

B O N N E V I L L E P O W E R A D M I N I S T R A T I O N



SYSTEM PROTECTION CONTROL  
CRAFTSMAN I & II  
SKILL STANDARDS

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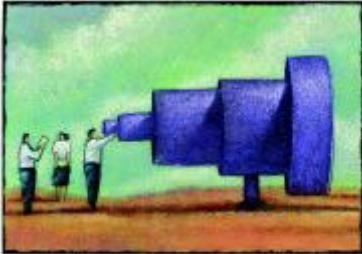
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# Introduction



## Skill Standards for BPA Occupations: Project Summary

- A National Context for Skill Standards
- What Are Skill Standards?
- Why Are Skill Standards Important?
- The Benefits and Uses of Skill Standards

## Skill Standards to Curriculum: A Continuous Development Process

## Pyramid of Competencies

## Skill Standards for BPA Occupations: Project Summary

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This document contains background information and a complete set of industry-defined skill standards for a specific occupation at the Bonneville Power Administration (BPA). BPA sponsored the development of occupation-specific skill standards through this project for two key reasons: First, skill standards provide the specific information that BPA leadership needs to respond effectively to current knowledge and skill requirements of employees in specific occupations related to power generation. Second, skill standards will also enable BPA to better prepare for future skill gaps that may occur due to employee retirements, promotions and ongoing technological changes in the energy industry.

### A National Context for Skill Standards

The National Skill Standards Board was established by Congress in 1994 to encourage the creation and adoption of a national system of voluntary skill standards that would enhance the ability of the U.S. to compete effectively in a global economy. Since then, several national voluntary skill standards projects were developed by various industries in full partnership with education, labor and community-based organizations. The intent was to have voluntary skill standards that were flexible, portable, and could be continuously updated and improved.

Voluntary, industry based skill standards should be:

- Responsive to changing work organizations, technologies and market structure.
- Benchmarked to world-class levels of industry performance and free from gender, racial, or other forms of bias.
- Tied to measurable, competency-based outcomes that can be readily assessed.
- Inclusive of basic reading, writing, and critical thinking skills.
- Useful for qualifying new hires and continuously upgrading employees' skills.
- Applicable to a wide variety of education and training providers, both work and school-based.
- Based on a relatively simple structure to make the system user-friendly.
- A cooperative effort among all stakeholders.
- Developed independently of any single training/education provider or type of education/training provider.

*National Alliance of Business*

### What Are Skill Standards?

Skill standards are performance specifications that identify the knowledge, skills and abilities an individual needs to succeed in the workplace. They are critical to improving workforce skills, raising living standards, and improving the competitiveness of the U.S. economy. To be effective, skill standards must reflect the consensus of power generation professionals.

Skill standards provide measurable benchmarks of skill and performance achievement. They answer two critical questions: What do workers need to know and be able to do to succeed in today's workplace? And, how do we know when workers are performing well? Without this fundamental information, employers do not know whom to hire or where to focus their limited training dollars; employees and new entrants to the workforce do not know what they need to do

to improve their performance; educators do not know how to prepare students for the challenge of the workplace.

### **Why Are Skill Standards Important?**

In today's workplaces, the only constant is change. Jobs that once were relatively simple now require high performance work processes and enhanced skills. Because skill standards reflect changing workplace realities, they are a tool that can be used by applicants and employees to access greater career opportunities.

Updating skills and knowledge is now a lifelong endeavor, causing many employers and employees to spend more effort, time, and money on education and training. Skill standards provide benchmarks for making education and training decisions, shaping curricula, and directing funds toward highest value education and training investments.

### **The Benefits and Uses of Skill Standards**

Skill standards benefit all the stakeholders—business, labor, educators, government, and the community. The success of a skill standards development project and its usefulness to the community is dependent on the full participation and commitment of all stakeholders. These benefits can be used as a benchmark for evaluating the effectiveness of collaborative efforts.

### ***How Skill Standards Benefit Employers***

Employers can use skill standards to establish personnel qualification requirements. Interviews, performance reviews, and productivity can be evaluated and assessed to a higher degree of accuracy and efficacy. Employers are also able to identify core competencies and workers' abilities to demonstrate competencies. By matching competencies to critical work functions and key activities, employers can significantly improve efficiencies and productivity. Performance-based skill standards also provide a vehicle for varying degrees of job certainty and the structure for establishing competency-based pay scales. In addition, employers use skill standards to:

- Align personnel qualification requirements with nationally adopted certificates of competence.
- Modify employee training.
- Simplify measurement of employee training effectiveness.
- Assess employee skill levels based on industry standards.
- Match employee skills to the work needed.
- More easily document employee skills, training needs, and performance criteria.
- Improve consumer satisfaction and confidence through better developed evaluation skills for customer contact personnel.
- Improve employee satisfaction and morale by clarifying expectations.
- Improve quality, productivity, time-to-market and competitiveness.
- Achieve business goals.
- Partner with education and labor in developing school-to-work initiatives.

### ***How Skill Standards Benefit Workers***

Skill standards assist students in making career choices by providing industry expectations for success in the workplace. In addition, standards-based curriculum and assessments provide students with credentials that certify work-readiness. Work-ready students can anticipate being hired at higher rates of pay and can experience faster advancement in their chosen fields. Workers can accurately assess their skills against those required for career advancement and plan effectively for their career pathways. They can determine the skills and abilities needed for advancement or transfer within industries, and determine the continuous learning and training they need to upgrade their skills. In addition, students and workers can use skill standards to:

- Achieve clarity regarding what they are expected to learn and how to prepare for work.
- Enter and reenter the workforce with better control of their choices of high paying jobs requiring high skills.
- Accurately assess business expectations of the skills needed for positions and careers of their choice.
- Improve mobility and portability of their credentials.
- Obtain certification of competence of the skills they gain through experience, school, training, or self-study.
- Enhance their performance and achievement by self-evaluation against known standards.
- Be active contributors to the activities that make their organizations successful.

### ***How Skill Standards Benefit Labor Unions***

Labor unions can use skill standards to gain support for company-sponsored worker training programs and to identify career paths for workers within companies and industries. Unions can provide this information to union members and develop strategies to improve career mobility and stability. Skill standards help unions to:

- Improve member value to the company.
- Provide a greater worker voice in the company.
- Link skill standards to increased training and upward career mobility for union members.
- Assist employers to match employee skills to the work needed.
- Develop skills-based training and certification initiatives that complement union apprenticeship programs.
- Communicate effectively with employers about worker training and retraining needs.
- Cooperate with education and industry in developing school-to-work initiatives.

### ***How Skill Standards Benefit Educators***

Educators can identify core competencies and assessments based on the skill standards and implement them in their curricula. Students can then be required to demonstrate competency throughout their coursework. Academia and industry can build a cohesive relationship through a like-minded expectation of student competencies and work readiness. This enhances an instructor's ability to teach information consistent with industry's entry level expectations and needs. In addition, educators use skill standards to:

- Partner with business and labor in developing school-to-work initiatives.

- Provide effective, targeted instruction.
- Develop benchmarks for certificates of competence earned by students.
- Communicate what companies expect of employees.
- Develop new and evaluate existing curriculum and programs based on industry needs.
- Develop assessments to evaluate skills, knowledge, and abilities in classrooms and internships.
- Develop a common language on workforce preparation with business and labor.
- Improve relationships with local businesses, labor unions, other educators and agencies.
- Provide students with relevant career education and counseling.

### ***How Skill Standards Benefit Government***

Government can provide information that will ensure a better skill match between workers and employers and initiate education reform to better educate future members of the workforce. Skill standards better enable agencies to provide options for career and job mobility and link learning to the needs of the workplace. In addition, government can use skill standards to:

- Assist in the development of a highly skilled, high-quality, and competitive workforce and industry base.
- Evaluate the effectiveness of publicly funded education and training.
- Increase opportunities for under-represented populations by making public the information that defines the skills required for success, and by facilitating the national adoption of those definitions and their use.
- Support the creation of high performance organizations where they improve living standards for all members of the population.
- Facilitate collaboration between educators and industry.
- Communicate the need and basis for education reform to business, education, labor, and the community-at-large on both local and national levels.

### **Skill Standards to Curriculum: A Continuous Development Process**

The skill standards generated in this project are designed to be used by participating education partners to develop or modify curriculum at the high school and community college level. By providing the necessary input from industry, this skill standards document is a first step in curriculum development to serve the power generation industry in particular, and to demonstrate what can be done across industries.

In order to keep current with a rapidly changing workplace, standards need to be reevaluated and updated on a regular basis, with full partner participation at each step. New technological developments impact the ways that workers organize and apply their skills, including time management and interpersonal relationships. Increased technological complexity may simplify some of the job tasks but make others more intricate. Today's successful power generation workers are challenged to acquire a broader range of decision making and customer service skills as well as keep current with emerging technologies. Ongoing changes like these must be reflected in curriculum in order to meet the needs of industry, where expectations for workers are evolving.



## **A model of continuous improvement for economic development: Using Skill Standards**

### ***Step 1: Skill Standards Identification***

- Compile and research existing standards in related jobs and careers.
- Conduct focus groups to identify critical work functions and key activities, define key activity performance indicators, and identify technical knowledge, foundation skills, and personal qualities.
- Conduct a survey of current workers to determine level of SCANS skills required for each job.
- Develop work-related scenarios to place the skill standards in the context of the work environment.
- Verify the data gathered from focus groups.
- Disseminate skill standards information to involved parties from industry, education, and labor for their review and editing.

### ***Step 2: Curriculum Development***

- Identify necessary competencies based on the skill standards information and assessments.
- Develop program outcomes for specific academic and training programs, including Tech Prep, 2-year, and apprenticeship programs.
- Perform gap analysis to determine changes or additions to be made to curriculum.
- Revise existing curriculum to better meet the current and future needs of the industry.
- Develop new curriculum and establish new programs based on these competencies.

### ***Step 3: Articulation***

- Develop models to support the articulation of program outcomes and competencies between academic and training systems.
- Establish articulation agreements between existing programs to ensure portability of skills.
- Connect competencies and Certificates of Competence with benchmark documentation to ensure the portability of competencies across industry.

## **A Continuous Updating Process**

A continuous exercise is necessary: all partners must revise and verify skill standards on a regular basis. Curriculum and current training methods must be updated to meet workplace standards.

Individual workers must have access to clearly stated competency goals and direct access to skill development assistance. With cooperative effort on local and national levels, we can begin to resolve the workforce shortages in the power generation industry that face us today.

## Pyramid of Competencies

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The Pyramid of Competencies is a depiction of skill standards in three broad skill categories.

### ***Tier I***

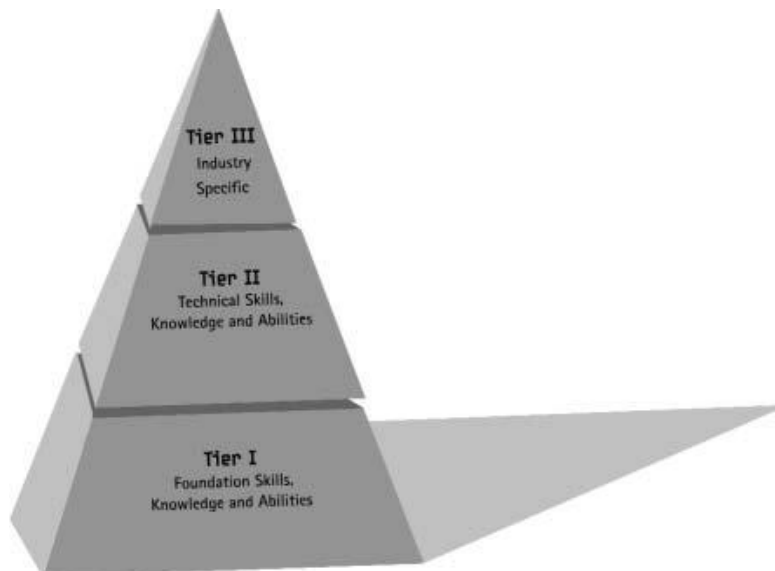
Tier I represents the broadest level of competencies, and is the set of employability (SCANS) skills, knowledge, abilities, and personal qualities required of all workers to be successful in today's workplace. These are the universal skills that are needed to apply technical knowledge and tools effectively.

### ***Tier II***

Tier II represents technical skills, knowledge, and abilities common to a cluster of jobs across all an industry. For workers at BPA, for example, knowledge of safe work practices would apply across all jobs.

### ***Tier III***

Tier III represents industry-specific technical skills, knowledge, and abilities that are unique to individual jobs and are the most prone to rapid change. For example, many workers need to upgrade their skills based on new technology.



# BPA Skill Standards Project



Project Goals, Guidelines and Methodology

Employability Skills: SCANS Profile

Definition of Terms

## **BPA Skill Standards Project Goals, Guiding Principles, and Methodology**

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### **Goals**

- Identify voluntary skill standards for specific jobs at BPA.
- Disseminate the results and support the use of skill standards for the purposes of professional development.

### **Guiding Principles**

- Experienced workers are the experts in their career field and are best able to identify the work performed and the skills, knowledge, and abilities required to be successful.
- Business, labor, and education must work as partners to ensure the creation of a link between the work expectations and the curriculum.
- The standards must be consistent with existing civil rights laws and practices.
- Standards must be flexible, portable, and should be updated continuously.
- Skill standards describe the major functions and key activities, as well as the performance indicators, technical knowledge and skills, employability skills, and personal attributes needed to succeed in the workplace.
- Integrated skill standards define work duties and the skills required to perform them in the context of work settings.

The experience of the partners involved in this project holds that the success of any skill standards project is critically linked to the full participation and commitment of all partners.

### **Identification of Skill Standards: Research Methodology**

#### ***Background***

These BPA-defined skill standards were developed using specific research-based processes. The project followed the process required by the Washington State Board for Community and Technical Colleges (SBCTC) as described in *Skill Standards Guidebook I*, Washington State Board for Community and Technical Colleges, 1996 and the process developed by the National Skill Standards Board (NSSB). In particular, the protocols used for the ICT (Information Communications Technology) skill standards were applied to this project.

#### ***Focus Groups***

Focus groups of BPA subject matter experts were conducted. The panelists were selected for their expertise in their field, and every effort was made to include a variety of geographical areas. Panelists had a minimum of three years experience in the job, although most had 12 or more years experience.

A structured process was used to guide the panel through the development of the critical work functions and key activities. In each focus group, the process included the following elements:

- Panelists were facilitated by a professional skill standards focus group leader.
- Panelists received an orientation to skill standards. Examples were provided.
- Panelists arrived at consensus regarding the components of the skill standards.
- Panelists clarified the organization and structure of the critical work functions and key activities, filled in gaps, and confirmed the accuracy of the critical work functions and key activities.
- Panelists identified performance indicators for each key activity.
- Panelists identified occupational technical knowledge and skills for each key activity.
- Panelists brainstormed the topics that need to be covered in training and education programs to prepare people to enter the work.
- Panelists completed a survey to level SCANS skills (see below) and determined the top 5 to 7 SCANS skills for each key activity.

After a thorough orientation to skill standards, panelists were asked to brainstorm critical work functions for the job. After composing their own critical work functions, they were then provided with the draft critical work functions identified through research. Panelists were asked to compare the research-identified critical work functions with those they brainstormed as a group, and to consider the following criteria:

- Is the function a broad responsibility?
- Does it take a significant amount of time to achieve?
- Are there groupings of Key Activities associated with it?

Participants were asked to review the key activities for each critical work function, and to posit appropriate changes wherever necessary. The criteria used for this purpose were:

- Does the activity describe what you have to do to achieve this function?
- Is it a major area of task responsibility?
- Is it concrete and specific?
- Does it have relatively equal importance to the other Key Activities?
- Does each Key Activity require distinct, definable skills?

Once the critical work functions and key activities were finalized, performance indicators were developed for each key activity. Panelists were asked how they know when a task is performed well, and what elements need to be in place so they would be ensured that this key activity is performed competently. The following criteria were provided regarding performance indicators:

Performance Indicators should...

- Describe competent performance.
- Be directly observable, concrete and measurable.
- Capture the essential aspects of performance.
- Be as precise and explicit as possible but still apply to the job throughout the BPA.
- Reflect what the individual can control.

Panelists brainstormed performance indicators, and then arrived at consensus with respect to the final list. The group was assisted in putting the content into appropriate language format.

Panelists next moved to identify the occupational technical knowledge and skills for each key activity. They brainstormed occupational technical knowledge and skills, and then arrived at the final list through consensus. Panelists were asked what a person needs to know and be able to do to accomplish the key activity at the level defined by the performance indicators.

In each focus group an informal discussion was held to identify the subjects and topics most important for new entrants to the industry.

### *Surveys*

A survey was conducted to level SCANS skills and personal qualities for the job. SCANS (Secretary's Commission on Achieving Necessary skills) are foundation abilities required of workers in all occupations at varying levels specific to their jobs, ranging from basic academic skills to problem solving, working in teams, and the use of technology. Surveys were distributed to panelists in the focus groups and to workers across BPA. The SCANS survey results are in the Academic and Employability Knowledge and Skills column of the skill standards template.

## Employability Skills: SCANS Profile

During the data-gathering process of this project, employability skills for BPA jobs were leveled. Employability, or workplace skills, are basic academic and foundation skills needed to build more advanced competencies. The foundation skills are based on broad workplace categories, known as SCANS (Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor). This federal report issued in 1991 identifies 37 foundation and workplace competencies required for work readiness.

SCANS are comprised of a three-part foundation of skills and personal qualities and five workplace competencies needed for successful job performance in today's workforce. Professionals currently working in the field were asked to identify the level of difficulty for each of the 37 SCANS skills most required for successful workplace performance in each job. The information in the charts on the following pages was compiled by taking a weighted average of the responses from workers in the specific job. This information provides the foundation for the employability skills within the skill standards.

### Basic Skills

Reading  
Writing  
Arithmetic  
Mathematics  
Listening  
Speaking

### Thinking Skills

Creative Thinking  
Decision Making  
Problem Solving  
Visualization  
Knows/Learns  
Reasoning

### Personal Qualities

Responsibility  
Self-worth  
Sociability  
Self-management  
Integrity/Honesty

### Workplace Competencies

Utilizing Resources  
Interpersonal Skills  
Utilizing Information  
Using Systems  
Using Technology

The *ADVANCE™ Workplace Standards Skill Inventory* from Advance Educational Spectrums, Inc. was used to capture industry views on foundation skills for power generation workers. Industry professionals ranked the SCANS skill levels required.<sup>1</sup>

<b>Applies creative thinking</b>	<b>Level I</b> □ • Makes connections between old and new • Recognizes patterns/relationships	<b>Level II</b> □ • Recognizes/understands comprehensive existing ideas • Identifies transforming techniques	<b>Level III</b> □ • Develops creative solutions • Applies creative solutions to new situations	<b>Level IV</b> □ • Generates unique solutions • Formulates new approaches/applications • Organizes new processes/procedures	<b>Level V</b> □ • Judges/validates creativity
<b>Applies decision making strategies</b>	<b>Level I</b> □ • Understands decision making process • Recalls basic rules/principles • Identifies goals and constraints	<b>Level II</b> □ • Applies rules/principles to situations • Gathers information	<b>Level III</b> □ • Analyzes situations/interactions • Considers risks/implications • Completes multiple steps/tasks	<b>Level IV</b> □ • Generates alternative solutions • Evaluates alternative solutions • Formulates plan of action	<b>Level V</b> □ • Judges consistency/feasibility • Justifies justification/rationale • Sets decision making parameters
<b>Recognizes and solves problems</b>	<b>Level I</b> □ • Identifies the problem	<b>Level II</b> □ • Understands the complexity/dynamics • Appropriately refers/completes/oversees/monitors	<b>Level III</b> □ • Locates/frames/analyzes/evaluates/communicates/monitors/adjusts • Recommends action plan	<b>Level IV</b> □ • Generates/validates solutions • Develops/monitors plan of action	<b>Level V</b> □ • Produces/validates plan of action • Judges effectiveness/efficiency of solution

Sample survey questions from the Advance Workplace Standards Skill Inventory

<sup>1</sup> The *Workplace Standards Skill Inventory* was used with permission from Centralia College through the State Board for Community and Technical Colleges, which holds a license agreement with Advance Educational Spectrums, Inc.

## **Definition of Terms**

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Each chart in the following skill standards templates contains the following components:

### ***Academic and Employability Skills***

Employability skills are basic academic and personal skills that are needed to build more advanced competencies. They are competencies required by all workers in order to obtain meaningful work and participate in the modern workforce.

### ***Critical Work Functions***

Critical work functions represent the general areas of responsibility for the front-line worker in power generation. The functions tell us what must be done to achieve the key purpose of an occupation or job.

### ***Key Activities***

Key activities are the tasks performed by workers and related to the functional area of the job. They are made up of work activities which are measurable and observable, and which result in a decision, product or service.

### ***Performance Indicators***

Performance indicators are specific behavioral evidence of a worker's achievement of skills, knowledge, and task completion. The question answered is: "How do we know when this key activity is performed well?" Performance indicators provide the standard of performance required to produce the necessary outcomes of key activities.

### ***Technical Skills, Knowledge, Abilities and Tools***

Technical skills, knowledge, and abilities are those areas of expertise which workers must have in order to perform a given occupational task with excellence. A collection of skills, knowledge, abilities, and tools make up competencies.

Skills refer to proficiency in an applied activity. This activity could be physical, mental, or interpersonal in nature.

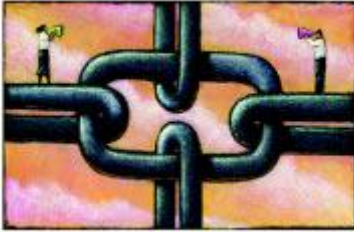
Knowledge is a particular set of information.

Abilities are broad human characteristics that result from natural talent, training, or experience.

Tools are materials, equipment, and implements a worker must be able to use competently to meet the requirements of the job.



# Skill Standards for SPC Craftsman I & II



Summary of Critical Work Functions  
and Key Activities

Skill Standards

Bonneville Power Administration  
**System Protection Control Craftsman I & II**

Critical Work Functions	Key Activities					
<b>A.</b> <b>Maintain and Repair Equipment</b>	A1 <i>Perform preventive maintenance</i>	A2 <i>Perform troubleshooting</i>	A3 <i>Perform repairs</i>	A4 <i>Calibrate equipment</i>	A5 <i>Document equipment maintenance</i>	A6 <i>Respond to system problems</i>
<b>B.</b> <b>Implement Installation, Modification and Upgrade of Equipment</b>	B1 <i>Participate on the installation, modification or upgrade team</i>	B2 <i>Oversee move or removal equipment</i>	B3 <i>Test to ensure proper function during and after installation, modification, or upgrade</i>	B4 <i>Document installation or modification</i>	B5 <i>Modify equipment</i>	B6 <i>Upgrade equipment</i>
<b>C.</b> <b>Analyze Power System Equipment Performance</b>	C1 <i>Gather, analyze, and store disturbance data</i>	C2 <i>Gather and analyze metering data</i>				
<b>D.</b> <b>Perform Technical and Administrative Duties</b>	D1 <i>Maintain records and reports</i>	D2 <i>Assist in training other employees</i>	D3 <i>Conduct annual personal property inventory</i>	D4 <i>Perform accounting and payroll functions</i>	D5 <i>Perform housekeeping</i>	D6 <i>Maintain proficiency in current and new technologies</i>
<b>E.</b> <b>Communicate with Co-Workers to Promote Safety and Productivity</b>	E1 <i>Participate in meetings and problem solving groups</i>	E2 <i>Communicate safety and job-specific needs</i>	E3 <i>Report observations of abnormalities</i>	E4. <i>Identify and report accidents and unsafe conditions and take corrective actions</i>	E5 <i>Communicate and coordinate with BPA management and co-workers</i>	E6 <i>Respond to requests from customers</i>
<b>F.</b> <b>Perform Job Planning and Scheduling</b>	F1 <i>Schedule equipment outages</i>	F2 <i>Gather materials, tools, software, documents and equipment</i>	F3 <i>Order or verify materials and parts not on hand</i>	F4 <i>Establish priorities</i>		
<b>G.</b> <b>Maintain Tools, Equipment and Supplies</b>	G1 <i>Maintain test equipment, hardware and supplies</i>	G2 <i>Maintain databases and software</i>	G3 <i>Maintain vehicle stock</i>	G4 <i>Create test routines</i>		

**Job: System Protection Control Craftsman I & II**  
**Critical Work Function: A. Maintain and Repair Equipment**

KEY ACTIVITY	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><b>A1</b> <i>Perform preventive maintenance</i></p>	<ul style="list-style-type: none"> <li>• Safety procedures are followed and proper personal protective equipment is worn or used.</li> <li>• Preventive maintenance requirements are met.</li> <li>• Preventive maintenance standards and guides are completely followed.</li> <li>• Maintenance job is documented according to agency or district procedure.</li> <li>• Documentation is turned in to the correct parties for processing.</li> <li>• Revisions to maintenance plan are made as necessary.</li> <li>• Hazardous materials procedures are followed with respect to handling and disposal.</li> <li>• Where applicable, lockout tagout is correctly performed.</li> <li>• Equipment outage during preventive maintenance is requested in accordance with agency policy.</li> <li>• All calibration adjustments are checked and corrected to meet tolerance as necessary.</li> <li>• Equipment works properly upon completion of preventive maintenance.</li> <li>• Preventive maintenance is completed with no adverse impact on power system.</li> </ul>	<ul style="list-style-type: none"> <li>• Basic understanding of the power system and its components.</li> <li>• Knowledge of equipment such as protective relays, revenue meters, DFR (Digital Fault Recorder), transducers, test equipment and event recorders.</li> <li>• Knowledge of equipment interfaces with the power system such as protective relaying, communications aided tripping, SCADA (Supervisory Control and Data Acquisition), PLC (Programmable Logic Controller), revenue metering, and DC batteries.</li> <li>• Ability to read and interpret manufacturer's specifications and recommendations.</li> <li>• Knowledge of hazardous materials and safety procedures and BPA APM (Accident Prevention Manual).</li> <li>• Knowledge of preventive maintenance requirements.</li> <li>• Knowledge of <i>Standards and Guides</i>.</li> <li>• Ability to operate automated test systems such as Doble, Protest, Radian and Transwin.</li> <li>• Knowledge of district documentation procedures.</li> <li>• Ability to follow a maintenance plan.</li> <li>• Ability to use basic tools such as screw drivers, wrenches, and soldering equipment.</li> <li>• Knowledge of three-phase power theory and DC theory.</li> <li>• Knowledge of digital theory and logic.</li> <li>• Knowledge of power grid dynamics.</li> <li>• Knowledge of electrical substation equipment such as breakers and transformers.</li> </ul>	<ul style="list-style-type: none"> <li>• Effectively manages time; prepares and organizes multiple schedules and manages timelines.</li> <li>• Pays attention to details, demonstrates initiative, monitors performance standards and follows up on assigned tasks.</li> <li>• Understands operation/interaction; manipulates technology for desired result; analyzes technology output; examines task/technology relationship.</li> <li>• Interprets and applies new knowledge and experience and analyzes application of learning tools.</li> <li>• Maintains self control, accepts constructive criticism, sets well defined/realistic goals and demonstrates commitment to self improvement.</li> <li>• Manipulates formulas and processes and interprets and organizes mathematical data.</li> <li>• Monitors system performance, analyzes system operation, distinguishes trends in performance and diagnoses performance deviations.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>A2</i> <i>Perform troubleshooting</i></p>	<ul style="list-style-type: none"> <li>• Schematics, wiring diagrams and equipment experts are consulted as necessary.</li> <li>• Information about the nature and possible causes of failure is systematically gathered through sensory inspection, past experience, observation of equipment during normal operations and feedback from field personnel and control center.</li> <li>• The diagnostic tests are performed systematically as necessary to determine the correct nature of the problem.</li> <li>• Diagnosis is timely and effective.</li> <li>• Manufacturer's instruction manuals and equipment histories are used when evaluating equipment performance.</li> <li>• Procedures for isolating problems are initiated correctly and followed through completely.</li> <li>• System conditions are known and understood prior to initiating troubleshooting.</li> <li>• During troubleshooting, information is provided to the control center.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of the system and equipment, and how it interacts with other systems</li> <li>• Knowledge of and ability to perform diagnostic tests, use test equipment and interpret the output from the tests and diagnostic equipment such as meggar and multimeters.</li> <li>• Knowledge of basic troubleshooting processes and procedures</li> <li>• Ability to access and read equipment logs and histories.</li> <li>• Ability to execute isolation procedures.</li> <li>• Ability to read and correct schematics and electrical diagrams.</li> <li>• Knowledge of multiple trades and crafts and their functional boundaries and nomenclature.</li> <li>• Ability to read and understand manufacturer's specifications and manuals.</li> <li>• Knowledge of information requirements of various departments and personnel.</li> <li>• Ability to write and document trouble reports and history briefs.</li> <li>• Knowledge of BPA terminology and acronyms.</li> <li>• Knowledge of digital theory and logic.</li> </ul>	<ul style="list-style-type: none"> <li>• Analyzes possible causes of problems, generates and evaluates solutions and generates and evaluates solutions.</li> <li>• Recognizes job tasks and distributes work assignments.</li> <li>• Defends own viewpoints, accepts responsibility for own behavior, understands own impact on others and demonstrates self confidence, self reliance, and self discipline.</li> <li>• Monitors system performance, analyzes system operation, distinguishes trends in performance and diagnoses performance deviations.</li> <li>• Predicts outcomes, analyzes data, integrates multiple items of data and contrasts conflicting data.</li> <li>• Analyzes situations and information, considers risks and implications, and compiles multiple viewpoints.</li> <li>• Understands technological requirements and results; analyzes task/technology relationship; proposes simple technological solutions.</li> <li>• Utilizes previous training and experience to predict outcomes; visually analyzes relationship between parts/whole and process/procedure and interprets charts, graphs and symbols.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><b>A3</b> Perform repairs</p>	<ul style="list-style-type: none"> <li>• Work is performed safely in accordance with <i>Standards and Guides</i>.</li> <li>• The necessary co-workers are informed regarding the repair process.</li> <li>• Equipment is correctly repaired or replaced as necessary.</li> <li>• During repair process, equipment is thoroughly inspected to identify other repair needs.</li> <li>• Where appropriate, repair plan and job safety/hazard analysis are effectively communicated to appropriate personnel in a timely manner.</li> <li>• Replaced parts are properly disposed of or refurbished and returned to service.</li> <li>• Post maintenance testing is performed to ensure equipment is in proper working order.</li> <li>• Equipment trouble reports and/or history briefs are accurately completed and submitted as required.</li> <li>• Implement setting changes as necessary.</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to track how parts and equipment are disassembled so they can be correctly put back together.</li> <li>• Knowledge of safe work practices with respect to repairs, and of BPA APM (Accident Prevention Manual).</li> <li>• Knowledge of <i>Standards and Guides</i>.</li> <li>• Knowledge of technical requirements for specifications of parts to be repaired and manufactures recommended procedures.</li> <li>• Knowledge of equipment function and purpose within the system, and how they affect other systems.</li> <li>• Knowledge of equipment inspection procedures.</li> <li>• Ability to identify the root cause and possible adverse effects of malfunction.</li> <li>• Ability to properly test and validate successful repair.</li> <li>• Knowledge of proper disposal and refurbishing procedures for parts and repairs.</li> <li>• Ability to interact with internal and external customers (other departments or vendors).</li> <li>• Knowledge of the contents of trouble reports and history briefs, how to locate them, and their proper distribution.</li> <li>• Ability to implement setting changes and test for validation.</li> <li>• Knowledge of the BPA personnel who are impacted by repair work.</li> <li>• Ability to operate test equipment such as power system simulators, meter standards, oscilloscopes, multimeters and instrument controllers (PCs (personal computers)).</li> <li>• Ability to perform circuit board repair.</li> <li>• Ability to use basic tools such as screw drivers, wrenches, and soldering equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Suggests system modifications/improvements and determines system components to be improved.</li> <li>• Pays attention to details, demonstrates initiative, monitors performance standards and follows up on assigned tasks.</li> <li>• Maintains self control, accepts constructive criticism, sets well defined/realistic goals.</li> <li>• Interprets and converts numerical data, predicts arithmetic results, organizes numerical data and sets numeric parameters.</li> <li>• Manipulates formulas and processes and interprets and organizes mathematical data.</li> <li>• Monitors system performance, analyzes system operation, distinguishes trends in performance and diagnoses performance deviations.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><b>A4</b> <i>Calibrate equipment</i></p>	<ul style="list-style-type: none"> <li>• Calibration is performed in accordance with <i>Standards and Guides</i>.</li> <li>• Equipment is set in accordance with setting sheets or manufacturer's specifications.</li> <li>• Equipment operates within tolerance after calibration.</li> <li>• Calibration documentation is accurately completed in accordance with agency and district policies and procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of <i>Standards and Guides</i>.</li> <li>• Knowledge of manufacturer's specifications and district setting sheets.</li> <li>• Ability to set equipment to operate within tolerance.</li> <li>• Knowledge of documentation policies and procedures.</li> <li>• Knowledge of test equipment and its operation.</li> <li>• Ability to use basic hand tools such as screw drivers, wrenches, and soldering equipment.</li> <li>• Ability to use laptop computers as instrument controllers.</li> </ul>	<ul style="list-style-type: none"> <li>• Interprets and converts numerical data, predicts arithmetic results, organizes numerical data and sets numeric parameters.</li> <li>• Manipulates formulas and processes and interprets and organizes mathematical data.</li> <li>• Maintains self control, accepts constructive criticism, sets well defined/realistic goals and demonstrates commitment to self improvement.</li> <li>• Monitors system performance, analyzes system operation, distinguishes trends in performance and diagnoses performance deviations.</li> <li>• Understands operation/interaction; manipulates technology for desired result; analyzes technology output; examines task/technology relationship.</li> <li>• Demonstrates honesty and trustworthiness, accepts responsibility for own behavior, and analyzes implications of decisions.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><b>A5</b> <i>Document equipment maintenance</i></p>	<ul style="list-style-type: none"> <li>• Documentation is performed according to agency and district policies and procedures.</li> <li>• Documents and appropriate files are input into database, filed, or distributed to correct parties.</li> <li>• Preventive maintenance schedule is accurately updated to reflect work completed.</li> <li>• Documentation is accurate, legible and complete and is completed in a timely manner.</li> <li>• Documentation is understandable and succinct.</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to document equipment maintenance to meet audience needs.</li> <li>• Knowledge of procedures to update wiring diagrams and schematics and communicate updates to the Design Department.</li> <li>• Knowledge of documentation policies and procedures.</li> <li>• Ability to input relevant and accurate data into manual and electronic system.</li> <li>• Knowledge of how documentation is used by other BPA departments and employees.</li> <li>• Ability to report findings and make recommendations based on documented history and findings.</li> <li>• Ability to use correct terminology.</li> </ul>	<ul style="list-style-type: none"> <li>• Records information accurately, creates original documents and summarizes information.</li> <li>• Pays attention to details, demonstrates initiative, monitors performance standards and follows up on assigned tasks.</li> <li>• Utilizes integrated software, utilizes networks and manipulates, modifies and edits information.</li> <li>• Effectively manages time; prepares and organizes multiple schedules and manages timelines.</li> <li>• Understands the system organization and hierarchy, follows processes and procedures, and responds to system demand.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p>A6. <i>Respond to system problems</i></p>	<ul style="list-style-type: none"> <li>• Problems are responded to in a timely manner.</li> <li>• Problems are solved in an effective manner.</li> <li>• Information about problems and solutions are communicated to appropriate personnel in a timely manner.</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding of the district SPC equipment used in the operation of the power system.</li> <li>• Knowledge of power grid dynamics.</li> <li>• Ability to read and interpret manufacturer's specifications and recommendations.</li> <li>• Knowledge of <i>Standards and Guides</i>.</li> <li>• Knowledge of requirements of departments and personnel regarding system problems and solutions.</li> <li>• Ability to troubleshoot system problems.</li> <li>• Ability to identify and implement solutions to system problems.</li> </ul>	<ul style="list-style-type: none"> <li>• Effectively manages time; prepares and organizes multiple schedules and manages timelines.</li> <li>• Analyzes possible causes of problems, generates and evaluates solutions and generates and evaluates solutions.</li> <li>• Troubleshoots and corrects malfunctions and failures; evaluates performance of technology; analyzes failures.</li> <li>• Pays attention to details, demonstrates initiative, monitors performance standards and follows up on assigned tasks.</li> <li>• Analyzes and responds to customer needs, demonstrates commitment to customer and relates to customer concerns.</li> <li>• Confirms information and interprets, clarifies and influences communication.</li> <li>• Communicates appropriate verbal/non-verbal messages, actively participates in discussion and presents complex ideas and information.</li> </ul>



**Job: System Protection Control Craftsman I & II**

**Critical Work Function: B. Implement Installation, Modification and Upgrade of Equipment**

KEY ACTIVITY	<i>Performance Indicators</i> How do we know when the task is performed well?	<i>Technical Knowledge</i> Skills, Abilities, Tools	<i>Employability Skills</i> SCANS Skills and Foundational Abilities
<p><b>B1</b> <i>Participate on the installation, modification or upgrade team</i></p>	<ul style="list-style-type: none"> <li>• Installation and removal of equipment is performed safely and in accordance with <i>Standards and Guides</i>.</li> <li>• Plan of action is developed and correctly implemented.</li> <li>• Installation and removal of equipment is completed to specifications and in a timely manner.</li> <li>• Input is given to modify the plan of action as required during installation, customization or upgrade.</li> <li>• Communications with all crafts involved in the project is maintained in a continuous manner.</li> <li>• Internal and external equipment experts are appropriately involved.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of safety standards and guides regarding equipment and BPA APM (Accident Prevention Manual).</li> <li>• Ability to develop and implement a plan of action.</li> <li>• Ability to modify the plans of action as needed.</li> <li>• Ability to understand and follow vendors' equipment specifications and recommendations.</li> <li>• Knowledge of equipment installation, modification and upgrade procedures.</li> <li>• Knowledge of vendor, equipment and system terminology.</li> <li>• Knowledge of information required by other crafts and departments.</li> <li>• Knowledge of appropriate use of internal and external equipment experts and how to contact and engage them in the installation, modification or upgrade.</li> <li>• Ability to follow and update schematics, design standards and wiring diagrams.</li> <li>• Knowledge of how work will impact the system operation.</li> </ul>	<ul style="list-style-type: none"> <li>• Understands technological requirements and results; analyzes task/technology relationship; proposes simple technological solutions.</li> <li>• Understands the system organization and hierarchy, follows processes and procedures, and responds to system demand.</li> <li>• Interprets information and transfers information between formats.</li> <li>• Maintains self control, accepts constructive criticism, sets well defined/realistic goals and demonstrates commitment to self improvement.</li> <li>• Confirms information and interprets, clarifies and influences communication.</li> <li>• Communicates appropriate verbal/non-verbal messages, actively participates in discussion and presents complex ideas and information.</li> <li>• Recognizes job tasks and distributes work assignments.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>B2</i></p> <p><i>Oversee move or removal of equipment</i></p>	<ul style="list-style-type: none"> <li>• Move and removal of equipment is performed safely and in accordance with <i>Standards and Guides</i>.</li> <li>• Plan of action is developed and correctly implemented.</li> <li>• Move and removal of equipment is completed to specifications and in a timely manner.</li> <li>• Input is given to modify the plan of action as required during installation, customization or upgrade.</li> <li>• Communications with all crafts involved in the project is continuously maintained.</li> <li>• Internal and external equipment experts are appropriately involved.</li> <li>• As-built drawings are properly updated to reflect the installation or removal of equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of safety standards and guides regarding equipment.</li> <li>• Ability to develop and implement a plan of action.</li> <li>• Ability to modify the plans of action as needed.</li> <li>• Ability to understand and follow vendors' equipment specifications and recommendations.</li> <li>• Knowledge of equipment installation and removal procedures.</li> <li>• Knowledge of vendor, equipment and system terminology.</li> <li>• Knowledge of information required by other crafts and departments.</li> <li>• Knowledge of appropriate use of internal and external equipment experts and how to contact and engage them in the installation, modification or upgrade.</li> <li>• Ability to understand and update as-built drawings to reflect current status.</li> <li>• Ability to follow and update schematics, design standards and wiring diagrams.</li> <li>• Knowledge of multiple trades and crafts and their functional boundaries and nomenclature.</li> </ul>	<ul style="list-style-type: none"> <li>• Understands the system organization and hierarchy, follows processes and procedures, and responds to system demand.</li> <li>• Defends own viewpoints, accepts responsibility for own behavior, understands own impact on others and demonstrates self confidence, self reliance, and self discipline.</li> <li>• Adheres to standards, demonstrates commitment to excellence and leads by example.</li> <li>• Troubleshoots and corrects malfunctions and failures; evaluates performance of technology; analyzes failures.</li> <li>• Analyzes situations and information, considers risks and implications, and compiles multiple viewpoints.</li> <li>• Conducts task-specific training, coaches others to apply related concepts, provides constructive feedback and develops appropriate training procedures.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><b>B3</b></p> <p><i>Test to ensure proper function during and after installation, modification, or upgrade</i></p>	<ul style="list-style-type: none"> <li>• Prior to starting the test, communications are made to other crafts regarding the test.</li> <li>• Testing is performed in accordance with <i>Standards and Guides</i>.</li> <li>• Test results are properly documented and submitted.</li> <li>• When work is completed, responsible parties are notified that equipment is ready for service.</li> <li>• Lockout tagout is performed when required.</li> <li>• Testing includes functional checks, in-service checks and remote data systems checks.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of testing procedures and parameters.</li> <li>• Knowledge of standards and guides regarding testing.</li> <li>• Knowledge and application of relevant safety policies and procedures, including lockout tagout.</li> <li>• Knowledge of how to interpret, apply and document test results to validate repair or installation.</li> <li>• Knowledge of notification procedures for return to service.</li> <li>• Knowledge of test equipment calibration and use.</li> <li>• Knowledge of and ability to perform functional checks, in-service checks and remote data systems checks.</li> <li>• Knowledge of equipment such as protective relays, revenue meters, DFR (Digital Fault Recorder), transducers, test equipment and event recorders.</li> <li>• Knowledge of equipment interfaces with the power system such as protective relaying, communications aided tripping, SCADA (Supervisory Control and Data Acquisition), PLC (Programmable Logic Controller), revenue metering, and DC batteries.</li> </ul>	<ul style="list-style-type: none"> <li>• Uses logic to draw conclusions, analyzes rules and principles and examines information for relevance and accuracy.</li> <li>• Interprets and applies new knowledge and experience and analyzes application of learning tools.</li> <li>• Understands technological requirements and results; analyzes task/technology relationship; proposes simple technological solutions.</li> <li>• Manipulates formulas and processes and interprets and organizes mathematical data.</li> <li>• Interprets and converts numerical data, predicts arithmetic results, organizes numerical data and sets numeric parameters.</li> <li>• Understands operation/interaction; manipulates technology for desired result; analyzes technology output; examines task/technology relationship.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<b>B4</b> Document installation or modification	<ul style="list-style-type: none"> <li>• Wiring diagrams and schematics are properly updated to reflect the installation.</li> <li>• Documentation is performed according to agency and agency and district policies and procedures.</li> <li>• Documents and appropriate files are input into database, filed or distributed as required.</li> <li>• Documentation is accurate, legible and complete and is completed in a timely manner.</li> <li>• Documentation is understandable and succinct.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of documentation policies and procedures.</li> <li>• Ability to input relevant and accurate data into manual and electronic system.</li> <li>• Knowledge of how documentation is used by other BPA departments and employees.</li> <li>• Ability to report findings and make recommendations based on documented history and findings.</li> <li>• Ability to use correct terminology.</li> <li>• Ability to update schematics, design standards and wiring diagrams.</li> </ul>	<ul style="list-style-type: none"> <li>• Records information accurately, creates original documents and summarizes information.</li> <li>• Understands the system organization and hierarchy, follows processes and procedures, and responds to system demand.</li> <li>• Pays attention to details, demonstrates initiative, monitors performance standards and follows up on assigned tasks.</li> <li>• Monitors system performance, analyzes system operation, distinguishes trends in performance and diagnoses performance deviations.</li> <li>• Utilizes integrated software, utilizes networks and manipulates, modifies and edits information.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><b>B5</b> Modify equipment</p>	<ul style="list-style-type: none"> <li>• Modification of equipment is performed safely and in accordance with <i>Standards and Guides</i>.</li> <li>• Directives and Alerts are accurately followed in a timely manner.</li> <li>• Internal and external equipment experts are appropriately involved.</li> <li>• Testing is performed to ensure that equipment operates correctly upon completion of modification.</li> <li>• Plan of action is developed and correctly implemented.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of safety standards and guides regarding equipment.</li> <li>• Ability to understand and follow Directives and Alerts.</li> <li>• Knowledge of equipment modification procedures.</li> <li>• Knowledge of vendor, equipment and system terminology.</li> <li>• Knowledge of appropriate use of internal and external equipment experts and how to contact and engage them in modification.</li> <li>• Ability to develop and implement a plan of action.</li> <li>• Ability to modify the plans of action as needed.</li> <li>• Knowledge of characteristics of equipment operating within normal parameters.</li> <li>• Ability to operate test equipment such as power system simulators, meter standards, oscilloscopes, multimeters and instrument controllers (PCs).</li> <li>• Knowledge of equipment such as protective relays, revenue meters, DFR (Digital Fault Recorder), transducers, test equipment and event recorders.</li> <li>• Knowledge of equipment interfaces with the power system such as protective relaying, communications aided tripping, SCADA (Supervisory Control and Data Acquisition), PLC (Programmable Logic Controller), revenue metering, and DC batteries.</li> <li>• Ability to follow and update schematics, design standards and wiring diagrams.</li> </ul>	<ul style="list-style-type: none"> <li>• Suggests system modifications/improvements and determines system components to be improved.</li> <li>• Understands technological requirements and results; analyzes task/technology relationship; proposes simple technological solutions.</li> <li>• Understands operation/interaction; manipulates technology for desired result; analyzes technology output; examines task/technology relationship.</li> <li>• Analyzes possible causes of problems, generates and evaluates solutions and generates and evaluates solutions.</li> <li>• Demonstrates creative thinking process while problem solving; develops creative solutions and applies them to new situations.</li> <li>• Analyzes situations and information, considers risks and implications, and compiles multiple viewpoints.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><b>B6</b> Upgrade equipment</p>	<ul style="list-style-type: none"> <li>• Upgrade of equipment is performed safely and in accordance with <i>Standards and Guides</i>.</li> <li>• Directives and Alerts are accurately followed in a timely manner.</li> <li>• Internal and external equipment experts are appropriately involved.</li> <li>• Testing is performed to ensure that equipment operates correctly upon completion of modification.</li> <li>• Work plan is developed and correctly implemented.</li> <li>• Commissioning tests are performed to ensure installation and configuration meet requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of safety standards and guides regarding equipment.</li> <li>• Ability to understand and follow Directives and Alerts.</li> <li>• Knowledge of equipment modification procedures.</li> <li>• Knowledge of vendor, equipment and system terminology.</li> <li>• Knowledge of appropriate use of internal and external equipment experts and how to contact and engage them in modification.</li> <li>• Ability to develop and implement a plan of action.</li> <li>• Ability to modify the plans of action as needed.</li> <li>• Knowledge of characteristics of equipment operating within normal parameters.</li> <li>• Ability to operate test equipment such as power system simulators, meter standards, oscilloscopes, multimeters and instrument controllers (PCs – personal computers).</li> <li>• Knowledge of equipment such as protective relays, revenue meters, DFR (Digital Fault Recorder), transducers, test equipment and event recorders.</li> <li>• Knowledge of equipment interfaces with the power system such as protective relaying, communications aided tripping, SCADA (Supervisory Control and Data Acquisition), PLC (Programmable Logic Controller), revenue metering, and DC batteries.</li> <li>• Ability to follow and update schematics, design standards and wiring diagrams.</li> </ul>	<ul style="list-style-type: none"> <li>• Suggests system modifications/improvements and determines system components to be improved.</li> <li>• Understands technological requirements and results; analyzes task/technology relationship; proposes simple technological solutions.</li> <li>• Understands operation/interaction; manipulates technology for desired result; analyzes technology output; examines task/technology relationship.</li> <li>• Demonstrates creative thinking process while problem solving; develops creative solutions and applies them to new situations.</li> <li>• Analyzes situations and information, considers risks and implications, and compiles multiple viewpoints.</li> </ul>

**Job: System Protection Control Craftsman I & II**

**Critical Work Function: C. Analyze Power System Equipment Performance**

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><b>C1.</b> <i>Gather, analyze and store disturbance data</i></p>	<ul style="list-style-type: none"> <li>• Remote access of equipment is efficiently maintained.</li> <li>• Remote access is verified to ensure it is working properly prior to gathering disturbance data.</li> <li>• Disturbance data is stored electronically and is accessible by appropriate personnel.</li> <li>• Security procedures are followed for storing disturbance data.</li> <li>• The correct software is properly used to gather, analyze and store data.</li> <li>• Disturbance data is correctly analyzed to ensure equipment is operating properly and to identify problems and magnitude and location of fault.</li> </ul>	<ul style="list-style-type: none"> <li>• Comprehensive knowledge of proper operations of system equipment</li> <li>• Basic knowledge of the power system and its components.</li> <li>• Knowledge of software used to gather, analyze and store data and ability to use that software.</li> <li>• Knowledge of devices and procedures for remote access of equipment.</li> <li>• Knowledge of electronic storage locations and procedures.</li> <li>• Knowledge of security and password procedures.</li> <li>• Knowledge of signature analysis and metrics which indicate properly operating equipment and problems.</li> <li>• Ability to use disturbance data to identify magnitude and location of faults.</li> <li>• Ability to use a scientific calculator.</li> </ul>	<ul style="list-style-type: none"> <li>• Predicts outcomes, analyzes data, integrates multiple items of data and contrasts conflicting data.</li> <li>• Monitors system performance, analyzes system operation, distinguishes trends in performance and diagnoses performance deviations.</li> <li>• Summarizes, integrates and analyzes information.</li> <li>• Interprets information and transfers information between formats.</li> <li>• Utilizes previous training and experience to predict outcomes; visually analyzes relationship between parts/whole and process/procedure and interprets charts, graphs and symbols.</li> <li>• Analyzes situations and information, considers risks and implications, and compiles multiple viewpoints.</li> <li>• Utilizes integrated software, utilizes networks and manipulates, modifies and edits information.</li> <li>• Manipulates formulas and processes and interprets and organizes mathematical data.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><b>C2.</b> <i>Gather and analyze metering data</i></p>	<ul style="list-style-type: none"> <li>• Efficiency is maintained regarding remote access of equipment.</li> <li>• Remote access is verified to ensure it is working properly prior to gathering metering data.</li> <li>• Metering data is stored electronically and is accessible by appropriate personnel.</li> <li>• Security procedures are followed for storing metering data.</li> <li>• The correct software is properly used to gather and analyze data.</li> <li>• Data is correctly analyzed to ensure equipment is operating properly and to identify problems.</li> </ul>	<ul style="list-style-type: none"> <li>• Comprehensive knowledge of proper operations of system equipment</li> <li>• Basic knowledge of the power system and its components.</li> <li>• Knowledge of software to gather, analyze and store data and ability to use that software.</li> <li>• Knowledge of devices and procedures for remote access of equipment.</li> <li>• Knowledge of electronic storage locations and procedures.</li> <li>• Knowledge of security and password procedures.</li> <li>• Knowledge of revenue metering systems which indicate properly operating equipment and problems.</li> <li>• Knowledge of and ability to work with billing department.</li> </ul>	<ul style="list-style-type: none"> <li>• Predicts outcomes, analyzes data, integrates multiple items of data and contrasts conflicting data.</li> <li>• Monitors system performance, analyzes system operation, distinguishes trends in performance and diagnoses performance deviations.</li> <li>• Summarizes, integrates and analyzes information.</li> <li>• Interprets information and transfers information between formats.</li> <li>• Utilizes previous training and experience to predict outcomes; visually analyzes relationship between parts/whole and process/procedure and interprets charts, graphs and symbols.</li> <li>• Analyzes situations and information, considers risks and implications, and compiles multiple viewpoints.</li> <li>• Utilizes integrated software, utilizes networks and manipulates, modifies and edits information.</li> <li>• Manipulates formulas and processes and interprets and organizes mathematical data.</li> </ul>



**Job: System Protection Control Craftsman I & II**  
**Critical Work Function: D. Perform Technical and Administrative Duties**

KEY ACTIVITY	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<b>D1</b> <i>Maintain records and reports</i>	<ul style="list-style-type: none"> <li>• Records and reports are accurate and are filed in proper locations.</li> <li>• Records and reports are submitted in a timely manner to appropriate personnel and departments.</li> <li>• Records and reports are kept up to date.</li> <li>• Records and reports are maintained in accordance with district policies.</li> <li>• Security and retention protocols are accurately followed.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of reporting requirements.</li> <li>• Knowledge of policies regarding records and reports.</li> <li>• Knowledge of security and retention protocols.</li> </ul>	<ul style="list-style-type: none"> <li>• Records information accurately, creates original documents and summarizes information.</li> <li>• Identifies relevant details, facts, specifications, follows set of instructions and qualifies/analyzes information.</li> <li>• Understands the system organization and hierarchy, follows processes and procedures, and responds to system demand.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>D2</i> <i>Assist in training other employees</i></p>	<ul style="list-style-type: none"> <li>• Training is effectively given and understood, is relevant and is timely.</li> <li>• Questions are answered in a courteous and respectful manner.</li> <li>• Communication is appropriate and proper terminology is used.</li> <li>• Receptivity and support are provided to all trainees to help them advance.</li> <li>• Proficiency in subject matter is maintained.</li> <li>• Other crafts are invited to attend trainings appropriate to their job performance and career development.</li> <li>• Appropriate OJT (on-the-job) opportunities are identified and communicated to fellow employees and trainees.</li> <li>• Training has defined objectives which are based on job tasks.</li> <li>• The effectiveness of training is measured by improved performance and demonstration of skills.</li> <li>• Agency goals are supported through effective mentorship.</li> <li>• All training materials are ready and accessible.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of BPA terminology.</li> <li>• Ability to identify OJT training opportunities.</li> <li>• Ability to identify technical training objectives.</li> <li>• Knowledge of subject matter (SPC equipment, electrical theory, data disturbance equipment).</li> </ul>	<ul style="list-style-type: none"> <li>• Conducts task-specific training, coaches others to apply related concepts, provides constructive feedback and develops appropriate training procedures.</li> <li>• Interprets and applies new knowledge and experience and analyzes application of learning tools.</li> <li>• Communicates appropriate verbal/non-verbal messages, actively participates in discussion and presents complex ideas and information.</li> <li>• Recognizes differences, understands the legal aspects of discrimination, respects the rights of others and recognizes the value of diversity.</li> <li>• Confirms information and interprets, clarifies and influences communication.</li> <li>• Suggests system modifications/improvements and determines system components to be improved.</li> <li>• Defends own viewpoints, accepts responsibility for own behavior, understands own impact on others and demonstrates self confidence, self reliance, and self discipline.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>D3.</i> <i>Conduct annual personal property inventory</i></p>	<ul style="list-style-type: none"> <li>• All assigned inventoried and tagged equipment is successfully accounted for.</li> <li>• Inventory is conducted annually and in accordance with agency policies.</li> <li>• Inventory is submitted to appropriate personnel and departments in a timely manner.</li> <li>• Inventory is accurate and complete.</li> <li>• Inventory transfers are accepted or initiated in a timely manner.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of software program for personal property inventory.</li> <li>• Knowledge of policies regarding annual personal property inventory.</li> <li>• Knowledge of inventory submittal procedures.</li> <li>• Ability to track equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Orders and maintains inventory and monitors safe and efficient utilization of materials.</li> <li>• Demonstrates honesty and trustworthiness, accepts responsibility for own behavior, and analyzes implications of decisions.</li> <li>• Understands operation/interaction; manipulates technology for desired result; analyzes technology output; examines task/technology relationship.</li> <li>• Utilizes integrated software, utilizes networks and manipulates, modifies and edits information.</li> <li>• Identifies relevant details, facts, specifications, follows set of instructions and qualifies/analyzes information.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<b>D4.</b> <i>Perform accounting and payroll functions</i>	<ul style="list-style-type: none"> <li>• Accuracy and timely submittal of timesheets is verified.</li> <li>• Accuracy of entries into BES (Business Enterprise System) is verified.</li> <li>• P-Card statements are accurate and completed in a timely manner.</li> <li>• Travel statements / <i>govtrip</i> are accurate and completed in a timely manner.</li> <li>• Expenditure needs are communicated to supervisor in a timely manner.</li> <li>• Expenditures are kept in line with budget guidelines.</li> <li>• P-Card purchases are made within guidelines.</li> </ul>	<ul style="list-style-type: none"> <li>• Understand the basic accounting categories.</li> <li>• Knowledge of BES system and capital work order process.</li> <li>• Knowledge of payroll and expense authorization procedures.</li> <li>• Knowledge of SPC accounting manual and cheat sheets.</li> <li>• Knowledge of government credit card rules (P-Card, travel card, GSA card).</li> <li>• Knowledge of travel regulations.</li> </ul>	<ul style="list-style-type: none"> <li>• Recognizes job tasks and distributes work assignments.</li> <li>• Interprets and converts numerical data, predicts arithmetic results, organizes numerical data and sets numeric parameters.</li> <li>• Demonstrates honesty and trustworthiness, accepts responsibility for own behavior, and analyzes implications of decisions.</li> <li>• Identifies relevant details, facts, specifications, follows set of instructions and qualifies/analyzes information.</li> <li>• Performs routine recordkeeping.</li> </ul>
<b>D5</b> <i>Perform housekeeping</i>	<ul style="list-style-type: none"> <li>• Materials are kept in a safe manner.</li> <li>• Unsafe conditions are identified and reported promptly.</li> <li>• Work area is clean and clear of safety hazards.</li> <li>• All appropriate safety equipment is present, up-to-date and in proper working order.</li> <li>• Tools and equipment are cleaned, returned to proper location, and tagged if broken.</li> <li>• All hazardous materials procedures are followed with respect to handling and disposal in accordance with <i>Standards and Guides</i>.</li> <li>• Shared tools are stored in designated location.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of hazardous materials and safety procedures and BPA APM (Accident Prevention Manual).</li> <li>• Knowledge and ability to identify and correct for unsafe conditions.</li> <li>• Knowledge of safety equipment and its proper working order.</li> <li>• Knowledge of proper cleaning and storage procedures.</li> <li>• Ability to perform inspection of tools and materials (restock, recycle or repair)</li> <li>• Ability to identify nonfunctional tools for repair and knowledge of communications and tagging requirements for nonfunctioning tools.</li> <li>• Knowledge of designated storage areas for shared tools.</li> </ul>	<ul style="list-style-type: none"> <li>• Troubleshoots and corrects malfunctions and failures; evaluates performance of technology; analyzes failures.</li> <li>• Orders and maintains inventory and monitors safe and efficient utilization of materials.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>D6</i> <i>Maintain proficiency in current and new technologies</i></p>	<ul style="list-style-type: none"> <li>• Technical trainings are attended with full participation.</li> <li>• Participation in continuous learning opportunities is self-initiated.</li> <li>• Equipment instruction manuals are reviewed as required to perform repair, maintenance and installation.</li> <li>• Training needs are communicated and followed up with supervisors.</li> <li>• Baseline knowledge of all categories of equipment in the district is maintained and kept current.</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to locate schedule and access trainings offered by the organization.</li> <li>• Knowledge of location of equipment instruction manuals and how to use them.</li> <li>• Knowledge of location of materials and information on all categories of equipment in the district.</li> <li>• Knowledge of process to request new training classes.</li> </ul>	<ul style="list-style-type: none"> <li>• Pays attention to details, demonstrates initiative, monitors performance standards and follows up on assigned tasks.</li> <li>• Interprets and applies new knowledge and experience and analyzes application of learning tools.</li> <li>• Understands technological requirements and results; analyzes task/technology relationship; proposes simple technological solutions.</li> <li>• Understands operation/interaction; manipulates technology for desired result; analyzes technology output; examines task/technology relationship.</li> <li>• Troubleshoots and corrects malfunctions and failures; evaluates performance of technology; analyzes failures.</li> <li>• Identifies relevant details, facts, specifications, follows set of instructions and qualifies/analyzes information.</li> </ul>

**Job: System Protection Control Craftsman I & II**

**Critical Work Function: E. Communicate with Others to Promote Safety and Productivity**

KEY ACTIVITY	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>E1</i> <i>Participate in meetings and problem solving groups</i></p>	<ul style="list-style-type: none"> <li>• Meetings are attended with active participation and advance preparation.</li> <li>• Information is accurately given and received.</li> <li>• Issues are accurately and thoroughly discussed and solutions are defined.</li> <li>• Communication is respectfully performed without discrimination.</li> <li>• Communication is clear and relevant.</li> <li>• Action items are carried out in a timely manner.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of BPA and other crafts' terminology.</li> <li>• Knowledge of the power transmission system.</li> <li>• Knowledge of equipment such as protective relays, revenue meters, DFR (Digital Fault Recorder), transducers, test equipment and event recorders.</li> <li>• Knowledge of the roles and responsibilities of agency personnel, work groups and departments.</li> <li>• Knowledge of SPC processes and procedures.</li> <li>• Knowledge of APM (Accident Prevention Manual).</li> <li>• Knowledge of BPA ethics and diversity policies.</li> </ul>	<ul style="list-style-type: none"> <li>• Assists and encourages team members, actively participates, works to improve team skills and demonstrates commitment.</li> <li>• Understands the system organization and hierarchy, follows processes and procedures, and responds to system demand.</li> <li>• Confirms information and interprets, clarifies and influences communication.</li> <li>• Communicates appropriate verbal/non-verbal messages, actively participates in discussion and presents complex ideas and information.</li> <li>• Pays attention to details, demonstrates initiative, monitors performance standards and follows up on assigned tasks.</li> <li>• Adheres to standards, demonstrates commitment to excellence and leads by example.</li> <li>• Understands negotiations process, identifies conflicts and demonstrates composure.</li> <li>• Responds appropriately to others, takes active interest in and willingly helps others and modifies behavior to environment.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>E2</i></p> <p><i>Communicate safety and job-specific needs</i></p>	<ul style="list-style-type: none"> <li>• Communication is in accordance with BPA APM (Accident Prevention Manual).</li> <li>• The high priority nature of safety is communicated.</li> <li>• Job-related issues and concerns are discussed and quickly resolved.</li> <li>• Communication demonstrates knowledge of customer and business needs.</li> <li>• Communication is clear and relevant to the situation.</li> <li>• Communication is made in a timely and accurate manner to the correct parties.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of the criticality of safety in the workplace.</li> <li>• Knowledge of BPA and other crafts' terminology.</li> <li>• Knowledge of customer and business needs.</li> <li>• Knowledge of the roles and responsibilities of company personnel and departments.</li> <li>• Knowledge of APM (Accident Prevention Manual) requirements with respect to job briefings.</li> </ul>	<ul style="list-style-type: none"> <li>• Understands the system organization and hierarchy, follows processes and procedures, and responds to system demand.</li> <li>• Communicates appropriate verbal/non-verbal messages, actively participates in discussion and presents complex ideas and information.</li> <li>• Assists and encourages team members, actively participates, works to improve team skills and demonstrates commitment.</li> <li>• Defends own viewpoints, accepts responsibility for own behavior, understands own impact on others and demonstrates self confidence, self reliance, and self discipline.</li> <li>• Responds appropriately to others, takes active interest in and willingly helps others and modifies behavior to environment.</li> <li>• Demonstrates honesty and trustworthiness, accepts responsibility for own behavior, and analyzes implications of decisions.</li> <li>• Understands the legal aspects of discrimination, respects the rights of others and recognizes the value of diversity.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>E3</i> <i>Report observations of abnormalities</i></p>	<ul style="list-style-type: none"> <li>• Ongoing preventive maintenance problems and safety concerns are communicated to appropriate people in a timely manner.</li> <li>• Communication is clear and relevant to the situation.</li> <li>• Suggestions are made verbally or in written form.</li> <li>• Equipment history is consulted where possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of maintenance procedures and ongoing preventive maintenance problems.</li> <li>• Knowledge of characteristics of equipment operating within and outside of normal parameters.</li> <li>• Ability to locate, prepare and use equipment histories and trouble report.</li> </ul>	<ul style="list-style-type: none"> <li>• Records information accurately, creates original documents and summarizes information.</li> <li>• Understands the system organization and hierarchy, follows processes and procedures, and responds to system demand.</li> <li>• Monitors system performance, analyzes system operation, distinguishes trends in performance and diagnoses performance deviations.</li> <li>• Uses logic to draw conclusions, analyzes rules and principles and examines information for relevance and accuracy.</li> <li>• Demonstrates honesty and trustworthiness, accepts responsibility for own behavior, and analyzes implications of decisions.</li> <li>• Responds appropriately to others, takes active interest in and willingly helps others and modifies behavior to environment.</li> <li>• Defends own viewpoints, accepts responsibility for own behavior, understands own impact on others and demonstrates self confidence, self reliance, and self discipline.</li> </ul>



<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>E4.</i> <i>Identify and report accidents and unsafe conditions and take corrective action</i></p>	<ul style="list-style-type: none"> <li>• Accident and injury reports are completed accurately and in a timely manner.</li> <li>• Conditions that present a threat to health and safety are identified and promptly reported.</li> <li>• Corrective actions are identified communicated to appropriate personnel effectively and in a timely manner.</li> <li>• Corrective actions are taken promptly (including work stoppage) according to agency and district procedures.</li> <li>• APM (Accident Prevention Manual) rules are followed for qualified electrical workers.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of accident and injury reports.</li> <li>• Ability to identify and take action on an unsafe condition.</li> <li>• Knowledge of corrective actions.</li> <li>• Knowledge of reporting procedures for unsafe conditions.</li> <li>• Knowledge of roles and responsibilities of personnel at BPA.</li> <li>• Thorough knowledge of APM rules.</li> <li>• Ability to prepare accident reports such as CA-1.</li> </ul>	<ul style="list-style-type: none"> <li>• Defends own viewpoints, accepts responsibility for own behavior, understands own impact on others and demonstrates self confidence, self reliance, and self discipline.</li> <li>• Understands the system organization and hierarchy, follows processes and procedures, and responds to system demand.</li> <li>• Records information accurately, creates original documents and summarizes information.</li> <li>• Adheres to standards, demonstrates commitment to excellence and leads by example.</li> <li>• Demonstrates honesty and trustworthiness, accepts responsibility for own behavior, and analyzes implications of decisions.</li> <li>• Pays attention to details, demonstrates initiative, monitors performance standards and follows up on assigned tasks.</li> <li>• Suggests system modifications/improvements and determines system components to be improved.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>E5.</i> <i>Communicate and coordinate with BPA management and coworkers</i></p>	<ul style="list-style-type: none"> <li>• Supervisor and co-workers are kept informed of events in the district.</li> <li>• BPA policies, goals and targets are clearly communicated and supported.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of BPA policies, goals and targets.</li> <li>• Ability to determine when and how to consult with supervisor and co-workers.</li> <li>• Ability to prepare safety reports.</li> </ul>	<ul style="list-style-type: none"> <li>• Confirms information and interprets, clarifies and influences communication.</li> <li>• Understands the legal aspects of discrimination, respects the rights of others and recognizes the value of diversity.</li> <li>• Communicates appropriate verbal/non-verbal messages, actively participates in discussion and presents complex ideas and information.</li> <li>• Responds appropriately to others, takes active interest in and willingly helps others and modifies behavior to environment.</li> <li>• Utilizes integrated software, utilizes networks and manipulates, modifies and edits information.</li> <li>• Pays attention to details, demonstrates initiative, monitors performance standards and follows up on assigned tasks.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>E6.</i> <i>Respond to requests from customer</i></p>	<ul style="list-style-type: none"> <li>• Customer needs are recognized and acknowledged.</li> <li>• Information related to customer requests is gathered in a timely manner and thoroughly analyzed.</li> <li>• Customer requests are responded to in a timely manner.</li> <li>• Information about requests and actions taken are communicated to appropriate personnel effectively and in a timely manner.</li> <li>• Communications with customers comply with standards of conduct and sensitive communications policies.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of customer needs, issues and priorities.</li> <li>• Knowledge of customer rules and protocols when working inside their facilities.</li> <li>• Knowledge of the power system and equipment.</li> <li>• Knowledge of the information needs of BPA departments and personnel regarding requests from customers.</li> <li>• Knowledge of standards of conduct and sensitive communications policies.</li> </ul>	<ul style="list-style-type: none"> <li>• Confirms information and interprets, clarifies and influences communication.</li> <li>• Analyzes and responds to customer needs, demonstrates commitment to customer and relates to customer concerns.</li> <li>• Demonstrates honesty and trustworthiness, accepts responsibility for own behavior, and analyzes implications of decisions.</li> <li>• Understands negotiations process, identifies conflicts and demonstrates composure.</li> <li>• Utilizes integrated software, utilizes networks and manipulates, modifies and edits information.</li> <li>• Understands the legal aspects of discrimination, respects the rights of others and recognizes the value of diversity.</li> <li>• Responds appropriately to others, takes active interest in and willingly helps others and modifies behavior to environment.</li> </ul>

**Job: System Protection Control Craftsman I & II**  
**Critical Work Function: F. Perform Job Planning and Scheduling**

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>F1</i> <i>Schedule equipment outages</i></p>	<ul style="list-style-type: none"> <li>• Equipment work permit, clearance or outage is requested in accordance with district policies and procedures.</li> <li>• Progress of request is checked to verify that approval has been obtained.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of equipment work permit, clearance and outage request policies and procedures and APM (Accident Prevention Manual).</li> <li>• Ability to determine when approval has been obtained.</li> <li>• Ability to coordinate with other trades.</li> <li>• Ability to understand BPA schedules (such as construction, maintenance, work plans) and estimate amount of time to complete work.</li> </ul>	<ul style="list-style-type: none"> <li>• Recognizes job tasks and distributes work assignments.</li> <li>• Identifies relevant details, facts, specifications, follows set of instructions and qualifies/analyzes information.</li> <li>• Records information accurately, creates original documents and summarizes information.</li> <li>• Adheres to standards, demonstrates commitment to excellence and leads by example.</li> <li>• Effectively manages time; prepares and organizes multiple schedules and manages timelines.</li> <li>• Maintains self control, accepts constructive criticism, sets well defined/realistic goals and demonstrates commitment to self improvement.</li> <li>• Pays attention to details, demonstrates initiative, monitors performance standards and follows up on assigned tasks.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>F2</i> <i>Gather materials, tools, software, documents and equipment</i></p>	<ul style="list-style-type: none"> <li>• Required materials, tools, software and documents are accurately identified, and are gathered in adequate quantities to perform scheduled work.</li> <li>• Tools and equipment are in proper working order and calibrated as required.</li> <li>• Software is the appropriate version for the equipment being worked on.</li> <li>• Proper documents or reference materials are present.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of the materials, tools, software and documents required for a job.</li> <li>• Knowledge of proper functioning and repair of tools.</li> <li>• Knowledge of required calibration for tools and devices.</li> <li>• Ability to match equipment and software.</li> <li>• Knowledge of documents and reference materials required for a job.</li> </ul>	<ul style="list-style-type: none"> <li>• Interprets information and transfers information between formats.</li> <li>• Troubleshoots and corrects malfunctions and failures; evaluates performance of technology; analyzes failures.</li> <li>• Identifies relevant details, facts, specifications, follows set of instructions and qualifies/analyzes information.</li> <li>• Utilizes integrated software, utilizes networks and manipulates, modifies and edits information.</li> <li>• Understands the system organization and hierarchy, follows processes and procedures, and responds to system demand.</li> <li>• Maintains self control, accepts constructive criticism, sets well defined/realistic goals and demonstrates commitment to self improvement.</li> <li>• Orders and maintains inventory and monitors safe and efficient utilization of materials.</li> </ul>
<p><i>F3</i> <i>Order or verify materials and parts not on hand</i></p>	<ul style="list-style-type: none"> <li>• Materials needed are accurately identified.</li> <li>• The proper work order is used to create a material request.</li> <li>• Items are requisitioned through BES (Business Enterprise System), SPC Spare Parts or the local parts vendor.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of the materials and parts required for a job.</li> <li>• Knowledge of procedures for work orders and material requests.</li> <li>• Knowledge of how to use BES, procedures for SPC Spare Parts and local vendors.</li> <li>• Knowledge of personnel contacts to expedite parts.</li> </ul>	<ul style="list-style-type: none"> <li>• Orders and maintains inventory and monitors safe and efficient utilization of materials.</li> <li>• Performs routine recordkeeping.</li> <li>• Suggests system modifications/improvements and determines system components to be improved.</li> <li>• Interprets and converts numerical data, predicts arithmetic results, organizes numerical data and sets numeric parameters.</li> <li>• Utilizes integrated software, utilizes networks and manipulates, modifies and edits information.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>F4</i></p> <p><i>Establish priorities</i></p>	<ul style="list-style-type: none"> <li>• Agency goals are incorporated into scheduling priorities.</li> <li>• Knowledge of construction schedules and maintenance schedule reports and how to use them.</li> <li>• Ability to obtain input on priorities from supervisors.</li> <li>• Maintenance work is scheduled to comply with published agency maintenance priorities.</li> <li>• Priorities are adjusted as required to meet changing situations.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of agency goals and BPA business plan.</li> <li>• Knowledge of construction schedules and maintenance schedule reports.</li> <li>• Ability to locate and understand published agency maintenance priorities.</li> <li>• Ability to understand BPA schedules (such as construction, maintenance, work plans) and estimate amount of time to complete work.</li> <li>• Ability to change work schedule without notice.</li> </ul>	<ul style="list-style-type: none"> <li>• Maintains self control, accepts constructive criticism, sets well defined/realistic goals and demonstrates commitment to self improvement.</li> <li>• Understands the system organization and hierarchy, follows processes and procedures, and responds to system demand.</li> <li>• Defends own viewpoints, accepts responsibility for own behavior, understands own impact on others and demonstrates self confidence, self reliance, and self discipline.</li> <li>• Understands negotiations process, identifies conflicts and demonstrates composure.</li> <li>• Recognizes job tasks and distributes work assignments.</li> <li>• Summarizes, integrates and analyzes information.</li> <li>• Pays attention to details, demonstrates initiative, monitors performance standards and follows up on assigned tasks.</li> </ul>

**Job: System Protection Control Craftsman I & II**  
**Critical Work Function: G. Maintain Tools, Equipment and Supplies**

KEY ACTIVITY	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<b>G1</b> <i>Maintain test equipment, hardware and supplies</i>	<ul style="list-style-type: none"> <li>• Calibration tags are checked to verify if calibration is needed.</li> <li>• Batteries are checked to ensure they are charged.</li> <li>• Leads are checked to ensure they are in good working condition.</li> <li>• Firmware is updated on test equipment.</li> <li>• Test equipment manuals are consulted to identify test equipment operation and specifications.</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to operate test equipment such as power system simulators, meter standards, oscilloscopes, multimeters and instrument controllers (PCs).</li> <li>• Knowledge of proper operation of test equipment.</li> <li>• Ability to check batteries and leads of test equipment.</li> <li>• Ability to update firmware.</li> <li>• Ability to locate, use and understand test equipment manuals and specifications.</li> <li>• Ability to check hand tools to ensure they are in working order.</li> </ul>	<ul style="list-style-type: none"> <li>• Performs routine recordkeeping.</li> <li>• Troubleshoots and corrects malfunctions and failures; evaluates performance of technology; analyzes failures.</li> <li>• Orders and maintains inventory and monitors safe and efficient utilization of materials.</li> <li>• Identifies relevant details, facts, specifications, follows set of instructions and qualifies/analyzes information.</li> <li>• Maintains self control, accepts constructive criticism, sets well defined/realistic goals and demonstrates commitment to self improvement.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><i>G2</i></p> <p><i>Maintain databases and software</i></p>	<ul style="list-style-type: none"> <li>• Instrument controllers (PC's -- personal computers) are updated with latest specialized software on a routine basis to support SPC equipment.</li> <li>• Data files are properly backed up to server or district archive location.</li> <li>• Software is reloaded as needed.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of instrument controllers.</li> <li>• Ability to update PCs with latest specialized software to support SPC equipment.</li> <li>• Knowledge of data backup procedures and locations.</li> <li>• Ability to locate software programs and reload on PCs.</li> <li>• Knowledge of district policies regarding maintenance of databases.</li> </ul>	<ul style="list-style-type: none"> <li>• Utilizes integrated software, utilizes networks and manipulates, modifies and edits information.</li> <li>• Troubleshoots and corrects malfunctions and failures; evaluates performance of technology; analyzes failures.</li> <li>• Interprets and applies new knowledge and experience and analyzes application of learning tools.</li> <li>• Identifies relevant details, facts, specifications, follows set of instructions and qualifies/analyzes information.</li> <li>• Records information accurately, creates original documents and summarizes information.</li> <li>• Demonstrates creative thinking process while problem solving; develops creative solutions and applies them to new situations.</li> <li>• Uses logic to draw conclusions, analyzes rules and principles and examines information for relevance and accuracy.</li> </ul>



<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<b>G3</b> <i>Maintain vehicle stock</i>	<ul style="list-style-type: none"> <li>• Vehicle is in good working order and scheduled maintenance is consistently performed.</li> <li>• Vehicle safety equipment is available and up-to-date.</li> <li>• Agency and district requirements for vehicle use are followed.</li> <li>• Adequate tools, equipment and materials for are present for everyday use or scheduled work.</li> <li>• <i>Standards and Guides</i> are followed.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of characteristics of a vehicle in good working order or in need of repair.</li> <li>• Knowledge of scheduled maintenance for vehicles and how to obtain it.</li> <li>• Knowledge of vehicle safety equipment.</li> <li>• Ability to determine if safety equipment is up-to-date.</li> <li>• Knowledge of tools equipment and materials required for everyday use or a scheduled job.</li> <li>• Knowledge of <i>Standards and Guides</i>.</li> </ul>	<ul style="list-style-type: none"> <li>• Orders and maintains inventory and monitors safe and efficient utilization of materials.</li> <li>• Suggests system modifications/improvements and determines system components to be improved.</li> <li>• Analyzes situations and information, considers risks and implications, and compiles multiple viewpoints.</li> </ul>

<b>KEY ACTIVITY</b>	<b>Performance Indicators</b> How do we know when the task is performed well?	<b>Technical Knowledge</b> Skills, Abilities, Tools	<b>Employability Skills</b> SCANS Skills and Foundational Abilities
<p><b>G4</b> <i>Create test routines</i></p>	<ul style="list-style-type: none"> <li>• Using current testing software, routines are created to adequately maintain relays.</li> <li>• Routine follows standards and guides for equipment maintenance, troubleshooting and commissioning.</li> <li>• Maintain proficiency at using current test equipment and test software to create routines.</li> <li>• Routines adapt old test procedures to new technology.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of current test equipment and testing software.</li> <li>• Knowledge of routines required to maintain relays.</li> <li>• Knowledge of standards and guides for equipment maintenance, troubleshooting and commissioning.</li> <li>• Knowledge of documents and reference materials required to keep current on testing software, and how to obtain training if needed.</li> <li>• Ability to adapt old test procedures to new technology.</li> <li>• Knowledge of equipment such as protective relays, revenue meters, DFR (Digital Fault Recorder), transducers, test equipment and event recorders.</li> <li>• Knowledge of the tests required for specific equipment.</li> <li>• Ability to interpret and implement manufacturer's requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrates creative thinking process while problem solving; develops creative solutions and applies them to new situations.</li> <li>• Interprets and converts numerical data, predicts arithmetic results, organizes numerical data and sets numeric parameters.</li> <li>• Manipulates formulas and processes and interprets and organizes mathematical data.</li> <li>• Understands technological requirements and results; analyzes task/technology relationship; proposes simple technological solutions.</li> <li>• Utilizes previous training and experience to predict outcomes; visually analyzes relationship between parts/whole and process/procedure and interprets charts, graphs and symbols.</li> <li>• Uses logic to draw conclusions, analyzes rules and principles and examines information for relevance and accuracy.</li> <li>• Conducts task-specific training, coaches others to apply related concepts, provides constructive feedback and develops appropriate training procedures.</li> </ul>