Telecommunications Maintenance Technician Skill Standards

TEXAS WORKFORCE
INVESTMENT COUNCIL

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Critical Work Function	Key Activity	Key Activity	Key Activity
1. Ensure that departments are efficiently managed and able to meet customer demands.	1.1 Plan the project incorporating design, layout, equipment needed, technical references, and appropriate personnel assignments.	1.2 Implement the project plan, incorporating strategies and equipment to meet customers' needs.	1.3 Maintain accurate non-technical and technical records and reports.
2. Identify and solve real and potential equipment problems.	2.1 Perform technical analysis to determine operational effectiveness.	2.2 Utilize available resources to solve equipment problems.	
3. Install telecommunications equipment to meet network needs and customer needs.	3.1 Establish effective transport infrastructure.	3.2 Establish effective distribution infrastructure.	
4. Ensure telecommunication equipment operates at expected performance levels.	4.1 Perform maintenance on telecommunications equipment as required.	4.2 Perform needed repairs on telecommunications equipment as required.	4.3 Continuously upgrade, improve, or replace telecommunications equipment to meet customer needs.
5. Ensure that customer's expectations are met through effective customer service.	5.1 Implement an effective customer service strategy to resolve customer concerns and recommend solutions.	5.2 Continuously update and inform the customer by serving as a technical resource.	
6. Observe safety procedures associated with telecommunications equipment.	6.1 Perform required job components while adhering to safe procedures.		
7. Ensure that employees/teams develop and improve technical and interpersonal skills.	7.1 Increase technical and interpersonal knowledge and skills to ensure effective personal and team performance.	7.2 Utilize effective communication skills to enhance individual and team performance.	

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Occupational Title: Telecommunications Maintenance Technician			
Critical Work Function 1. Ensure that departments are efficiently managed and able to meet customer demands.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria** *How do we know when the key activity is performed well or performed successfully?*	**Occupational Skills & Knowledge** *What should the technician know and what skills should the technician have in order to do the activity?*	**Conditions** *What tools must the technician use in order to do the activity?*
1.1 Plan the project incorporating design, layout, equipment needed, technical references, and appropriate personnel assignments.	Plan new projects showing layout diagrams, time to complete, expenses, and equipment needed Design layout for cable facilities Select technical files and manuals required to do a job and update technician education Review equipment specifications to ensure equipment compatibility Assign workers to perform jobs based on their skills and ability to perform the task Formal and/or informal customer surveys indicate general satisfaction with performance and equipment.	Knowledge of PC usage and MS Project, Database software, AutoCAD, Excel, e-mail, and system software Knowledge and usage of Internet browsers and data transfer Understanding of human resource information	Using the following tools, resources and equipment: MS Project Database software AutoCAD software Internet browser MS Excel System software Human resource information Email software Data transfer software

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Occupational Title: Telecommunications Maintenance Technician			
Critical Work Function 1. Ensure that departments are efficiently managed and able to meet customer demands.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria** *How do we know when the key activity is performed well or performed successfully?*	**Occupational Skills & Knowledge** *What should the technician know and what skills should the technician have in order to do the activity?*	**Conditions** *What tools must the technician use in order to do the activity?*
1.2 Implement the project plan, incorporating strategies and equipment to meet customers' needs.	1.2.1 Confirm procedures are clear and understandable prior to starting the task. 1.2.2 Maintain adequate inventory of spare equipment. 1.2.3 Change strategies and procedures to meet a changing work environment. Utilize computers to perform multiple job tasks, such as email, databases, etc. Use maps to navigate to and from job sites. Confirm proper equipment and tools prior to starting installation procedures. Formal and/or informal customer surveys indicate general satisfaction with performance and equipment.	Knowledge of PC usage and database software, inventory (Core Integrated Environment), and e-mail software Knowledge and usage of Internet browsers Knowledge and usage of calibration equipment	Using the following tools, resources, and equipment: Internet browser Database software Inventory software (Core Integrated Environment) E-mail software Calibration equipment
1.3 Maintain accurate non-technical and technical records and reports.	1.3.1 Maintain accurate non-technical and technical records and reports. 1.3.2 Coordinate receipt and shipment of equipment necessary for a project. 1.3.3 Categorize various figures, reports, and data. 1.3.4 Calculate time and charges for billable service. 1.3.5 Documentation meets supervisor, customer, and/or departmental specifications and guidelines.	Knowledge of PC usage and database, e-mail, inventory, MS Office, and work management system software Knowledge of FCC, OHSA, ANSI and other regulatory guidelines, regulations, and standards Knowledge of industry standards	Using the following tools, resources, and equipment: Database software E-mail software Inventory software (Core Integrated Environment) MS Office Work management system software

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 1

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
Occupational Title: Telecommunications Maintenance Technician																
CWF 1 Ensure that departments are efficiently managed and able to meet customer demands.																
KA 1.1 Plan the project, incorporating design, layout, equipment needed, technical references, and appropriate personnel assignments.																
3	3	3	3	3	3	3			3	3	3	3		3	3	3
KA 1.2 Implement the project plan, incorporating strategies and equipment to meet customers' needs.																
5	4	3	3	3	3	3			3			3	3	2	3	3
KA 1.3 Maintain accurate non-technical and technical records and reports.																
2		2	2	2	2	3		2		2	2	2	2	2	3	2

Statement of Assessment for Critical Work Function 1

The statements of assessment can do any of several things:
- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Strategy: Simulation of work activity; role playing
Tools: Computer; browser; software assortment

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Occupational Title: Telecommunications Maintenance Technician			
Critical Work Function 2. Identify and solve real and potential equipment problems.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria** *How do we know when the key activity is performed well or performed successfully?*	**Occupational Skills & Knowledge** *What should the technician know and what skills should the technician have in order to do the activity?*	**Conditions** *What tools must the technician use in order to do the activity?*
2.1 Perform technical analysis to determine operational effectiveness.	2.1.1 Analyze data from monitoring systems to identify problems, patters, and solutions. 2.1.2 Analyze facilities for proper operation and design. 2.1.3 Analyze materials and products for reliability and ease of use. 2.1.4 Analyze processes and procedures for accuracy and integrity. 2.1.5 Inspect telecommunications equipment for any problems that could cause service degradation or downtime. 2.1.6 Compare information to locate and identify errors. 2.1.7 Evaluation degradation causes and malfunctions, using all available resources such as logs, reports, and test data. 2.1.8 Post-installation equipment performance audit indicates vendor's components performing at or above published manufacturer's specifications, benchmarks, and baselines.	Recognize and use virtual terminal software, volt meter, and environmental chamber Recognize and analyze results of analyzer for T1/T3/DSO and RF test set Knowledge of PC usage and database, flow chart, MS Office, e-mail, and terminal interface software Knowledge and usage of Internet browser Understanding of History/log computer files Knowledge of computer trouble-shooting procedures Knowledge of network architecture and equipment interface software. Knowledge of system maps, map nomenclature, and monitors	Using the following tools, resources, and equipment:: Virtual terminal software Database software Volt meter Analyzer for T1/T3/DSO RF test equipment Environmental chamber Flow chart software MS Office E-mail software Terminal interface software Internet browser History/log computer files System monitor software System maps Video monitors Trouble-shooting procedures

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Occupational Title: Telecommunications Maintenance Technician			
Critical Work Function 2. Identify and solve real and potential equipment problems.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria** *How do we know when the key activity is performed well or performed successfully?*	**Occupational Skills & Knowledge** *What should the technician know and what skills should the technician have in order to do the activity?*	**Conditions** *What tools must the technician use in order to do the activity?*
2.2 Utilize available resources to solve equipment problems.	2.2.1 Contact customers, vendors, engineers, and/or technical support for additional help to solve an equipment problem. 2.2.2 Correct technical documents such as schematics, flow charts, methods of procedure, and manuals that are in error or require modification. 2.2.3 Develop new test and troubleshooting strategies that are more efficient and accurate. 2.2.4 Develop original processes, methods, and procedures as needed. 2.2.5 Solve problems using solutions that will eliminate the possibility of that problem returning. 2.2.6 Use basic electronic theory to develop new problem-solving strategies. 2.2.7 Documentation meets supervisors and customer expectations.	Knowledge of PC usage and e-mail, database, MS Office, AutoCAD, and flow chart software Knowledge of signal flow Usage of cell phone, radio, and other two-way wireless communication Knowledge and application of system maps and map nomenclature Knowledge and usage of web server and Internet browsers Knowledge of wireless communication Knowledge of RF modulation theory Knowledge of transmission line theory (including RF/electrical/ optical/impedance mismatch) Knowledge of principles of coaxial/optical Read and understand vendor/manufacturer documentation	Using the following tools, resources, and equipment: E-mail software Web server Internet browser Database software MS Office AutoCAD software Flow chart software Cell phone Radio (or other two-way communications device) System maps Vendor documentation

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 2:

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Telecommunications Maintenance Technician																
CWF 2 Identify and solve real and potential equipment problems																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
KA 2.1 Perform technical analysis to determine operational effectiveness.																
		4	4	4	4	3		3						3		4
KA 2.2 Utilize available resources to solve equipment problems.																
3	3	3	3	3	3	3	2	3	3				4	4		4

Statement of Assessment for Critical Work Function 2:

The statements of assessment can do any of several things:
- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Strategy: Simulation of work activity
Tools: Standard workbench; blueprint with appropriate part; appropriate measuring instruments; machinery's handbook

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Occupational Title: Telecommunications Maintenance Technician			
Critical Work Function 3. Install telecommunications equipment to meet network needs and customer needs.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria** *How do we know when the key activity is performed well or performed successfully?*	**Occupational Skills & Knowledge** *What should the technician know and what skills should the technician have in order to do the activity?*	**Conditions** *What tools must the technician use in order to do the activity?*
3.1 Establish effective transport infrastructure.	3.1.1 Install inside cables and wiring taking into account building structure. 3.1.2 Install outside plant facilities. 3.1.3 Install power distribution systems such as Alternating Current and Direct Current. 3.1.4 Install switching networks such as analog, digital, and optical. 3.1.5 Install transport equipment such as wireless, optical and coaxial. 3.1.6 Infrastructure meets published company specifications and guidelines.	Recognize and utilize backhoe, tractor, pole setter, utility truck, and cable locator. Knowledge of PC usage, internet browser, and virtual terminal software. Recognize and interpret results of transmission test sets and envelope delay test sets. Recognize and use multi-meter, ampmeter, hydrometer, power meter, and reflectometer. Understand and use fusion splicer and rotary splicer. Knowledge and usage of artificial load, portable rectifier, oscilloscope, spectrum analyzer, frequency counter, optical time domain, and reflectometer Knowledge of local, state, and federal (FCC/OSHA/NEC/ANSI) regulatory guidelines Knowledge of system map and nomenclature Knowledge of RF and optical transmission theories Knowledge of hand tools and power tools.	Using the following tools, resources and equipment: Backhoe Trencher Pole setter Utility truck Cable locator Internet browser Artificial load Multi-meter Portable rectifier Ampmeter Hydrometer Oscilloscope Personal/laptop computer RF/optical test equipment Transmission test sets Virtual terminal software Telecommunications test sets Service monitors Vendor documentation Regulatory guidelines Spectrum analyzer Power meter Envelope delay test sets Frequency counter Optical time domain Reflectometer Fusion splicer Rotary splicer Hand tools Power tools

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Occupational Title: Telecommunications Maintenance Technician			
Critical Work Function 3. Install telecommunications equipment to meet network needs and customer needs.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria** *How do we know when the key activity is performed well or performed successfully?*	**Occupational Skills & Knowledge** *What should the technician know and what skills should the technician have in order to do the activity?*	**Conditions** *What tools must the technician use in order to do the activity?*
3.2 Establish effective distribution infrastructure.	3.2.1 Connect computers to networks 3.2.2 Install audio and video equipment 3.2.3 Install circuits in equipment per orders 3.2.4 Install computer hardware and software as required for system completion 3.2.5 Install equipment per client needs and specifications 3.2.6 Infrastructure meets published company specifications and guidelines.	Knowledge of PC usage and database and work management system software Knowledge and usage of Internet browser Recognize and interpret results of transmission measuring test set and digital test sets Recognize and use oscilloscope and multi-meter Knowledge of computer operating systems (XP 2000, Linux, Unix, Apple, etc.) Knowledge of and usage of hand tools and power tools	Using the following tools, resources and equipment: Internet browser Transmission measuring set Oscilloscope Multi-meter Database Work management system software Laptop computer Hand tools Power tools Transmission and digital test sets Equivalent equipment as required

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 3:

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Telecommunications Maintenance Technician																	
CWF 3 Install telecommunications equipment to meet network and customer needs																	
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
KA 3.1 Establish effective transport infrastructure.																	
3		3	3		3	3								3	2	3
KA 3.2 Establish effective distribution infrastructure.																	
3		3	3		3		3							3	2	3

Statement of Assessment for Critical Work Function 3:

The statements of assessment can do any of several things:
- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Strategy: Simulation of work activity
Tools: Standard workbench; blueprint with appropriate part; appropriate measuring instruments; machinery's handbook

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Occupational Title: Telecommunications Maintenance Technician			
Critical Work Function 4. Ensure telecommunication equipment operates at expected performance levels.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria** *How do we know when the key activity is performed well or performed successfully?*	**Occupational Skills & Knowledge** *What should the technician know and what skills should the technician have in order to do the activity?*	**Conditions** *What tools must the technician use in order to do the activity?*
4.1 Perform maintenance on telecommunications equipment as required.	4.1.1 Maintain equipment per client needs and specifications. 4.1.2 Maintain personal and network computers. 4.1.3 Maintain power distribution systems such as Alternating Current and Direct Current. 4.1.4 Maintain switching networks, such as analog and digital. 4.1.5 Maintain transport equipment such as wireless, optical, and coaxial. 4.1.6 Maintain vehicles for economical and safe operation 4.1.7 Documentation meets supervisors, customers, and/or departmental written specifications and guidelines	Knowledge of PC usage and first aid, virtual terminal software, and network security/monitoring software. Knowledge and use of Internet browser. Recognize and interpret results of transmission test set and envelope delay test set. Understand and use fusion splicer and rotary splicer Knowledge and usage of multi-meter, ampmeter, hydrometer, power meter, and reflectometer. Recognize and interpret results of LAN/WAN tests Recognize and use artificial load, portable rectifier, oscilloscope, spectrum analyzer, frequency counter, and optical time domain. Knowledge of FCC, OSHA, ANSI, and other regulatory guidelines Knowledge of industry standards Knowledge of power distribution (AC/DC	Laptop computer First aid software Netwatcher software LAN cable test Internet browser Artificial load Multi-meter Portable rectifier Ampmeter Hydrometer Oscilloscope Virtual terminal software Transmission test sets Spectrum analyzer Power meter Envelope delay test set Frequency counter Optical time domain Reflectometer Fusion splicer Rotary splicer Test sets LAN/WAN test Network monitoring software Network security software

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Occupational Title: Telecommunications Maintenance Technician			
Critical Work Function 4. Ensure telecommunication equipment operates at expected performance levels.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria** *How do we know when the key activity is performed well or performed successfully?*	**Occupational Skills & Knowledge** *What should the technician know and what skills should the technician have in order to do the activity?*	**Conditions** *What tools must the technician use in order to do the activity?*
4.2 Perform needed repairs on telecommunications equipment as required.	4.2.1 Repair equipment per client needs and specifications. 4.2.2 Repair power distributions, such as Alternating Current and Direct Current. 4.2.3 Repair switching networks, such as analog and digital. 4.2.4 Repair transport, equipment, such as wireless, optical, and twisted pair/coaxial. 4.2.5 Documentation meets supervisor's, customer's, and/or department written specifications and guidelines.	Knowledge of PC usage and virtual terminal software Knowledge and usage of internet browser Recognize and interpret results of transmission test sets and envelope delay test set. Recognize and use multi-meter, ampmeter, hydrometer, power meter, and reflectometer. Understand optical splicing and electrical (mechanical and rotary) Recognize and use artificial load, portable rectifier, oscilloscope, spectrum analyzer, frequency counter, and optical time delay. Knowledge of wireless, optical, and electrical equipment.	Laptop computer Internet browser Artificial load Multi-meter Portable rectifier Ampmeter Hydrometer Oscilloscope Virtual terminal software Transmission test sets Spectrum analyzer Power meter Envelope delay test set Frequency counter Optical time delay Reflectometer Optical and electrical splicers

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Occupational Title: Telecommunications Maintenance Technician			
Critical Work Function 4. Ensure telecommunication equipment operates at expected performance levels.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria** *How do we know when the key activity is performed well or performed successfully?*	**Occupational Skills & Knowledge** *What should the technician know and what skills should the technician have in order to do the activity?*	**Conditions** *What tools must the technician use in order to do the activity?*
4.3 Continuously upgrade, improve, or replace telecommunications equipment to meet customer needs.	4.3.1 Adjust transport equipment to FCC regulations. 4.3.2 Clean telecommunications devices, such as filters, heads, drives, etc., per manual instructions. 4.3.3 Dismantle old equipment for re-installation or disposal per regulatory guidelines. 4.3.4 Ensure that test equipment is properly calibrated. 4.3.5 Modify telecommunications equipment for system integration, improved performance, or specific customer specification. 4.3.6 Equipment performance audit indicates vendor's components performing at or above published manufacturer's specifications and/or benchmarks.	Knowledge of PC usage and database and work management system software Knowledge of usage of Internet browser Recognize and interpret results of test sets Recognize and use multi-meter, power meter, and frequency selective volt meter Recognize and utilize spectrum analyzer and frequency counter Knowledge of FCC, OHSA, ANSI, and other regulatory guidelines	Testing equipment Multi-meter Power meter Laptop computer Internet browser Database Work management system software

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 4:

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Telecommunications Maintenance Technician																
CWF 4: Ensure telecommunication equipment operates at expected performance levels.																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
KA 4.1 Perform maintenance on telecommunications equipment as required.																
		3	3	3	3	2			3	3	3	2		3		3
KA 4.2 Perform needed repairs on telecommunications equipment as required.																
		3	3	3	3	2			3	3	3	2		3		3
KA 4.3 Continuously upgrade, improve, or replace telecommunications equipment to meet customer needs.																
		3	3	3	3	3			3			3		3		3

Statement of Assessment for Critical Work Function 4:

The statements of assessment can do any of several things:
- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Strategy: Simulation of work activity
Tools: Standard workbench; blueprint with appropriate part; appropriate measuring instruments; machinery's handbook

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Occupational Title: Telecommunications Maintenance Technician			
Critical Work Function 5. Ensure that customer's expectations are met through effective customer service.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria** *How do we know when the key activity is performed well or performed successfully?*	**Occupational Skills & Knowledge** *What should the technician know and what skills should the technician have in order to do the activity?*	**Conditions** *What tools must the technician use in order to do the activity?*
5.1 Implement an effective customer service strategy to resolve customer concerns and recommend solutions.	5.1.1 Recommend solutions to meet your customer's needs. 5.1.2. Answer customer questions and complaints in a polite and thorough manner. 5.1.3 Coordinate schedules and resources to meet customer's needs, 5.1.4 Formal and/or informal customer surveys indicate general satisfaction with customer service.	Knowledge of PC usage, e-mail, database, time management, MS Project, maintenance management, and MS PowerPoint software Knowledge of telecommunications equipment Knowledge and usage of Internet browser and web server Understanding and usage of vendor and equipment documentation	E-mail software Web server nternet browser Database software Time management software MS Project Maintenance management software MS PowerPoint Vendor and equipment documentation
5.2 Continuously update and inform the customer by serving as a technical resource.	5.2.1 Communicate technical information verbally in a clear, precise, and logical manner. 5.2.2 Update customers on work progress to maintain customer satisfaction and public relations. 5.2.3 Advise and educate the customer on proper use of equipment. 5.2.4 Formal and/or informal customer surveys indicate general satisfaction with the communication between employee and customer.	Knowledge of PC usage, e-mail, and database software Knowledge and usage of Internet browser and web server Knowledge of vendor and equipment documentation Knowledge and usage of reference materials	Using the following tools, resources and equipment: Personal/laptop computer E-mail software Web server Internet browser Database software Vendor documentation Up-to-date reference materials

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 5:

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Telecommunications Maintenance Technician																	
CWF 5 Ensure that customer's expectations are met through effective customer service																	
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
KA 5.1 Implement an effective customer service strategy to resolve customer concerns and recommend solutions.																	
3	3	3	3	3	3	3	3	2	3	3	3	3	3	3		3
KA 5.2 Continuously update and inform the customer by serving as a technical resource.																	
3	3	3	3	3	3	3	2	2	3	3	3	3	3	3		3

Statement of Assessment for Critical Work Function 5:

The statements of assessment can do any of several things:
- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Strategy: Simulation of work activity
Tools: Standard workbench; blueprint with appropriate part; appropriate measuring instruments; machinery's handbook

October 2008

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Occupational Title: Telecommunications Maintenance Technician			
Critical Work Function 6. Observe safety procedures associated with telecommunications equipment.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria** *How do we know when the key activity is performed well or performed successfully?*	**Occupational Skills & Knowledge** *What should the technician know and what skills should the technician have in order to do the activity?*	**Conditions** *What tools must the technician use in order to do the activity?*
6.1 Perform required job components while adhering to safe procedures.	6.1.1 Check for safe work conditions consistent with federal, state, local, and company regulations. 6.1.2 Climb structures such as poles, ladders, and towers in a safe manner. 6.1.3 Lift materials and equipment using proper techniques to prevent physical injury 6.1.4 Operate company vehicles and equipment in a safe manner. 6.1.5 Utilize all equipment safely in accordance with federal, state, local, and company regulations and with specific manufacturers' recommendations.	Knowledge of PC usage and e-mail software Knowledge and usage of Internet browser Knowledge of regulatory guidelines Knowledge of environmental conditions and dangers Knowledge and usage of personal safety and personal protection (PPE--Personal Protection Equipment) techniques Knowledge of proper material-handling procedures Knowledge of Material Safety Data Sheets (MSDS) Knowledge of vehicular regulations and safety Knowledge of CPR and first aid	Using the following tools, resources and equipment: Personal/laptop computer Internet browser Personal safety equipment (PPE) Valid state driver's license First-aid kit MSDS

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 6:

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Telecommunications Maintenance Technician																	
CWF 6 Observe safety procedures associated with telecommunications equipment																	
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
KA 6.1 Perform required job components while adhering to safe procedures.																	
		2	2	2	2		3	3	3	3	3	2		2	2	2

Statement of Assessment for Critical Work Function 6

The statements of assessment can do any of several things:
- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Strategy: Simulation of work activity
Tools: Standard workbench; blueprint with appropriate part; appropriate measuring instruments; machinery's handbook

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Occupational Title: Telecommunications Maintenance Technician			
Critical Work Function 7. Ensure that employees/teams develop and improve technical and interpersonal skills.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria** *How do we know when the key activity is performed well or performed successfully?*	**Occupational Skills & Knowledge** *What should the technician know and what skills should the technician have in order to do the activity?*	**Conditions** *What tools must the technician use in order to do the activity?*
7.1 Increase technical and interpersonal knowledge and skills to ensure effective personal and team performance.	7.1.1 Develop cohesive teams with solid working relationships and feedback. 7.1.2 Develop employees' technical and interpersonal skills. 7.1.3 Develop technical skills to enhance your own performance 7.1.4 Observe co-workers to learn new and better techniques and/or offer help. 7.1.5 Successful completion of all formal and informal training: formal and/or informal customer surveys indicate general satisfaction with employee/team performance.	Knowledge of PC usage and human resource information system software Knowledge and usage of peer feedback and improvement processes Knowledge of motivational and professional counseling	Human resource information system software
7.2 Utilize effective communication skills to enhance individual and team performance.	7.2.1 Discuss goals, objectives, problems, and solutions with supervisors, co-workers, and customers. 7.2.2 Read manuals and other written materials with comprehension. 7.2.3 Write information clearly, precisely, and logically. 7.2.4 Documentation indicates employee/team effectiveness in meeting performance goals.	Knowledge of PC usage and MS Office, and e-mail software Knowledge and usage of Internet browser Knowledge of clear and concise team goals and objectives.	Internet browser MS Office E-mail software Clear and concise objectives

TELECOMMUNICATIONS MAINTENANCE TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 7:

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
Occupational Title: Telecommunications Maintenance Technician																
CWF 7 Ensure that employees/teams develop and improve technical and interpersonal skills																
KA 7.1 Increase technical and interpersonal knowledge and skills to ensure personal and team performance.																
3	4	4	3	4	4	3	3	3	4	4	4	3	3	4		2
KA 7.2 Utilize effective communication skills to enhance individual and team performance.																
3	3	3	3	3	3	3	3	3	4	3	3	3	3	3		3

Statement of Assessment for Critical Work Function 7

The statements of assessment can do any of several things:
- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Strategy: Simulation of work activity

Tools: Standard workbench; blueprint with appropriate part; appropriate measuring instruments; machinery's handbook