

**CITY OF ANAHEIM
CLASS SPECIFICATION**

TITLE CODE: K19

CLASSIFICATION: **Assistant Power Engineer**

DEPARTMENT: **Public Utilities**

CLASS DEFINITION: To perform professional and technical engineering work including plan review, development review, contract administration, and design in assigned area of responsibility; and to provide technical staff assistance to higher level engineering staff.

Individuals who participate in this program will be rotated every six months and assigned responsibilities related to four of six of the following areas: Transmission & Distribution, Business and Community Program, Substation Automation, System Planning, Integrated Resources and Electric Systems.

DISTINGUISHING CHARACTERISTICS: This is the entry level class in the Electric Engineering series. This class is distinguished from the Associate Power Engineer by the performance of the more routine tasks and duties assigned to positions within the series. Although this class is typically used as a training class, employees must have some related work experience or have completed three years of course work in a Board-approved engineering curriculum. The Engineer-In-Training Program is designed to last for two years, with an opportunity to obtain a full-time permanent position upon successful completion of this program and to compete for promotion to an Associate Engineer as opportunities arise.

SUPERVISION RECEIVED AND EXERCISED: Receives general supervision from higher level engineering staff. Each section will appoint a mentor in order for the Assistant Engineer to meet their respective objectives. A panel will be established and must recommend that a deserving engineer in training will continue employment after 2 years.

EXAMPLES OF ESSENTIAL JOB FUNCTIONS:

The following functions are typical for this classification. Incumbents may not perform all of the listed functions and/or may be required to perform additional or different functions from those set forth below to address business needs and changing business practices.

When Assigned to Any Area:

Assist in conducting a variety of engineering and technical studies related to area of assignment.

Assist in reviewing the work of consulting engineers and private contractors and recommend necessary revisions.

Review and update engineering standard drawings, specifications, and design criteria.

Perform related duties as required.

When Assigned to Transmission & Distribution (T&D):

Assist to research, develop, and maintain material standards for T&D Systems.

Assist in reviewing the existing material specification document and assist in studying other utilities material standards and specifications, as well as national standards for further improvement of the T&D Systems.

Assist the engineering, field and operation groups to reflect their needs of the construction standards and specification documents.

Learn how to develop, enhance, and maintain the electric T&D parts in Synergen.

Evaluate and employ newer technology and equipment in order to have the T&D Systems more economical and efficient.

Visit utilities warehouse and work with warehouse staff to get to know the existing material required to modify and/or build the T&D Systems.

Learn how to respond to material and work procedure questions/problems from designers, field crews, and other city departments.

Participate in investigation and evaluation of system/material failures.

Research, develop and maintain T&D Electric construction standards & review the existing construction standards document required for construction.

Assist with the engineering, field, and operation groups to reflect their need of the construction standards and specification documents.

Learn and study other utilities construction standards and specifications, as well as study national standards for comparison and/or enhancement.

Develop, enhance the application, and inter connect the electric T&D Standard and Compatible Units in Synergen.

Assist with the capital projects for user generated content (UGC) and T&D groups, by identifying materials required for construction, preparing and creating schedules, and coordinating with other utilities.

Assist with the yearly publication of books and CDs of construction standards and electric service manuals for residential, commercial, and industrial customers.

When Assigned to Business and Community Programs:

Assist in the development and implementation of pilot programs such as the Thermal Energy Storage Incentive program, A/C load control expansion, and Lighting Controller Incentive Program.

Assist in projects that showcase new technologies such as cold cathode fluorescent lighting and light emitting diode (LED) lighting and Phase Change Insulation Incentive Program by gathering available information on energy usage and efficiency of the respective technologies that will be used in performing analysis of costs and benefits.

Participate in site selection and negotiations with internal and external customers.

Initiate purchase orders, track project progress, and produce monthly updates.

Learn how to prepare standardized design/drawings for Photovoltaic installations at City Facilities.

Learn how to prepare material specifications and construction standards.

Assist in project implementation/planning, design, and contract administration of new and existing projects.

Review work of consultants for compliance with project requirements, City standards and practices; review work of outside plan check staff; review shop drawings submitted by construction contractors and conduct regular construction site inspection.

Learn how to prepare and maintain database based on California Climate Action Registry's new reporting protocol for reporting emissions.

Assist in tracking emissions and participating in forecasting of future Department emission sources.

Participate in emission data certification process by entering emission data into California Climate Action Registry's online database (CARROT) and assisting in responding to the certifier's comments during certification process.

When Assigned to Substation/Automation:

Prepare engineering drawings such as single lines and schematics.

Prepare detailed design drawings based on engineering drawings including detailed wiring diagrams, elevations, and equipment mounting.

Review as-built drawings and incorporate changes into the final drawings for project completion.

Prepare Request for Proposal (RFP)/Bid scope of work and functional requirements.

Assist in the evaluation of RFP/Bids by reviewing proposal details, verifying references, and when appropriate, testing proposed equipment.

Assist in the monitoring of RFP project progress and controls by preparing project schedules and spreadsheets for assigned projects.

Evaluate/test vendor equipment and devices for use on the City of Anaheim's electric system.

Prepare detailed equipment specifications based on tests and electric system requirements.

Evaluate vendor bids on equipment specifications and make recommendations on which vendor to select.

Perform fault duty calculations.

Perform protection coordination studies for fusing and substation relaying projects.

Perform substation battery sizing studies using current and future direct current (DC) load forecasts to support new substation automation, protection upgrade, and other substation improvement projects.

When Assigned to System Planning:

Assist in providing feed back from power quality investigations to improve T&D systems.

Assist in ensuring customer satisfaction with electric system performance.

Assist in coordinating and maintaining power quality databases that reflect system performance.

Assist in performing Five-Year Electric System Planning Studies to ensure the system can accommodate future loads reliably and cost effectively.

Assist in performing new electric generation studies to identify system reinforcements required due to new generation installations.

Assist in performing other special studies such as capacitor locations and controller settings, latest circuit breaker technology, voltage level assessments.

Assist in preparing and maintaining electric distribution system technical databases.

Assist in preparing load graphs, tables, and reports; learn how to calculate and analyze distribution circuit loading.

Assist in determining circuit load transfers and primary voltage drop calculations.

When Assigned to Integrated Resources:

Assist in managing a broad range of Engineering-Power Plant related projects; large scale construction, renovation and equipment replacement.

Assist in providing condition assessment of critical power plant equipment.

Identify any areas in need of upgrade due to changes in technologies or no longer supported by the manufacture.

Analyze the validity of new technologies such as inlet cooling and filtering to promote more efficient plant operations.

When Assigned to Electric Systems:

Observe and assist in routine maintenance on in-service relays, batteries, transformers, circuit breakers, control circuits, pole switches, automated transfer switches, and vault switches.

Observe and assist in acceptance testing on new relays, switchboards, transformers, circuit breakers, control circuits, control sets, and other substation equipment.

Observe and assist in testing, installing, and overhauling breakers, transformers, and switches.

Observe and assist in the use of test equipment and perform complex tests on distribution transformers, station transformers and circuit breakers.

Observe and assist field engineering and field crews in the performance of their duties.

JOB RELATED QUALIFICATIONS:

Experience and Education: Three years or more of engineering related experience.

OR

Three years of course work in a Board-approved engineering curriculum (any curriculum approved by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET). Foreign degrees are not ABET accredited unless they are from an accredited Canadian school). An equivalent combination of experience and education sufficient to perform the essential job functions and provide the required knowledge and abilities is qualifying.

Possession of a Bachelor's Degree in Electrical or Mechanical Engineering is desirable.

Knowledge of: Basic principles and practices of electrical engineering theory and design; electrical system and conduit analysis theory; basic methods, materials, and techniques used in electrical engineering projects including those used in the design and construction of projects; principles of mathematics as applied to engineering calculations; principles and practices of business correspondence and technical report preparation; office procedures, methods, and equipment including computers and supporting word processing, spreadsheet applications, and specialized engineering software programs; pertinent federal, state, and local laws, codes and regulations.

Ability to: Perform a variety of professional electrical engineering functions; perform technical research; read and interpret technical literature, drawings, diagrams, and schematics; operate office equipment including computers and supporting word processing, spreadsheet, and specialized engineering software programs; prepare electrical engineering design computations with speed and accuracy; prepare engineering plans, specifications, and estimates for electric utility projects; prepare clear and concise administrative and technical reports; communicate clearly and concisely, both orally and in writing; and establish and maintain effective working relationships with those contacted in the course of work.

License/Certification Required: Possession of an appropriate, valid driver's license. Possession of an Engineering-in-Training certificate is required within 18 months of date of appointment.

WORKING CONDITIONS:

Environmental Conditions: Work is performed in both an office and field environment; travel from site to site; occasional exposure to electricity, noise, and outside weather conditions.

Physical Conditions: Primary functions require sufficient physical ability and mobility to work in an office and field environment; to stand or sit for prolonged periods of time; to occasionally stoop, bend, kneel, crouch, reach, and twist; to lift, carry, push, and/or pull light to moderate amounts of weight; to operate office equipment requiring repetitive hand movement and fine coordination including use of a computer keyboard; visual acuity for reading engineering plans and specifications; and to verbally communicate to exchange information.

OTHER:

FLSA Designation: Professional Exempt

Unit Designation: Professional Management

CAREER LADDER INFORMATION: Experience gained in this classification may serve to meet minimum qualifications for Associate Power Engineer

Note: The above statements are intended to describe the general nature and level of work being performed by persons assigned to this job. They are not intended to be an inclusive list of all duties, responsibilities and skills required of incumbents. In accordance with the Americans with Disability Act, reasonable accommodation may be made to enable individuals with disabilities to perform the essential job functions.

Document Number: CS3268

Created 8/2006 – P. Saldivar

Revised 3/2008 – M. Botich

Revised 11/2009 – Johnson & Associates (Former Title: Assistant Engineer – Electric Division
(Engineer-in-Training Program)