

CITY OF CEDAR RAPIDS POSITION PROFILE	JOB CODE #/TITLE: NB319 Utility Electrical Engineer
POSITION #/TITLE: 2340 Utility Electrical Engineer	Adopted: 10-13
	Revised: 06-14

POSITION DESCRIPTION

Dept /Division: Utilities/Water Pollution Control & Water	Manager Level: Program Administrator
Salary Plan/Description: NBU/Non-Bargaining Unit	Salary Grade: 16
Reports To Position #/Job Code #/JC Title: 1694/NB244/Utilities Process/Facilities Engineering Manager	Dotted-line Reports To Position #/Job Code #/JC Title: 0005/NB372/Utilities Engineering Manager
FLSA Status: Exempt	City Overtime Status (Employee Type): Exempt (Salaried)
Physical Demand Rating: Medium	Work Environment: Controlled
Pre-employment Testing: Drug and health screening after contingent offer.	Position Testing: Job fit assessment
Personal Protective Equipment: Eye, Hand, Head, Foot, Hearing, Respirator, Protective Clothing, Fall Protection, Gas Monitor	

General Statement of Duties

Provides design, oversight and guidance for the electrical systems in the Water Pollution Control and Water Facilities. Develops and manages the coordination, design, budgeting, bidding and implementation of engineering plans, construction projects, reports, studies involving water and wastewater treatment processes; performs related work as required.

Distinguishing Features of the Class

Considerable leeway is granted for the exercise of independent judgment and initiative.

Examples of Essential Work (Illustrative Only)

- Manages Capital Improvement Projects through design, coordination, bid, document preparation and construction phases;
- Prepares project budget and construction cost estimates;
- Provides input on policy and practice issues;
- Makes presentations at Public Information Meetings;
- Identifies water and wastewater facility system infrastructure component deficiencies, prepares reports and estimates project costs;
- Prepares feasibility studies;
- Manages consulting engineering contracts;
- Manages capital improvement budgets;
- Develops specifications and designs, and provides design review of in-house capital improvement and construction projects;
- Provides engineering support to contractors and construction, maintenance, and operations at Utilities Department facilities;
- Assists in researching and analyzing contractors extra work proposals;

Prepares and submits grant applications;
Evaluates capital improvement project requests, develops options and recommends engineering actions;
Develop standard utility specifications for electrical components including wire, insulation, motors, variable speed drives and motor control centers;
Develop specifications and bid documents for electrical testing services;
Document locations of electrical cabling;
Review corrosion of and the potential of corrosion of electrical components and recommend control measures and materials of construction;
Reviews utility records for unusual demand and power factor penalties;
Maintain current electrical distribution drawings;
Reviews all electrical design for utility expansion and upgrade;
Maintain master records of all electrical components;
Prepares specifications, cost estimates and request for proposals for engineers, contractors, consultants and vendors;
Assists in specification development and reviews plans and specifications of proposed engineering and construction service contracts;
Monitors and inspects construction projects for conformance with specifications, contract requirements, regulatory agency rules and regulations and City standards;
Coordinates with appropriate staff in preparing Professional Service Agreements for contract design services;
Coordinates projects for public bidding with the Consultant and the City Clerk, receives and opens bids, and prepares construction agreement with Contractors;
Conducts field review of current and proposed projects to determine project scope, needs and projected resources;
Develops and delivers presentations and attends meetings, conferences and workshops;
Performs all work duties and activities in accordance with City policies, procedures and safety practices;
Attends work regularly at the designated place and time;
Supports continuous process improvement initiatives;
Performs related work as required.

Required Knowledge and Abilities

Extensive knowledge of electricity theory, electrical safety, circuit design, functions of transformers and associated electrical equipment;
Extensive knowledge of functions of specific electrical equipment utilized in wastewater collection and treatment processes and its operation and maintenance;
Extensive knowledge of OSHA permit-required confined space entry protocol, respiratory protection standards, right-to-know laws, CPR, and First Aid;
Thorough knowledge of the theory, language and operation of Programmable Logic Controllers (PLC) and computer systems;
Comprehensive knowledge of medium and high voltage distribution systems;
Knowledge of engineering and construction contract management;
Knowledge of, or ability to learn, the processes and equipment utilized in the treatment of water and waste water;
Good knowledge of fiber optic systems;
Thorough knowledge of principles and practices of electrical/electronic process control systems;
Ability to identify, interpret and develop engineering plans, specifications and diagnose electrical malfunctions;
Ability to train, assign, motivate, supervise, and evaluate the work of others;
Ability to read and interpret blueprints and plans;

Ability to communicate effectively and maintain working relationships with other City employees, supervisory personnel, electrical and maintenance personnel, contractors, subcontractors, and the public both orally and in writing, using both technical and non-technical language;
Ability to prepare accurate and reliable reports containing electrical and process control terminology and schematics, engineering calculations and specifications, findings, conclusions and recommendations;
Ability to understand contractor cost issues and administration of contracts.
Ability to operate a personal computer using program applications appropriate to assigned duties and responsibilities;
Ability to quickly learn and put to use new skills and knowledge brought about by rapidly changing information and/or technology;
Ingenuity and inventiveness in the performance of assigned tasks.

Acceptable Experience and Training

Graduation from an accredited college or university with a Bachelor's Degree in electrical engineering or other related engineering field;
Extensive Experience in design or electrical maintenance and construction; or
Any equivalent combination of experience and training which provides the knowledge and abilities necessary to perform the work.

Required Special Qualifications

Licensed as a Professional Engineer in the State of Iowa or the ability to obtain within six months of appointment.

Essential Physical Abilities

Requires the following, with or without reasonable accommodation:
Sufficient clarity of speech and hearing, which permits the employee to communicate effectively;
Sufficient vision, which permits the employee to perform engineering design and contract management tasks, observe and evaluate projects and processes and produce a variety of written and technical documents;
Sufficient manual dexterity, which permits the employee to operate a computer keyboard and develop engineering designs and specifications;
Sufficient personal mobility, which permits the employee to inspect engineering and construction projects, including sites characterized by trenching and rough terrain.