29% is not supported.

- **Responsibility:**

Service delivery ensuring operations and maintenance of building equipment and systems.

Last Reviewed: April 2023

Subsidiary 4 Benchmark Job Description – 043PP16

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

A 4th Class Power Engineer's scope of practice may include the following:

- Continuous supervision, general supervision, and/or overall supervision.
- Act as an assistant engineer, assistant shift engineer, chief power engineer, shift engineer, and/or shift operator.
- May sketch, construct, install, operate, repair, and give advice on all things pertaining to the power plant that the holder is given the responsibility to operate, maintain, or supervise.

Responsibilities and Activities

(The purpose of the job can be broken down in different responsibilities and end results. Each end result shows what the job is accountable for, within what framework and what the added value is. Normally a job has 4-8 core end results. For each end result, approximately 3 major activities should be described.)

Operate and maintain a number of steam boilers, cooling towers, absorbers and emergency generators and their auxiliaries as well monitor the activities of aforementioned equipment through the use of a computerized BMCS:

- Read, interpret, and adjust meters and gauges.
- Test and control chemical content of heating and cooling systems.
- Check operation of air handling systems, emergency generator sets and related equipment.
- Perform scheduled visual inspections.
- Perform regular plant checks by computer and in person.
- Perform scheduled Facility Maintenance System (FMS), preventative maintenance activities.
- Prepare reports and maintain records and logs.

Other related responsibilities:

- Assist and work with tradespeople.
- Maintain applicable areas of the preventive maintenance program.
- Perform water quality tests.
- Perform pool vacuuming and strainer cleaning activities.
- Maintain proper chemical level dispensing.

Other related duties:

- Assist with preparation of utility spreadsheets showing utility quantities consumed for a given period.
- Monitor utility readings.
- Perform various activities towards the safe disposition of surplus hazardous materials generated by the site.
- Purchasing material as required.

Scope

(List specific information that illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Position is one of several that operate and maintain building system equipment in a large facility. Equipment is diverse and includes air, heat and cooling systems, water treatment systems and low-pressure boilers. Due to the nature of the facility, position requires a well-rounded knowledge of a wide range of processes.

Knowledge, Skills, and Abilities

(Provide a list of the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others not only diplomas and degrees. Specific training if it is an occupational certification/registration required for the job.)

Qualifications:

- Requires a 4th Class Power Plant Engineer certificate.

Knowledge:

- Requires a working knowledge of boiler operations, HVAC (Heating, Ventilation and Air Control) systems, refrigeration systems and other related physical plant systems including hand fired Foster Wheeler Boilers.

Skills and abilities:

- Must be able to work independently with a minimum of supervision.
- Demonstrated ability to exercise sound judgement in matters relating to equipment under their care.
- Must have proficiency with tools and be able to troubleshoot and repair various systems.
- Must have proficiency with testing equipment.

Contacts

(The main contacts of this position and the purpose of those contacts.)

Some interaction with building TPM contractor maintenance staff, contractors, and the public. In order to carry out work requests, some clarification will at times be needed. In order to coordinate projects, communication with fellow staff members will be needed.

Supervision Exercised

No Supervision.