

COMPETENCY MODEL FOR STREET LIGHTING ELECTRICIAN (3811)

The following competencies have been identified as those that best separate superior from satisfactory job performance in the class of **STREET LIGHTING ELECTRICIAN**. (Numbers refers to the order of the competencies in the Competency Bank.)

- 3. Judgment and Decision Making
- 7. Self-Management
- 8. Safety Focus
- 11. Initiative
- 20. Job Knowledge
- 26. Electrical Understanding
- 35. Teamwork
- 45. Oral Communication
- 47. Written Communication

On the following pages are descriptions of each competency, including a definition, the level of the competency required for the class (*italicized, bolded, and underlined*), examples of behavioral indicators, and satisfactory and superior performance levels.

3. JUDGMENT AND DECISION MAKING – Accurately assesses situations, seeks new information if necessary, and applies all available information to reach sound conclusions/formulate effective response.

Level of Competency Required by Job:

Level 1: Training and guidelines needed to respond to immediate situations within very specific function are provided (or supervisor available to assist).

Level 2: General information and guidance to assist in responding to a variety of situations across a range of circumstances are provided.

Level 3: *Little guidance available for responding to a wide range of complex situations with far-reaching and/or enduring consequences.*

Examples of Behavioral Indicators:

- Effectively responds to atypical situations.
- Asks questions or otherwise obtains additional relevant information to make a decision.
- Formulates a decision and necessary actions based on available facts.
- Correctly infers appropriate response based on information provided and existing policies, personal experience, and/or consultation with others.
- Discusses conclusions/possible responses with others before taking action as necessary.
- Considers impact of decisions on all affected parties.

Performance Levels:

Satisfactory

Correctly assesses routine and unusual situations and reaches appropriate conclusions for actions needed. Obtains additional information and/or consults with others as necessary.

Superior

Evaluates new situations accurately to establish an appropriate response or plan of action. Recognizes the impact on all affected parties, as well as the possible ramifications and/or repercussions of setting a precedent.

7. SELF MANAGEMENT – Organizes and plans for task accomplishment; manages time and works diligently to complete assigned work/fulfill responsibilities.

Level of Competency Required by Job:

Level 1: Order tasks for efficient performance; maintain awareness of time allotted and deadlines in order to ensure they are met.

Level 2: Plan and perform work in a way that maximizes efficient performance; establish and adjust priorities to ensure timely completion of most critical assignments.

Level 3: Allot time to responsibilities proportional to their prominence, priority, and impact.

Examples of Behavioral Indicators:

- Performs only work activities during work hours.
- Alters means of performing work when original approach proves to waste time.
- Keeps a “to do” list (with indication of priority and deadlines, if necessary).
- Requests assistance as necessary when it becomes clear that work will not be completed on time.
- Demonstrates a record of progress with respect to all assignments/responsibilities.
- Uses optimal means of communication for efficiency and effectiveness.

Performance Levels:

Satisfactory

Conducts self while at work in a manner that ensures work will be completed as scheduled, or provides explanation or secures assistance or adjustment of schedule if it will not be.

Superior

Seeks efficiencies in doing work to maximize productivity. Plans work carefully and follows the plan or makes adjustments if it is disrupted. Maintains personal responsibility for all work accomplishment.

8. SAFETY FOCUS – Performs work in a way that minimizes risk of injury to self or others.

Level of Competency Required by Job:

Level 1: Maintain awareness of unsafe conditions and actions to avoid injury.

Level 2: Follow safety rules/procedures; avoid known hazards in the work environment.

Level 3: Carefully follow safety rules and procedures and consistently use all necessary safety equipment.

Examples of Behavioral Indicators:

- Wears seat belt.
- Ensures safe physical work environment by taking actions such as eliminating unstable stacks of materials, closing drawers so filing cabinets will not tip over, and keeping pathways clear of tripping hazards.
- Reviews safety procedures before beginning each job with known hazards.
- Follows safety procedures while performing work even when it takes more time.
- Uses safety equipment such as goggles, gloves, and earplugs as required or warranted.
- Frequently checks safety equipment for proper condition and operation.

Performance Levels:

Satisfactory

Maintains awareness of personal safety to avoid injury or property damage during all work activities.

Superior

“Safety first.” Places avoidance of injury or property damage above all other job requirements. Mentions the need to follow safe work practices to co-workers. Actively seeks ways to avoid injury.

Safety Focus Areas

1. Knowledge of basic first aid practices and CPR, including procedures contained in the Red Cross First Aid Manual and CPR training course, in order to respond to common on-the-job injuries such as burns, punctures, abrasions, cuts, sprains, and electrical shock.
2. Knowledge of safety practices, including the proper use and pre-inspection of personal protective equipment, such as hard hats, goggles, gloves, steel-toe protectors, noise inhibitors, and dust masks, in order to ensure work is performed safely and in compliance with safety regulations as required by Occupational Safety and Health Administration (OSHA) and the American National Standards Institute (ANSI).
3. Knowledge of proper traffic delineation procedures outlined in the Work Area Traffic Control Handbook (WATCH) as they relate to setting-up safety equipment, such as high-rise warning devices, arrow boards, signs, cones, delineators, and/or barricades, sufficient to ensure that the equipment or device used is appropriate for the work site and that the work is being performed safely.
4. Knowledge of the safe use of various pneumatic tools, such as pavement breakers, digging spades, jacking drill, and tamps used in concrete foundation work, sidewalk removal, dirt excavation and replacement, and conduit installation in order to personally use the tools and instruct others on their safe and efficient use.
5. Knowledge of the California Construction Safety Orders (Title 8) in relation to equipment proximity to energized overhead lines, buildings, and surrounding objects, in order to have safe boom clearances and operations.

11. INITIATIVE – Generates activity that facilitates accomplishment of work.

Level of Competency Required by Job:

Level 1: Offer to help co-workers and/or recognize things to do that facilitate work group accomplishment.

Level 2: *Identify new tasks/projects to be undertaken and assist others with accomplishment of their work.*

Level 3: Determine additional work necessary to improve the function and productivity of the organization or its services to citizens or other customers.

Examples of Behavioral Indicators:

- Makes suggestions for improvement in work quality or quantity.
- Finds work to do when own work is slow rather than allow diminished personal productivity.
- Expands scope of work/responsibility in appropriate directions.
- Anticipates upcoming events in order to prepare for them.

Performance Levels:

Satisfactory

Generates goal directed activity rather than waiting to be told what to do. Anticipates what is likely to occur in order to be able to prepare; recognizes that preparation for (and clean-up after) a job is part of doing the job.

Superior

Actively pursues additional tasks/responsibilities that will facilitate effectiveness. Makes extensive preparations for upcoming events or expected changes.

20. JOB KNOWLEDGE – Knows information required to perform a specific job. Includes both widely available courses of study (for example, chemistry, human resources management, graphic arts) and City-specific information (parking regulation and ticketing practices; purchasing procedures; provisions of the City Charter).

Level of Competency Required by Job:

Level 1: Knowledge is concrete, factual, and/or procedural and may be defined by the organization. Situations in which it is applied are quite consistent.

Level 2: Knowledge is substantive and may be defined by an external trade, field, or profession. Situations in which it is applied vary and, as such, require breadth and depth of understanding.

Level 3: Knowledge is abstract, conceptual, and/or complex and may be supported by a well-defined academic discipline or authoritative sources (e.g., laws, ordinances, government guidelines/regulations/codes). Situations in which it is applied may vary greatly or be novel.

Examples of Behavioral Indicators:

- Performs work correctly/avoids technical (job content related) errors.
- Answers technical questions about work accurately.
- Asks few technical questions about the performance of routine work activities.
- Offers advice (“coaching”) to new employees regarding their work.
- Develops training programs for other employees.
- Sought out as a source of information by others.

Performance Levels:

Satisfactory

Sufficient job knowledge to perform work correctly independently. Answers technical questions about work correctly.

Superior

Expertise in technical job information sufficient to serve as a resource to others. May develop training manuals/ programs and/or give internal and/or external presentations related to work.

Job Knowledge Areas

1. Knowledge of street lighting electrical symbols, such as control numbers, types of circuits, pedestrian tunnels, transit shelters, and feed point transformers, contained on patrol map keys in order to read and interpret patrol maps.
2. Knowledge of the procedures used to establish clearances, such as location, potential hazards, and various circuits and conduct burn tests as stated in the division bulletin, in order to ensure a safe work environment.
3. Knowledge of various high voltage hand tools, equipment, and safety devices, such as high voltage rubber gloves, disconnect pullers, grounding straps, and split bolt connectors in order to aid creating a physical air gap in a circuit to ensure proper circuit clearance.
4. Knowledge of various power tools, such as drills and power hack saws used in conduit and electrolier replacement or repair in order to instruct crew members in their safe and efficient use.
5. Knowledge of the types and uses of fuses, such as cartridge, plug, and circuit breaker used to isolate control of electrical source from work area.
6. Knowledge of the different types of street light posts used by the Bureau of Street Lighting, such as concrete, cast iron, and steel posts, sufficient to instruct others in their proper assembly or disassembly.
7. Knowledge of the location of various post balance points on steel, concrete, and cast iron posts in order to instruct other crew members in the proper attachment of a sling used to lift or set posts safely.
8. Knowledge of various rigging techniques, including knots and hitches, such as square knots, half hitches, and slip knots, to set or lift posts properly and safely.
9. Knowledge of the factors to consider in properly placing a mobile hydro crane vehicle, including curb distance, lift distance, and angle, sufficient to instruct others and ensure safe crane operation.
10. Knowledge of a variety of electrolier standard plans, including parts lists, types of luminaries, type of foundations required, mounting heights, and overall dimensions, in order to properly instruct crew members in electrolier assembly and disassembly.
11. Knowledge of the proper application and operation of various equipment, such as an ammeter, heating coil, Megger, fuses, and circuit breakers, in order to troubleshoot a circuit.
12. Knowledge of Underground Service Alert (USA) requirements, such as notifying the USA of impending work, in order to help ensure safe working conditions.

26. ELECTRICAL UNDERSTANDING – Comprehends the concept and the operation of flow of electrical current.

Level of Competency Required by Job:

Level 1: Know the properties of electricity relevant to the work environment and work to be performed in order to correctly perform work and recognize hazards that will be created by the failure to do so.

Level 2: Sufficient understanding of electricity to recognize problems and determine repair needed to prevent disaster/restore operation.

Level 3: In-depth understanding of electrical principles and phenomena sufficient to design and/or oversee the installation of complex electrical systems.

Examples of Behavioral Indicators:

- Ensures safe physical work environment by taking actions such as eliminating exposed electrical wire, faulty connections, empty sockets, and overloaded circuits.
- Recognizes the danger of fire from faulty electrical installations.
- Uses tools, equipment, and instruments properly to accomplish electrical work correctly and safely.
- Systems designed and/or for which installation is overseen perform as intended upon completion.

Performance Levels:

Satisfactory

Understands the operation of electricity sufficient to readily learn and perform electrical work.

Superior

Displays exceptional insight into the operation of electrical systems, and makes correct inferences regarding them. Promptly and accurately troubleshoots problem.

Electrical Understanding Areas

1. Knowledge of street lighting electrical terminology, such as “mid-point ground pulled”, “lights out,” “ok temp,” and “cut straight through,” in order to correctly interpret trouble investigation reports.
2. Knowledge of electrical principles, such as current flow and electrical conductivity to provide complete information to crew members on safe working practices and to ensure own safety when working on, or in the area of, low and high voltage electrical systems.
3. Knowledge of types of equipment used in high voltage circuits, such as constant current transformers, types of fuses, electrical disconnects, and controllers, in order to ensure proper clearance procedures.
4. Knowledge of the Standard Specifications for Public Works Construction Manual (SSPWCM) as it related to street lighting work, including sections related to various types of wire and cable, types of insulation, installation of conduit, electrical bonding of conduit, conduit depths, and proper cable and wire splicing techniques for high and low voltage, in order to complete circuit installation.
5. Knowledge of burn test procedures and how to interpret results such as, proper sequence of lighting due to overlapping and crossed circuits and level of ammeter readings, in order to determine whether to carry out additional repairs and determine what procedures to apply.
6. Knowledge of repair procedures to apply to different forms of conduit and cable damage considering issues such as safety, time necessary for repair, cost, equipment, and manpower availability, in order to make repairs.
7. Knowledge of the procedures involved in the installation of overhead wiring and short loop circuits in order to affect temporary circuit repairs.

35. TEAMWORK – Interacts effectively with others to achieve mutual objectives; readily offers assistance to others to facilitate their goal accomplishment.

Level of Competency Required by Job:

Level 1: Work effectively as a member of a work unit or project team. Readily offer assistance to others when they have too much work or have too little.

Level 2: Work effectively as a team member in which different people have different roles/responsibilities and perspectives. Identify points for collaboration with co-workers; readily offer and request assistance.

Level 3: Work effectively as a part of an interdependent team (your work gets done only if the work of the whole team is done; evaluation of team performance is more relevant than individual performance).

Examples of Behavioral Indicators:

- Discusses work-related matters with co-workers.
- Offers and requests assistance readily.
- Offers and is receptive to suggestions.
- Identifies problems with workflow that will prevent team from accomplishing its goals.
- Provides constructive criticism and feedback to team members to improve overall functioning of team.
- Assigns credit to team for accomplishments.

Performance Levels:

Satisfactory

Cooperates with co-workers and fulfills responsibilities as a member of a project team. Maintains a focus on common objectives and offers and requests assistance readily.

Superior

Sees the team as a whole; acknowledges that performance of the team is what in reality is evaluated by others. If anyone fails, everyone on the team fails.

45. ORAL COMMUNICATION – Communicates orally in a clear, concise, and effective manner.

Level of Competency Required by Job:

Level 1: Exchange specific, job-related information orally with others in the immediate work environment or via telephone and/or radio.

Level 2: Obtain/provide/present general and/or job-specific information orally to a variety of others in various situations.

Level 3: Obtain/provide/present a diverse array of information orally at varying levels of complexity to a wide range of others across many different situations and circumstances.

Examples of Behavioral Indicators:

- Audience clearly understands the intended message.
- Rarely must repeat information in response to questions.
- Refrains from use of unnecessary words, phrases, or jargon.
- Provides a level of detail appropriate to the situation (avoids too much or too little detail).
- Speaks at a level appropriate to the audience in terms of terminology, sentence structure, and simplicity/complexity of ideas expressed.
- Uses words with precision (vocabulary) to convey exact information.

Performance Levels:

Satisfactory

Speaks clearly and audibly, providing the appropriate information and level of detail. Typically conveys the message on the first attempt. Answers questions accurately and directly.

Superior

Speech is direct and to the point. Speaks convincingly and with authority when appropriate. Maintains sensitivity to the audience while providing thorough information with the appropriate level of detail through the use of precise language.

47. WRITTEN COMMUNICATION – Communicates effectively in writing.

Level of Competency Required by Job:

Level 1: Write notes/e-mails. Completes forms with some open-ended responses (sentences).

Level 2: Write letters, articles/reports, and/or detailed descriptions of activities/occurrences.

Level 3: Write lengthy reports, instruction manuals, in-depth analyses/reviews of complex issues and/or articles for publication. Reviews the written work of others.

Examples of Behavioral Indicators:

- Writing includes the necessary information to convey the intended message.
- Sufficiently few errors in spelling, punctuation, grammar to not interfere with the intended message or distract the reader.
- Little editing or re-writing needed to produce a final product.
- Composes materials efficiently.
- Information is presented in a well organized manner.
- Tone and degree of formality are appropriate to the purpose and audience.

Performance Levels:

Satisfactory

Writes material that clearly communicates the necessary information; needs little editing.

Superior

Precisely uses words and organizes information in a way that enhances presentation of the message. Virtually no editing needed.

