STATE OF NEVADA
Department of Administration
Division of Human Resource Management

CLASS SPECIFICATION

TITLE	GRADE	EEO-4	CODE
COMMUNICATIONS SYSTEMS SPECIALIST III	**37**	**C**	**6.976**
COMMUNICATIONS SYSTEMS SPECIALIST II	**35**	**C**	**6.977**
COMMUNICATIONS SYSTEMS SPECIALIST I	**33**	**C**	**6.973**

SERIES CONCEPT

Communications Systems Specialists perform specialized electronic technician work involving the fabrication, installation, maintenance, repair, and modification of 24-hour communications systems in a geographical area or statewide basis. Equipment may include two-way radio and microwave equipment, mountaintop base stations, power systems, towers, antennas, multiple radio console systems, voice, data terminals, and end-user equipment.

Repair, align, and troubleshoot radio frequency (RF) components, units, systems, microwave, radios, and other ancillary equipment making frequency, modulation, distortion, noise, and power measurements.

Maintain test equipment such as oscilloscopes, voltmeters, land mobile radio communications system analyzers, microwave link analyzers, spectrum analyzers, baseband analyzers, radio frequency transmission reflectrometer test sets, sweep generators, deviation calibrators, tuning and adjusting tools, microcomputers, and microprocessor-controlled test/status/alarm equipment.

Maintain RF systems at peak efficiency using advanced troubleshooting skills and electronics theory at a system's engineering level.

Implement and monitor an integrated geographically dispersed radio communications processing network comprised of multiple hardware platforms, information resources, communications protocols, and physical network topologies for an agency's district or statewide trunked radio communications system.

Install, align, and troubleshoot other communications equipment such as frequency and digital multiplex equipment, digital encoding equipment, analog and digital video systems, radio control, transponders, switching equipment, multiple radio console systems, multiple channel information logging recorders, mobile data terminals and printing systems, scanning monitor receivers, receiver voting systems, grounding system, and surge protection equipment using test equipment and understanding of schematics.

Install, repair, and maintain agency mountaintop base station radios, microwave, and radio systems, power distribution systems, antenna systems, towers, lighting systems, and primary and back-up power generation systems to create remote communication sites to cover a geographical area and radio communications network.

Install copper and fiber optic cabling and cable distribution systems in division facilities enabling radio, telephone, and data systems to be inter-connected and distributed as required.

Perform electrical and mechanical installation, maintenance, and repairs on emergency vehicle equipment and maintenance vehicles including electronic siren and public address amplifiers, emergency lights and light control systems, antenna systems, data terminals, printers, data multiplexers, radio consoles, logging recorders, radar sets, mobile and portable radios to ensure reliability of public safety and maintenance vehicles, communications equipment, and networks.

Conduct research and develop custom circuit boards and sub-systems to provide necessary system components which are unavailable from commercial sources, or which require modification for use with existing components and communications system.

SERIES CONCEPT (cont'd)

Compose and revise schematics and other working and technical drawings to manufacture and assemble components, mounting brackets, radio consoles, panels, cabinets, and electronic subsystems used in the installation of two-way mobile radio communications, mobile data, mobile video, and emergency lighting systems, and microprocessor-controlled sirens.

Align, test, program, and troubleshoot two-way radio communication systems, antennas, coaxial cables, mobile data, mobile video, emergency lighting systems, and microprocessor-controlled siren using electronic test and programming equipment to include portable and desktop personal computers and digital multi-meters; ensure outfitted vehicles follow Federal Communication Commission (FCC) regulations and Nevada State Police standards.

Install, maintain, troubleshoot, and repair dispatch communication consoles, audio recorders, and associated communications equipment; respond to transmission issues; conduct tests to validate field radio operations; notify radio system personnel of validated problems.

Provide on-site direction and assistance to lower-level Communication Systems Specialists to facilitate reliable, efficient, cost-effective service to the agency.

Coordinate with other communications entities including federal, State, and private agencies in the repair, maintenance, and modification of the agency's communications system.

Review and analyze system utilization statistics, user training needs, hardware, software, and environmental needs.

Maintain shop inventory of parts and equipment and maintain replacement and repair stock by researching part numbers, descriptions, and prices.

Prepare and maintain documentation of work completed, files for the system, and vendor information for the assigned work area.

Train equipment operators in the use of communications equipment.

Perform related duties as assigned.

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CLASS CONCEPTS

Communications Systems Specialist III: Under general direction, incumbents in addition to performing the full range of duties in the series concept, oversee a statewide, 24-hour communications system for a State agency; plan, develop, and monitor an agency's radio equipment budget; prepare FCC license applications for the agency and ensure licenses are renewed and properly posted in a timely manner; and provide systems engineering design, research, and development of an agency's statewide communications system. Serve as lead worker for lower-level specialists and other technical staff to include work assignment and review, training, and providing input regarding performance evaluations and work performance standards.

Incumbents conduct communications systems engineering including frequency availability, path analysis, coverage area charts, site layout, installation, and interconnection methods, and site power source and sizing.

Develop and implement technical parameters and standard practices for the installation, maintenance, and repair of communication equipment; and ensure the integrity of the communications system is maintained. Perform needs analysis and write detailed plans including annual work plans focused on broad system improvements and

CLASS CONCEPTS (cont'd)

Communications Systems Specialist III: (cont'd)
strategy. Analyze existing system configuration and proposed revisions to ensure compatibility, reliability, efficiency, and cost-effectiveness. This is the advanced journey level in the series.

Communications Systems Specialist II: Under direction, incumbents perform the full range of duties in the series concept and may act as a lead worker for lower-level Communications Systems Specialists and other technical staff. Incumbents assist in performing systems engineering and design, research, and development including frequency availability, path analysis, coverage area charts, site layout, installation methods, interconnection methods, site power sizing, and determination of power source types for each additional site or site to be modified as well as the repair and maintenance of a statewide communications system. This is the journey level in the series.

Communications Systems Specialist I: Incumbents either:

1) under general supervision of a higher-level Communications Systems Specialist, perform routine installation, repair, and maintenance of the agency's communications equipment at the sub-journey level. Progression to the next level in the series is not automatic, and positions may be permanently allocated to this level; or
2) under close supervision of a higher-level Communications Systems Specialist, receive training in performing the duties described in the series concept. This is the trainee level in the series and progression to the next level in the series may occur upon meeting the minimum qualifications, satisfactory performance, and with the recommendation of the appointing authority.

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MINIMUM QUALIFICATIONS

SPECIAL REQUIREMENTS:

* Pursuant to NRS 284.4066, some positions in this series have been identified as affecting public safety. Persons offered employment in these positions must submit to a pre-employment screening for controlled substances.
* Some positions require extensive travel.
* Some positions require on-call availability and emergency response during non-working hours including holidays.
* Work is performed during inclement weather conditions and includes climbing towers and hiking into remote site areas as required.
* Some positions require verification of certification, designation, or licensure at the time of appointment and as a condition of continuing employment and will be identified at the time of recruitment.
* A valid driver's license is required at the time of appointment and as a condition of continuing employment.

INFORMATIONAL NOTE:

* Some Communications Systems Specialist I applicants must submit proof of certification as specified above within six months of employment.

COMMUNICATION SYSTEMS SPECIALIST III

EDUCATION AND EXPERIENCE: Associate's degree from an accredited college or university in electronics technology and four years of technical electronics experience, two years of which included experience installing, maintaining, and repairing communications and ancillary equipment; **OR** one year of experience as a Communications Systems Specialist II in Nevada State service; **OR** an equivalent

MINIMUM QUALIFICATIONS (cont'd)

COMMUNICATION SYSTEMS SPECIALIST III (cont'd)

EDUCATION AND EXPERIENCE: (cont'd)
combination of education and experience as described above. *(See Special Requirements and Informational Note)*

ENTRY LEVEL KNOWLEDGE, SKILLS, AND ABILITIES (required at time of application):
Detailed knowledge of: theory of communications technology as applied to specialized communications networks. **Working knowledge of:** FCC licensing procedures including frequency coordination; communications system design; systems engineering to include needs analysis, system requirements, and the development and implementation of solutions; correct English grammar, usage, punctuation, and spelling. **Ability to:** establish and maintain effective working relationships with other State agencies, equipment suppliers, employees, and the public; plan and set project priorities; motivate and direct subordinates; organize and coordinate the work of others. **Skill in:** oral and written communications; *and all knowledge, skills, and abilities required at the lower levels*.

FULL PERFORMANCE KNOWLEDGE, SKILLS, AND ABILITIES (typically acquired on the job):
Working knowledge of: State regulatory requirements applicable to communications. **Ability to:** manage projects such as site development, system upgrades, and modifications; represent the agency regarding its communications system; purchase parts and supplies according to established policies and regulations. **Skill in:** assessing technical and administrative issues, analyzing potential solutions and reaching sound decisions in a timely manner.

COMMUNICATION SYSTEMS SPECIALIST II

EDUCATION AND EXPERIENCE: Associate's degree from an accredited college or university in electronics technology or equivalent with course work in algebra, trigonometry, schematics, electronics laboratories, corrective maintenance procedures, and technical writing courses and three years of technical electronics experience, one year of which included installing, maintaining, and repairing communications and ancillary equipment; **OR** completion of trade school, military or college training to the certificate level in electronics technology which included the theory of communication technology and three years of technical electronics experience, one year of which included installing, maintaining, and repairing communications and ancillary equipment; **OR** one year of experience as a Communications Systems Specialist I in Nevada State service; **OR** an equivalent combination of education and experience as described above. *(See Special Requirements and Informational Note)*

ENTRY LEVEL KNOWLEDGE, SKILLS, AND ABILITIES (required at time of application):
Detailed knowledge of: math including algebra and trigonometry; microwave, radio, and antenna systems (transmitters, receivers, repeater stations, transceivers, mobile and portable radios, and base station dispatch consoles); telephone systems; standby power including generators, uninterruptible power supplies, and solar electric systems; processes and procedures used in circuit analysis and corrective diagnosis for repair and troubleshooting communications equipment. **Working knowledge of:** calibration principles and techniques; federal communications rules and regulations; electronics technology as applied to specialized communications networks; voice and data communications servers; analog and digital video; copper and fiber optic data and voice cabling distribution systems. **Ability to:** coordinate and implement communications site development and improvement projects; provide training and direction to lower-level technical staff; supervise the work of outside contractors; prepare technical and analytical reports; analyze communications protocols; use word processing, spreadsheet, and database management software; *and all knowledge, skills, and abilities required at the lower level*.

FULL PERFORMANCE KNOWLEDGE, SKILLS, AND ABILITIES (typically acquired on the job):
(These are identical to the Entry Level Knowledge, Skills, and Abilities required for Communications Systems Specialist III.)

MINIMUM QUALIFICATIONS (cont'd)

COMMUNICATIONS SYSTEMS SPECIALIST I

EDUCATION AND EXPERIENCE: Associate's degree from an accredited college or university or equivalent with course work in algebra, trigonometry, schematics, and electronics laboratories and two years of technical experience in the installation, maintenance, and repair of electronic equipment; **OR** completion of trade school, military, or college training to the certificate level in electronics technology which included the theory of communication technology and two years of technical electronics experience as described above; **OR** an equivalent combination of education and experience as described above. *(See Special Requirements and Informational Note)*

ENTRY LEVEL KNOWLEDGE, SKILLS, AND ABILITIES (required at time of application):
Detailed knowledge of: electronics including AC/DC principles, pulse circuits, solid-state integrated circuit devices, and microprocessors; microwave and multiplex principles and theories; analog and digital electronics. **Working knowledge of:** math including algebra and trigonometry; public address systems; processes and procedures used in circuit analysis and corrective diagnosis for the repair and troubleshooting of communications equipment. **General knowledge of:** basic calibration principles and techniques. **Ability to:** operate a variety of electronic test equipment that measures time, frequency, phase, amplitude, and power; install, repair, and maintain communications and ancillary equipment; operate a variety of hand and power tools; read and understand complex schematics and understand the operations of components, units, and systems; work independently and as a team member; write reports and documentation in a clear and concise manner.

FULL PERFORMANCE KNOWLEDGE, SKILLS, AND ABILITIES (typically acquired on the job):
(These are identical to the Entry Level Knowledge, Skills, and Abilities required for Communications Systems Specialist II.)

This class specification is used for classification, recruitment, and examination purposes. It is not to be considered a substitute for work performance standards for positions assigned to this class.

	6.976	6.977	6.973
ESTABLISHED:	12/13/88R	12/13/88R	7/1/93P
	10/91/90PC	10/19/90PC	8/31/92PC
REVISED:	7/1/93P	7/1/93P	
	8/31/92PC	8/31/92PC	
REVISED:	9/19/03PC	9/19/03PC	9/19/03PC
REVISED:	5/12/06PC	5/12/06PC	5/12/06PC
REVISED:	5/9/12UC	5/9/12UC	5/9/12UC
REVISED:	3/30/22R	12/30/22UC	12/30/22UC
	12/30/22UC		
REVISED:	7/25/24UC	7/25/24UC	7/25/24UC