

## NVE Communication Technician Apprentice Program - Summary of Changes

Added Section A. General

Added Section B. Job Training Program

Added Section C. Job Standards

Added Section D. Safety

Added Section E. Testing

Updated existing Page 19 and 20 “Communications Technician Program Duration”. Edited all processes by combining and eliminating invalid content and updated individual and total required hours in all areas.

OLD:		NEW:	
Process	Hours	Process	Hours
<b><i>I. Telecom Auxiliary Systems</i></b>		<b><i>I. Telecom Auxiliary Systems</i></b>	
DC Power Supplies	320	Power and DC Distribution Systems	400
Batteries	80	Uninterrupted Power Supply System	40
Antenna Support Structures	80	Generator Backup System	100
Fuse and Alarm Panels	80	Telecom Alarm System	280
UPS Equipment	40	Timing Systems	100
Automatic Transfer Switches	40	HVAC Equipment	40
Standby Generators/Fuel Systems	120	Wire and Fiber Management	260
Alarm Systems (DPS)	160	Testing Equipment, Systems, and Software	200
Timing Systems	100	<b><u>Total</u></b>	<b><u>1420</u></b>
Radio Frequency Interference Investigations	60		
HVAC Equipment	40		
<b><i>Total</i></b>	<b><i>1120</i></b>		
<b><i>II. Energy Management Systems</i></b>		<b><i>II. Energy Management Systems</i></b>	
ESCC Computer Equipment	240	SCADA System Components	240
Communications Front End	240	Communications Front End Processor / Modems	240
SCADA RTUs	800	SCADA Remote Terminal Units	640
IED Interfaces/ION Meters	160	Interface with Line and Meter Equipment IEDs	320
Transducers	160	Protocols / Analyzers	160
Protocols/Analyzers	160	Management Software	120
<b><i>Total</i></b>	<b><i>1760</i></b>	<b><u>Total</u></b>	<b><u>1720</u></b>
<b><i>III. Telephone Systems</i></b>		<b><i>III. Telephone Systems</i></b>	
Switches (Nortel, IPC)	200	VOIP System	140
Ringdown Circuits	40	T1 Systems	220
Voice Recorders (Wygant)	80	DSO Circuits	220
Trunk/FEX Lines	120	<b><u>Total</u></b>	<b><u>580</u></b>
Station MACs	120		
Line Protection (Position)	80		
<b><i>Total</i></b>	<b><i>640</i></b>		
<b><i>IV. Relay and Protection Systems/Transfer Trip</i></b>		<b><i>IV. Relay and Protection Systems</i></b>	
RAS	40	RAS Schemes	80
Power Line Carrier	80	Relay Protection	240
Tone Equipment (9745, Type 40, TA 1/3)	160	Power Line Carrier / Tone Equipment	180
Mirrored Bits Equipment	40	Mirrored Bits Equipment	40
Direct/Permissive	80	Direct/Permissive	80
<b><i>Total</i></b>	<b><i>400</i></b>	<b><u>Total</u></b>	<b><u>620</u></b>
<b><i>V. Mobile Radio Systems</i></b>		<b><i>V. Land Mobile Radio Systems</i></b>	
Consoles	40	Consoles	80
Subscriber Units (Mobiles, Portables)	320	Subscriber Units	180
EDACS Programming	160	Programming	180
CSD	160	Database Management	120
IMC	160	IMC	160
Stargate	80	LMR Base Site Equipment	240
Repeaters	120	<b><u>Total</u></b>	<b><u>960</u></b>
Base Stations	480		
<b><i>Total</i></b>	<b><i>1520</i></b>		
<b><i>VI. Transport Systems</i></b>		<b><i>VI. Transport Systems</i></b>	
Microwave Radio (Harris, Alcatel)	2560	Microwave Radio	600
Multiplexers (Access 60, IMUX)	600	Multiplexers	600
DACS (Titan, Mainstreet)	640	DACS	200
Optical Fiber Systems (JMUX, Alcatel, Lucent)	140	Optical Fiber Transport Systems	540
LAN/WAN (Routers, Switches, RAD)	620	Networking	420
MAS Radio	320	MAS Radio	220
Power Line CXR (SSB)	160	<b><u>Total</u></b>	<b><u>2580</u></b>
<b><i>Total</i></b>	<b><i>2560</i></b>		

Updated existing Page 19 and 20 “Communications Technician Program Duration” added Process VII. Safety.

<b><i>VII. Safety</i></b>	
Safety Training and Meetings	60
Vehicle Operation	60
<b><u>Total</u></b>	<b><u>120</u></b>

Added Section G. OJT Hours Summary

Added Section H. Training Plan Outline

Added Section I. Step Progression

Removed existing pages 21 – 26 “Supplemental Training Program Outline” Table due to duplicate information.