

## Position Description

Labor Category/FLSA: Nonexempt

\_\_\_\_\_ Current or  Proposed Specific Description

Date Prepared: 07/03/03

Approving

Official:

Name: H. Paul Busch

Signature: *H. Paul Busch*

Title: HR Specialist

Position Title/Series/Grade: High Voltage Electrician Leader, WL-2810-11

References: Federal Wage System (FWS) Job Grading Standard for Leader WL/NL, dated January 1980; FWS Job Grading Standard for High Voltage Electrician, 2810, dated May 1995

**Title and Series Determination:** The incumbent serves as a work leader at and above the journeyman level as a working assistant to the High Voltage Electrician Supervisor. Works along with the other electricians setting the pace and demonstrates the proper work methods involved in accomplishing assigned tasks. Makes sure that necessary materials, technical instructions and tools are available. Obtains required information or decisions from the supervisor on problems that come up during planning or performance of the work. Maintains a current knowledge of the NIH high voltage electrical systems and answers any questions of workers concerning assigned tasks. Inspects work while in progress and when finished to ensure the supervisor's instructions on work, sequence, procedures, methods, and deadlines were carried out. Assures that safety and housekeeping rules are followed. Reports to the supervisor on status and progress of work and causes of work delays.

The non-leader duties or "work duties" performed by the position are essentially identical to those of the WG-11 High Voltage Electrician, requiring the same exceptional degree of skill, knowledge, experience and judgement. The performance of these duties and the knowledge and skill necessary is illustrative of those detailed in the second referenced standard. This forms the basis for the title. The leader duties and responsibilities compel the consult of the FWS Leader standard. The standard directs the addition of the word "Leader" to the job title of the occupation in which the working leader is qualified and performs the non-supervisory work. The title dictated by both standards is High Voltage Electrician Leader.

**Grade Level Determination:** The FWS Leader Standard states that leader jobs are to be graded on the highest level of non-supervisory work led. The highest level of non-supervisory work performed under his/her leadership is at the WG-11 level. This justifies the proper classification as High Voltage Electrician Leader, WG-2810-11.

High Voltage Electrician Leader  
WL- 2810 - 11

**Introductory Statement:**

The Division of Property Management (DPM) serves all of the NIH Community by providing support for renovations, new construction and maintenance of existing facilities, utilities and grounds. The Division provides professional leadership for the engineering programs of the National Institutes of Health (NIH). The scope of DPM operations is such that the effectiveness with which they are carried out has a major and direct effect on the worldwide biomedical research programs of the NIH. In addition to the main facilities at the Bethesda Campus and in Poolesville, MD, NIH has facilities at Research Triangle Park, North Carolina, Rocky Mountain Laboratory in Montana and the Gerontology Research Center in Baltimore, MD.

This position is organizationally located within the DPM in one or more of the subordinate organizational components responsible for the provision of operations and maintenance of NIH facilities. The position requires the incumbent to be flexible in the types and complexity of work performed. The position requires that the incumbent be able to work independently and take the initiative to complete the work assigned with a minimum of direct supervision regardless of the nature of the work thus requiring that specific trade skills be shared between staff members.

Major Duties and Responsibilities:

The incumbent serves as a work leader and working assistant to the Electrician (High Voltage) Supervisor. Passes on to the other electricians instructions received from the supervisor.

Works along with the other electricians setting the pace and demonstrates the proper work methods involved in accomplishing an assigned task. Makes sure that necessary materials, technical instructions and tools are available. Obtains required information or decisions from the supervisor on problems that come up during planning or performance of the work. Maintains a current knowledge of the NIH high voltage electrical systems and answers questions of other workers concerning proper procedures, policies, written instructions and other directives to be used to complete an assigned task. Inspects work while in progress and then when finished to determine that the supervisor's instructions on work, sequence, procedures, methods, and deadlines were carried out. Assures that safety and housekeeping rules are followed. Reports to the supervisor on status and progress of work and causes of work delays.

Incumbent installs, tests, repairs and maintains generators, transformers, relays, regulators, switches, circuit breakers, recording instruments, control systems and other circuit elements. Works in high voltage electric vaults and substations, and on underground and overhead high voltage primary distribution systems.

Incumbent also dismantles, repairs and assembles asynchronous and induction motors, motor generators, protective relays, network protectors and high voltage circuit breakers. Installs,

alters, replaces distribution equipment in transformer vaults and substations. Clean, adjusts, and repairs electrical equipment such as air circuit breakers and remotely controlled supervisory and telemetering equipment. Installs rigid conduits. Pulls in conductors, assembles bus bars, phases out and connects conductors. Troubleshoots distribution circuits and controlling equipment to locate and correct the causes of outages and improper operation. Makes emergency cut-outs and substitutions and power lines and equipment, sometimes working on distribution systems when they are energized.

In addition the incumbent performs a variety of tasks such as repairing electrical auxiliary equipment in the boiler, refrigeration and incinerator plants. Performs these duties and other related duties as assigned by line supervision.

### Skills and Knowledge

The incumbent applies comprehensive and broad trade knowledge of electrical principles, elements and systems operation. Has the ability to install, repair and maintain commonly used electric power generating and distributing equipment, trues commutators and slip rings of rotary equipment while turning in their bearings, using dressing stones, under cutters, and grinders; replaces and adjust mechanical contacts and tripping and time-délay intervals of circuit breakers and relays using feelers gauges, dressing tools and timing devices; selects method of installation and repair to assure proper and safe operation of the distribution system, using knowledge of equipment capability, and of modifying factors such as local operating conditions.

The incumbent has knowledge of electrical theory such as power factor, transformers, series and parallel circuits, line loading, line losses, and dielectric or conductive properties of materials. Has the ability to plan and carry through almost all, including the most difficult and complex, operations in the troubleshooting and repair of high voltage controlling and distributing systems such as repairing switch gear, installing and connecting transformers, locating defect in cables, selecting materials to make installations and repairs; uses instruments such as insulation resistance "megger" or oscillator and tone detector to locate faults in underground cables. He/she is able to troubleshoot malfunctions resulting from multiple deficiencies in several components rather than just one readily identifiable defect. Has the ability to read and understand circuit diagrams for generators, busses, switches, circuit breakers, transformers and distribution systems so that problems can be determined and corrective action taken.

The incumbent must have a thorough understanding and knowledge of various test procedures to enable him to test the various devices and equipment on the system. This knowledge is necessary to enable him to make precise and knowledgeable statements and reports while inspecting various equipment. The down time on the high voltage system must be kept to the absolute minimum. Unscheduled outages cannot be tolerated.

### Other Significant Factors

Due to the size, complexity, uniqueness and criticality of the NIH's operations, the incumbent may need to perform additional duties, applying more skill, knowledge and responsibility than

that of a journeyman high voltage electrician. This position requires the incumbent to exercise an unusually high degree of knowledge and skill in performing the tasks detailed earlier. Additionally, many times the work will involve components that are prototype, or of a unique or otherwise unusually complex design. These situations require the application of his/her broad experience, knowledge and sound judgement usually surpassing the normal trade knowledge of an ordinary journeyman. The importance of the assignment requires the incumbent to stay current on the latest technological changes and updates in the trade. Also, the knowledge, skill and judgement possessed are used providing technical guidance and assistance to lower graded workers.

#### Supervision and Guidance Received

The incumbent usually receives work assignments from the Electrician (HV) Supervisor but may also receive instructions from other line supervisors. Tasks are usually assigned by the supervisor in the form of verbal instructions but they may also be in written form and are general in nature. He is then expected to accomplish the assignment without immediate guidance or instruction. He performs his work using his own judgement, work techniques and informational resources. His work and effectiveness, and that of the electricians he is leading, is spot checked by his supervisor through casual observations, occasional inspection, and informal reports from other line supervisors. In time of an emergency or in the absence of the Electrician (HV) Supervisor he is expected to react properly to any situations that should arise to keep the Central Plant and the high voltage electrical systems in operation on an uninterrupted basis.

#### Physical Efforts

Incumbent works both indoors and outdoors. He is required to be on his feet most of the tour of duty; the work requires considerable walking, climbing ladders, bending, stooping and crawling to inspect equipment. He kneels, stoops, crouches, and stands for long periods of time. He must be well coordinated in using his eyes, hands; legs, and body installing, repairing and testing electrical equipment in confined spaces and awkward locations.

#### Working Conditions

Incumbent works on and around equipment operating at high voltage. Is exposed to various degrees of temperature, to grease, oil, fumes, dirt and dust. At times is required to work in awkward and cramped positions. A majority of the working time is spent in high voltage vaults or around electrical equipment that is energized. Handles oil (transformer coolant, PCB) and compounds which may be toxic and difficult to safely work with.

In order to have switchgear and other control items available for testing and related work, it may be necessary to do work at night or on weekends. Therefore, working hours and days for personnel assigned to this shop may change according to work requirements and circumstances encountered in the buildings. At times, incumbent may be assigned to a rotating shift.