



## CITY OF SPRINGFIELD JOB DESCRIPTION

<b>JOB TITLE:</b>	Instrument Electrician	<b>DATE:</b>	December 30, 2014
<b>DEPT/DIV:</b>	CWLP/Electric Generation/Maintenance	<b>LOCATION:</b>	Generating Station
<b>SUPERVISOR:</b>	Instrument Maintenance Supervisor and Service & Job Foreman	<b>STATUS:</b>	IBEW Local #193
<b>POSITIONS SUPERVISED:</b>	None		

**JOB SUMMARY:** Under general supervision, performs corrective and preventive maintenance of generating station electrical and control equipment. This position is subject to a temporary night assignment.

### JOB DUTIES AND ACCOUNTABILITIES:

E/M	Description	% Time
E	1. Troubleshoots and repairs boiler process, turbine and scrubber controls and instrumentation.	25
E	2. Troubleshoots and repairs Continuous Emission Monitor (CEM) and analytical instrumentation.	20
E	3. Troubleshoots and repairs Programmable Logic Controllers (PLC), Distributed Control Systems (DCS), and digital logic and analog control racks to the board level.	20
E	4. Reads and comprehends detailed schematic drawings, manufacturer's instruction books, and online construction drawings, and applies algebraic formulas to a wide variety of equipment calibrations.	5
E	5. Troubleshoots and repairs control boards to the component level.	5
E	6. Troubleshoots and repairs variable frequency drives, SCR motor drives and variable DC drives.	5
E	7. Installs conduit, pulls wire, and terminates wire.	5
E	8. Completes requisition forms for materials, services and tools as well as maintenance orders.	5
E	9. Supervises Apprentices as assigned and completes evaluations of Apprentices.	5
M	10. Performs other duties as required or assigned by supervisor.	5

### EQUIPMENT, AIDS, AND TOOLS:

Hand tools, power tools, air tools, conduit benders, hammer drill, chain hoists, electrical test equipment to include volt-ohm meters, digital multi-meters, wheatstone bridges, amp probes, circuit tracers, recording volt and amp meters, temperature transmitters, current and voltage transmitters, oscilloscope, plotters, AC and DC power supplies, E2 chip burners and readers, capacitance testers, welders, gas cutting equipment, solder station,

compressed air sprayers, safety lines, safety harness, special climbing belts, communication equipment and proper use of safety equipment.

**REGULAR CONTACTS:**

Instrument Maintenance Supervisor, Service and Job Foreman, Supervisor of Generation, and other craft, engineering, technician, and clerical employees as needed.

**WORKING CONDITIONS:**

This position is located at an industrial-type site and therefore must be aware and maintain a safe work environment for self and co-workers as outlined in the CWLP Safety Manual.

Certain areas at the power plant facility require wearing designated safety equipment provided by CWLP (including but not limited to hard hat, safety glasses, safety shoes, gloves, goggles, respirators, dust masks, special containment suits, hoods, safety belts and safety harnesses) as needed.

Work is performed in a dusty environment.

Work is performed in an environment that may cause allergic reactions.

Work is performed in extreme heat and cold at designated times.

Will be subject to conditions that affect the respiratory system including various lubricating oils, cleaning solvents, compounds, compressed air, and SO<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub> gases.

Will be subject to both inside and outside environmental conditions.

**KNOWLEDGE, SKILLS, AND ABILITIES:**

Ability to establish and maintain effective working relationships with employees and others.

Ability to communicate effectively and courteously in proper English both orally and in writing.

Ability to understand and interpret technical and non-technical, verbal and written direction.

Ability to effectively read, understand and interpret detailed technical manuals and apply this knowledge in the performance of job duties.

Strong mechanical aptitude.

Working knowledge of basic AC and DC theory, digital logic theory, and analog control theory and the ability to use this knowledge to effectively and efficiently troubleshoot control process problems and repair equipment quickly.

Ability to function independently.

Ability to maintain awareness of the environment and conditions at the job site.

Mental development conducive to continuing skill and ability enhancements through on-the-job training.

Ability and skills to safely and effectively operate man lifts, cherrypickers, bucket trucks, arc welding machines and gas cutting equipment.

Ability to adhere to department rules, procedures and policies.

**PHYSICAL REQUIREMENTS:**

Ability to maneuver several flights of stairs and walk on metal grating throughout the power plant, both physically and visually (low light conditions).

Ability to access all areas of the generating facility.

Ability to pass a pulmonary exam required to wear a respirator to allow for work in hazardous locations that may require use of breathing apparatus and full suit-up to protect health risk exposure.

Ability to work in confined spaces.

Ability to work in high places (ladders, scaffolds, grating, man lifts, etc.) that may require the use of safety belts and harnesses.

Must have unrestricted 20/20 eyesight (corrected to 20/20 accepted). Colorblindness is unacceptable.

Ability to lift loads and exert forces up to 50 pounds for extended periods.

Ability to perform a significant amount of stooping, kneeling, crouching, reaching, standing, walking, balancing, fingering, and grasping.

Ability to perform a moderate amount of climbing, crawling, pushing, pulling and lifting.

Visual ability to perform detailed close work/work within arm's reach.

Ability to tolerate conditions within the plant, such as fumes, noise, dust, and low lighting.

**TRAINING AND EXPERIENCE/MENTAL REQUIREMENTS:**

Requires knowledge, skill and mental development equivalent to an Associate's Degree in electrical technology or completion of a four-year apprenticeship in an Instrument and Control Maintenance group; three years experience at the journeyman/technician level; experience in troubleshooting programmable logic controllers, analog controllers, distributive processors, motor speed controls, analytical equipment, continuous emissions monitors, primary control devices, final elements, and metering circuits; and experience with installation and check out of process control equipment and associated conduit and wiring. Experience on generating station control systems or similar equipment preferred.

**ADDITIONAL REQUIREMENTS:**

Must have and maintain a valid Class D driver's license.

Must obtain and maintain first aid and CPR certificate.

Must remain compliant with the Facial Hair Policy.

Must meet the current requirements of the Labor Agreement between Local Union No. 193, International Brotherhood of Electrical Workers and the City of Springfield.

**FLSA STATUS:** Exempt  Non-exempt

Y	N	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. The employee customarily and regularly directs the work of at least two other employees.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. The employee makes recommendations as to hiring, firing, promotion, or disciplinary action of other employees.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. The employee plans and apportsions work, monitors performance, and determines techniques/resources to be used by other employees.
If all of (1), (2), and (3) are checked "yes", the position is exempt. Otherwise, continue with remaining questions.		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. The employee customarily and regularly exercises discretion and independent judgment.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. The employee devotes less than 20% of his/her workweek to non-exempt duties (e.g., typing, data entry, posting accounts, etc.).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. The employee performs under only general supervision, and/or works along specialized or technical lines requiring specialized training, experience, or knowledge.;
If all of (4), (5), and (6) are checked "yes", the position is exempt.		

Supervisor Approval: 

Date: 2/23/15 FEB 23 2015

Director Approval: 

Date: 2/19/15 FEB 19 2015

Human Resources Approval: Melina Tomaras-Collins

Date: 2/25/2015

## POSITION ATTRIBUTE WORKSHEET

**JOB TITLE:** Instrument Electrician

### 1. PHYSICAL ACTIVITY

	ATTRIBUTE	DUTIES	% Time
A.	<b>CLIMBING:</b> Ascending or descending ladders, stairs, scaffolding, ramps, poles, etc., using feet and legs and/or hands and arms. Body agility is emphasized. Important if the amount and kind of climbing exceeds that required for ordinary locomotion.	1,2,6,7,9,10	25
B.	<b>BALANCING:</b> Maintaining body equilibrium to prevent falling when walking, standing, or crouching. Important if the amount and kind of balancing exceeds that needed for ordinary locomotion and maintenance of body equilibrium.	1,2,6,7,9,10	25
C.	<b>STOOPING:</b> Bending body downward and forward by bending spine at the waist. Important if it occurs to a considerable degree and requires full use of the lower extremities and back muscles.	1,2,3,4,6,7,9,10	30
D.	<b>KNEELING:</b> Bending legs at knee to come to a rest on knee or knees.	1,2,3,4,6,7,9,10	25
E.	<b>CROUCHING:</b> Bending the body downward and forward by bending leg and forward bending leg and spine.	1,2,3,4,6,7,9,10	25
F.	<b>CRAWLING:</b> Moving about on hands and knees or hands and feet.	1,2,3,4,6,7,9,10	10
G.	<b>REACHING:</b> Extending hand(s) and arm(s) in any direction.	1-10	40
H.	<b>STANDING:</b> Particularly for sustained periods of time.	1-10	40
I.	<b>WALKING:</b> Moving about on feet to accomplish tasks, particularly for long distances.	1-10	60
J.	<b>PUSHING:</b> Using upper extremities to press with steady force in order to thrust forward, downward or outward.	1,2,3,6,7,9,10	25
K.	<b>PULLING:</b> Using upper extremities to exert force in order to draw, drag, haul or tug objects in a sustained motion.	1,2,3,6,7,9,10	25
L.	<b>LIFTING:</b> Raising objects from a lower to a higher position or moving objects horizontally from position to position. Important if it occurs to a considerable degree and requires substantial use of the upper extremities and back muscles.	1,2,3,6,7,9,10	30
M.	<b>FINGERING:</b> Picking, pinching, typing or otherwise working, primarily with the fingers rather than with the whole hand or arm as in handling.	5,10	5
N.	<b>GRASPING:</b> Applying pressure to an object with the fingers and palm.	1,2,3,5,6,7,9,10	10
O.	<b>FEELING:</b> Perceiving attributes of objects, such as size, shape, temperature or texture by touching with skin, particularly that of the fingertips	5,10	5
P.	<b>TALKING:</b> Expressing or exchanging ideas by means of the spoken word; conveying detailed or important spoken instructions to other worker accurately, loudly, or quickly.	1-10	25
Q.	<b>HEARING:</b> Perceiving the nature of sounds, with or without correction; receiving detailed information through oral communication, making fine discriminations in sound.	1-10	25
R.	<b>REPETITIVE MOTIONS:</b> Substantial movements of the wrists, hands, and/or fingers.		

2. PHYSICAL MODE – SELECT ONE

	ATTRIBUTE	LEVEL
A.	<b>SEDENTARY WORK:</b> Exerting up to 10 pounds of force occasionally and/or a negligible amount of force frequently or constantly to lift, carry, push, pull or otherwise move objects, including the human body. Sedentary work involves sitting most of the time.	<input type="checkbox"/>
B.	<b>LIGHT WORK:</b> Exerting up to 20 pounds of force occasionally, and/or up to 10 pounds of force frequently, and/or negligible amount of force constantly to move objects. Use of arm and/or leg controls with exertion greater than Sedentary Work and the worker sits most of the time.	<input type="checkbox"/>
C.	<b>MEDIUM WORK:</b> Exerting up to 50 pounds of force occasionally, and/or up to 20 pounds of force constantly to move objects.	<input checked="" type="checkbox"/>
D.	<b>HEAVY WORK:</b> Exerting up to 100 pounds of force occasionally, and/or up to 50 pounds of force constantly to move objects.	<input type="checkbox"/>
E.	<b>VERY HEAVY WORK:</b> Exerting <i>in excess</i> of 100 pounds of force occasionally, and/or in excess of 50 pounds of force frequently, and/or in excess of 20 pounds of force constantly to move objects.	<input type="checkbox"/>

3. VISUAL REQUIREMENT – SELECT ONE

	ATTRIBUTE	LEVEL
A.	Level A is typical of <b>CLERICAL, ADMINISTRATIVE, MACHINE OPERATION, CLOSE ASSEMBLY, INSPECTION:</b> Minimum standard for those preparing and analyzing data and figures, such as transcription, computer terminal, extensive reading, visual inspection involving small defects, small parts, operation of machines, (including inspection), using measurement devices, assembly or fabrication of parts at distances close to the eyes.	<input type="checkbox"/>
B.	Level B is typical of <b>MACHINE OPERATORS</b> (without inspection), <b>MECHANICS, SKILLED TRADESPEOPLE:</b> Minimum standard for those working with machines such as lathes, drill presses, power saws and mills where the seeing job is at or within arm's reach and those who do work of a non-repetitive nature such as carpenters, technicians, service people, plumbers, painters, mechanics, etc.	<input checked="" type="checkbox"/>
C.	Level C is typical of <b>MOBILE EQUIPMENT OPERATORS:</b> Minimum standard for those who operate cars, trucks, forklifts, cranes, and high lift equipment.	<input type="checkbox"/>
D.	<b>OTHER:</b> Minimum based on the criteria of accuracy and neatness of work for janitors, sweepers, etc.	<input type="checkbox"/>

4. MENTAL CAPABILITY REQUIREMENTS – SELECT ONE

	ATTRIBUTE	LEVEL
A.	Performs repetitive tasks following simple instructions.	<input type="checkbox"/>
B.	Performs a variety of simple tasks following instructions provided.	<input type="checkbox"/>
C.	Performs tasks requiring independent knowledge in addition to procedures or instructions provided.	<input checked="" type="checkbox"/>
D.	Performs complex tasks requiring independent knowledge and its application to non-routine situations.	<input type="checkbox"/>
E.	Performs highly complex and varied tasks requiring independent knowledge, its application to a variety of situations, as well as exercise of independent judgment.	<input type="checkbox"/>

5. **WORKING CONDITIONS – CHECK ALL THAT APPLY**

ATTRIBUTE	ITEM
A. Subject to inside environmental conditions; protected from weather conditions, some temperature changes.	<input type="checkbox"/>
B. Subject to outside environmental conditions.	<input type="checkbox"/>
C. Subject to both inside and outside environmental conditions.	<input checked="" type="checkbox"/>
D. Subject to extreme cold; temperature below 32 degrees for periods of more than one hour.	<input checked="" type="checkbox"/>
E. Subject to extreme heat: temperatures above 100 degrees for periods of more than one hour. Note if seasonal or process related.	<input checked="" type="checkbox"/>
F. Subject to noise sufficient to cause the worker to shout in order to be heard.	<input checked="" type="checkbox"/>
G. Subject to vibration of the extremities or whole body.	<input checked="" type="checkbox"/>
H. Subject to hazards such as proximity to moving parts, electrical current, working on scaffolding and high places, or exposure to chemicals.	<input checked="" type="checkbox"/>
I. Subject to conditions that affect the respiratory system or the skin such as fumes, odors, dusts, mists, gases or poor ventilation.	<input checked="" type="checkbox"/>
J. Subject to oils or other cutting fluids.	<input checked="" type="checkbox"/>
K. Required to wear respirator.	<input checked="" type="checkbox"/>
L. Not substantially exposed to adverse environmental conditions (such as in typical office or administrative work).	<input type="checkbox"/>

6. **COMMENTS/NOTES**