STATE OF OHIO (DAS)	CLASSIFICATION SERIES:	SERIES NO .:
CLASSIFICATION	Radiological Instrument Technician	8442
SPECIFICATION	MAJOR AGENCIES:	EFFECTIVE DATE:
	Public Safety only	07/10/2005

SERIES PURPOSE:

The purpose of the radiological instrument technician occupation is to repair, service & calibrate all electronic radiation detection & monitoring equipment statewide in a certified national voluntary laboratory accreditation facility (NVLAP), conduct radiological training programs for emergency services organizations & participate in state's radiological emergency response team operations.

At the lowest level, incumbents assist higher level technicians with maintaining & calibrating radiological instruments & exchange instruments with federal, state & other local governments.

At the full performance level, incumbents independently operate & maintain special test equipment, service & repair electronic radiation detection & calibration activities using a remote cesium source; monitoring equipment & development & presentation of radiological instrument operation & radiation safety training programs & assist higher level radiological instrument technician's

At the advanced level, incumbents maintain & calibrate radiological instruments & act as lead worker to assist lower level radiological instrument technicians with complex technical problems.

At the highest level, incumbents direct & manage state's radiological instrument maintenance & calibration program, provide technical guidance for operation of maintenance & calibration laboratory & supervise radiological instrument technicians, additionally, serves as the radiological officer to ensure compliance with federal regulations.

Repair & service of wide variety of electronic radiation detection equipment such as dosimeters, survey meters, & specialized probes.

GLOSSARY

Cesium source: highly radioactive material that is used to perform calibration on radiological detection instruments.

NIST: National Institute of Standards and Technology.

NVLAP: National Voluntary Laboratory Accreditation.

TLD: thermoluminescent dosimeters.

RIMC: radiological instrumentation maintenance and calibration facility.

Note: this classification is to be used at the Ohio Department of Public Safety Emergency Management Agency only.

CLASS TITLE:	CLASS NUMBER:	PA
Radiological Instrument Technician 1	84421	

CLASS CONCEPT:

The developmental level class works under direction & requires some knowledge of electronics & skill in testing, calibration, repair & use of radiological detection & measurement equipment in order to assist with repairs, service & calibrate electronic radiation detection & monitoring equipment, prepare & conduct training programs regarding use of radiation detection & monitoring equipment & inventory records.

EFFECTIVE

06/30/2002

'RANGE

CLASS TITLE:	CLASS NUMBER:	PAY RANGE	EFFECTIVE
Radiological Instrument Technician 2	84422	30	06/30/2002

CLASS CONCEPT:

The full performance level class works under direction & independently operates & maintains special test equipment & requires considerable knowledge of electronics, radiation safety training, radiological detection equipment & related maintenance & repair procedures & bench test equipment in order to develop presentation of radiological instrument operation & radiation safety training for state & county monitoring personnel, repair & service all types of radiological detection & measurement equipment & training for radiological instrument technicians in performance of electronic radiation detection equipment repair, service & calibration activities using a remote cesium source & assist higher level radiological instrument technician's.

CLASS TITLE:	CLASS NUMBER:	PAY RANGE	EFFECTIVE
Radiological Instrument Technician 3	84424	31	06/30/2002

CLASS CONCEPT:

The advanced level class works under direction & requires thorough knowledge of electronics, radiation safety training, radiological detection equipment & related maintenance & repair procedures & special test & bench test equipment in order to develop policy & procedures & oversees technical methodologies; monitors personnel, repair & service all types of radiological detection & measurement equipment & serve as lead worker by providing work direction & training for radiological instrument technicians in performance of electronic radiation detection equipment repair, service & calibration activities.

CLASS TITLE:	CLASS NUMBER:	PAY RANGE	EFFECTIVE
Radiological Instrument Service Manager	84425	13	

CLASS CONCEPT:

The managerial level class works under general direction & requires extensive knowledge of electronics, radiation detection equipment, radiation safety & regulations pertaining to industrial safety of radiological materials in order to direct & manage state radiological instrument maintenance & calibration program, direct operations of emergency management agency laboratory accredited by National Volunteer Laboratory Accreditation Program (i.e., NAVLAP), plan & administer program development to ensure all processes & procedures meet NAVLAP criteria & supervise radiological instrument technicians in performance of service & repair of electronic radiation detection & monitoring equipment & serve as state radiological officer to ensure compliance with federal regulations.

CLASS TITLE	CLASS NUMBER	<u>B. U.</u>	EFFECTIVE	PAY RANGE
Radiological Instrument Technician 1	84421	007	6/30/2002	29

Under direction of higher level radiological instrument technician's, assist with repairs, services & calibrates electronic radiation detection & monitoring equipment (e.g., radiation detectors, individual radiation dosimeters, thermoluminescent dosimeters) & performs calibrations on NVLAP certified range & assist with conducting field maintenance inspections of county radiation detection & monitoring instruments.

Prepares & conducts training for county engineers, emergency personnel, schools & nuclear power plant personnel in proper use of radiation detection equipment, procedures for response to radiation emergencies & preparedness & mitigation of potential emergency situations; attends special equipment training schools; participates in nuclear power plant exercises involving response, assessment & communications.

Operates &/or maintains special test equipment (e.g., oscilloscope, volt-ohm meter, radiological instrument calibrator, bench test equipment etc.); utilizes personal computer for record keeping, calibrations; purchases replacement parts; schedules equipment for pick-up, maintenance & return to user county.

MAJOR WORKER CHARACTERISTICS:

Knowledge of radiation & radiation safety; radiological measuring instruments traceable calibration procedures & techniques; National Voluntary Laboratory Accreditation Program (NVLAP)*;state & federal regulations pertaining to industrial safety of radiological materials*; electronics; inventory control; public relations*; physics for electronics; radiological detection equipment; radiation safety training*. Skill in testing, calibration, repair & use of radiological detection & measurement equipment (e.g., radiation detectors, individual radiation dosimeters, thermoluminescent dosimeters); use of bench test equipment. Skill in use of personal computer*. Ability to understand manuals & verbal instructions, technical in nature; prepare & deliver training programs; cooperate with others on group projects; demonstrate dexterity to use hands skillfully.

(*)Developed after employment.

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

Completion of associate core program in electronics, electronics engineering or electrical/electronic engineering; 6 mos. exp. in electronics; valid driver's license.

-Or 30 mos. exp. in electronics; valid driver's license.

-Or equivalent of Minimum Class Qualifications for Employment noted above.

TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT: Not applicable.

UNUSUAL WORKING CONDITIONS:

May require travel; may be required to be on-call 24 hrs., 7 days per week.

CLASS TITLE	CLASS NUMBER	<u>B. U.</u>	EFFECTIVE	PAY RANGE
Radiological Instrument Technician 2	84422	007	6/30/2002	30

Independently repair, service & calibration of electronic radiation detection & monitoring equipment (e.g., radiation detectors, individual radiation dosimeters, thermoluminescent dosimeters) using a remote cesium source.

Performs electronic radiation detection & monitoring equipment maintenance & repair (i.e., inspects, repairs, tests & calibrates all types of civil defense & state operated radiological survey meters, dosimeters, dosimeter chargers, thermoluminescent dosimeters & thermoluminescent dosimeter readers).

Develop training programs & conducts training presentations for state & county personnel regarding use, inspection & operation of radiation detection instruments & related equipment & radiation safety; provides assistance to county disaster services agencies concerning maintenance of inventory records for radiological equipment locations.

Maintain computerized record keeping (e.g., inventory, repair, parts, equipment exchange vehicles, radiological incidents throughout state).

Acts as member of emergency response team by gathering samples & measuring radiation exposure & provides advice to ensure public safety; conducts inspections of radioactive materials shipments from nuclear power facilities as necessary.

MAJOR WORKER CHARACTERISTICS:

Knowledge of radiation & radiation safety; radiological measuring instruments traceable calibration procedures & techniques; National Voluntary Laboratory Accreditation Program (NVLAP)*; state & federal regulations pertaining to industrial safety of radiological materials; electronics; inventory control; public relations; physics for electronics; radiological detection equipment; radiation safety training; employee training & development*; statistics*. Skill in testing, calibration, repair & use of radiological detection & measurement equipment (e.g., radiation detectors, individual radiation dosimeters, thermoluminescent dosimeters); use of bench test equipment. Skill in use of personal computer*. Ability to interpret extensive variety of technical material in books, journals & manuals; handle sensitive contacts with officials & general public; prepare & deliver training programs; demonstrate dexterity to use hands skillfully.

(*)Developed after employment.

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

Completion of associate core program in electronics, electronics engineering or electrical/electronic engineering; 12 mos. exp. in electronics which included at least 6 mos. exp. using radiation detection instruments, practicing radiation safety & in training of others in radiation safety & procedures/techniques for testing, calibration, repair & maintenance of radiological detection & monitoring instruments; 9 mos. trg. or 9 mos. exp. in inventory control; 6 mos. trg. or 6 mos. exp. in public relations; valid driver's license.

-Or 36 mos. exp. in electronics which included at least 12 mos. exp. in using radiation detection instruments, practicing radiation safety & in training of others in radiation safety & procedures/techniques for testing, calibration, repair & maintenance of radiological detection & monitoring instruments; 9 mos. trg. or 9 mos. exp. in inventory control; 6 mos. trg. or 6 mos. exp. in public relations; valid driver's license.

-Or 6 mos. exp. as Radiological Instrument Technician 1, 84421; valid driver's license.

-Or equivalent of Minimum Class Qualifications for Employment noted above.

TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT:

Not applicable.

UNUSUAL WORKING CONDITIONS:

Travel may be required; may be required to be on call 24 hrs., 7 days per week.

CLASS TITLE	CLASS NUMBER	B. U.	EFFECTIVE	PAY RANGE
Radiological Instrument Technician 3	84423	007	6/30/2002	31

Under direction of radiological instrument service manager, performs specialized technical work in repairing, inspecting, testing & calibrating all types of state of Ohio radiological survey meters, dosimeters, dosimeter charges, thermoluminescent (TLD) dosimeters & thermoluminescent dosimeters readers. Under direction of radiological instrument services manger, oversee operation of thermoluminescent dosimeter reader. Collect TLD readings & file. Write procedures on how to calibrate new radiological instruments in calibration range. Assist radiological instrument technician I & II's on identification & resolution of any complex problems encountered with either calibration or repair methodologies. Load programs on computers that are needed to calibrate radiological instruments. Assist radiological instrument technicians on any new technological changes that is required to perform calibration & or repairs to radiological instrumentation. Calculate radiological source half-life to ensure those radiological instruments are calibrated to National Institute of Standards & Technology (NIST) standards. Check calibration range weekly instrumentation for source accuracy. Acts as quality controller for National Voluntary Laboratory Accreditation Program (NVLAP) when quality controller is absent.

Performs complex repairs to electronic radiation equipment. Assist radiological instrument technician I & II's with remote calibration & repair of electronic radiation equipment. Assist radiological instrument technological I & II's with resolution of any problems encountered with highly technical radiological instrument requiring extensive repair or calibration. Assists in wipe testing of colbalt training source sets & cesium 137 calibration sources & all other sources located at radiological instrument maintenance & calibration facility. Instructs other radiological instrument technician I & II's on how to use test equipment & ensures equipment is up to date on calibration.

Assist radiological instrument service manager in maintenance of current inventory & ensuring availability of repair parts necessary to maintain equipment. Assist county emergency management agency directors in maintaining their inventory records on location of radiological instruments. Record keeping/reporting, create, maintain & update a computer database to track training records based on calendar year, fiscal year, county & course name. Inventory potassium iodide (KI) with attention to expiration dates.

Assist in training personnel from state & county emergency management agencies in technical use, inspection & operability checks of radiation detection instruments & related equipment. Acts as member of state radiological emergency response team by gathering samples & measuring radiation exposure at incident site. Advises safety services personnel of actions to take in order to protect public from radiation exposure. May be called any hour of day or night to assist with assessing effects of a natural &/or technological hazard incident.

MAJOR WORKER CHARACTERISTICS:

Knowledge of radiation & radiation safety; radiological measuring instruments traceable calibration procedures & techniques; National Voluntary Laboratory Accreditation Program (NVLAP)*; state & federal regulations pertaining to industrial safety of radiological materials; electronics; inventory control; public relations; physics for electronics; radiological detection equipment; radiation safety training; employee training & development*; statistics*. Skill in testing, calibration, repair & use of radiological detection & measurement equipment (e.g., radiation detectors, individual radiation dosimeters, thermoluminescent dosimeters); use of bench test equipment. Skill in use of personal computer*. Ability to interpret extensive variety of technical material in books, journals & manuals; handle sensitive contacts with officials & general public; prepare & deliver training programs; demonstrate dexterity to use hands skillfully.

(*)Developed after employment.

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

Completion of associate core program in electronics, electronics engineering or electrical/electronic engineering; 36 mos. exp. in electronics which included at least 12 mos. exp. using radiation detection instruments, practicing radiation safety & in training of others in radiation safety & procedures/techniques for testing, calibration, repair & maintenance of radiological detection & monitoring instruments; 9 mos. trg. or 9 mos. exp. in inventory control; 6 mos. trg. or 6 mos. exp. in public relations; valid driver's license.

-Or 36 mos. exp. in electronics which included at least 12 mos. exp. in using radiation detection instruments, practicing radiation safety & in training of others in radiation safety & procedures/techniques for testing, calibration, repair &

maintenance of radiological detection & monitoring instruments; 12 mos. trg. or 12 mos. exp. in inventory control; 9 mos. trg. or 9 mos. exp. in public relations; valid driver's license.

-Or 24 mos. exp. as Radiological Instrument Technician 2, 84422; valid driver's license.

-Or equivalent of Minimum Class Qualifications for Employment noted above.

TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT: Not applicable.

UNUSUAL WORKING CONDITIONS:

Travel may be required; may be required to be on call 24 hrs., 7 days per week.

CLASS TITLE	CLASS NUMBER	<u>B. U.</u>	EFFECTIVE	PAY RANGE
Radiological Instrument Service Manager	84425	EX	07/10/2005	13

Directs & manages state radiological instrument maintenance & calibration (i.e., RIM&C) program (i.e., annual inspection program of radiological detection & monitoring instruments that includes testing, calibration, repair & replacement), directs operations of emergency management agency (i.e., EMA) laboratory accredited by National Volunteer Laboratory Accreditation Program (i.e., NAVLAP) (e.g., oversees technical evaluations relating to NAVLAP; writes &/or reviews reports of hazardous situations; oversees environmental monitoring & research projects involving radioactive materials), plans & administers program development to ensure all processes & procedures meet NAVLAP criteria (e.g., develops rules, license review, rules interpretation & performance criteria), provides technical guidance for operation of maintenance & calibration facility, prepares standard operating procedures for responses associated with radiological accidents, develops budget, supervises radiological instrument technicians in performance of service & repair of electronic radiation detection & monitoring equipment (e.g., radiation detectors, individual radiation dosimeters, thermoluminescent dosimeters) & ensures staff are trained in new maintenance & repair techniques as available & serves as state radiological officer to ensure compliance with federal regulations (e.g. oversight of dosages acquired by state workers in daily operations or emergencies).

Manages field operations of state nuclear response teams; participates in 24 hour response effort for transportation accidents involving radioactive materials by on-scene actions or analysis in emergency operations center; prepares standard operating procedures for all activities associated with off-site nuclear facility monitoring; plans development & utilization of effective network of radiation monitoring stations throughout state; negotiates contracts with neighboring states (e.g., Illinois, Michigan & Pennsylvania) to calibrate & maintain radiological instruments; develops & prepares proposals in response to requests for proposals from federal agencies; oversees, coordinates & conducts training programs for radiation monitoring personnel; evaluates procedures of county emergency services organizations statewide; adheres to National Council On Radiation Protection & Measurements (i.e., NCRP), Environmental Protection Agency (I.E., EPA) & National Institute of Standards & Technology (i.e., NIST) standards in order to maintain license & accreditation; develops standards for calibration of radiological instrument with NIST & recommends types of instruments needed by other agencies; reviews radiation protection & safety professional publications to keep abreast of current technology & procedures.

Completes required reports; serves as liaison with federal, state, local & non-governmental agencies & organizations regarding specific program areas; speaks before groups regarding radiation detection & emergency response issues; participates with federal, state & local agencies in responding to radiation emergency or exercises (i.e., includes nuclear power plants during actual emergencies or drill scenarios); writes instructions & specifications for proper use of radiation detection & measurement devices; conducts correspondence & provides information to government officials, media & general public regarding radiation incidents, natural disasters & related issues; assists dose assessment team leader in radiological dose assessment function; acts as EMA duty officer; maintains & oversees inventory control activities; operates radiological instruments; operates personal computer to produce reports, write statistical analysis & for data entry.

MAJOR WORKER CHARACTERISTICS:

Knowledge of radiation & radiation safety; radiological measuring instruments traceable calibration procedures & techniques; state & federal regulations pertaining to industrial safety of radiological materials; natural sciences (e.g., general physics; radiation physics; biological effects of radiation; biology; environmental radiation); electronic engineering; physics for electronics; supervisory principles/techniques*; employee training & development; general management*; radiological detection equipment; radiation safety training; statistics; inventory control; agency policies & procedures related to programmatic evaluation procedures, standards & guides*; budgeting*; skill in testing, calibration, repair & use of radiological detection & measurement equipment (e.g., radiation detectors, individual radiation dosimeters, thermoluminescent dosimeters, scientific calculator for radiation decoy & dose calculations); use of bench test equipment; personal computer*. Ability to comprehend, discuss, edit or write about radiological incidents or natural disasters; gather, collate & classify information about data, people or things; deal with many variables & determine specific action; write meaningful, concise & accurate reports; prepare & deliver speeches & seminars for specialized audiences or general public; interpret extensive variety of technical materials in maintenance manuals; resolve complaints from government officials & general public.

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

Completion of undergraduate core program in radiological science/health physics or related field of study (e.g., general electronics); 18 mos. exp. in radiological health, radiation safety lab techniques & health physics practices & procedures; 18 mos. exp. in general electronics equipment maintenance; 6 mos. exp. in public relations; 3 mos. exp. in inventory control.

-Or 24 mos. exp. as Radiological Instrument Technician 3, 84423.

-Or 36 mos. exp. as Radiological Instrument Technician 2, 84422.

-Or equivalent of the Minimum Class Qualifications For Employment noted above.

TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT:

Not applicable.

UNUSUAL WORKING CONDITIONS:

On call 24 hours, 7 days per week; may require travel; responds to radiological accidents in inclement weather; deals with radio active materials which present potential negative health effects if safety precautions are not strictly adhered to; may lift radiological equipment/tools weighing up to 50 lbs.