RADIATION PROTECTION TECHNICIAN

APPENDIX A

O*NET CODE 19-4051.02

This training outline is a minimum standard for Work Processes and Related Instruction. Changes in technology and regulations may result in the need for additional on-the-job or classroom training.

WORK PROCESSES

	Approximate Hours
A. Radiation Work Permit Procedures	**200**
1. Learn to write various types of work permits covering all types of jobs and radiological conditions.	
B. General Radiation Protection Methods	**200**
1. Learn to properly post areas and assign the proper access controls to areas of varying radiological conditions.	
C. Personnel Exposure Monitoring	**200**
1. Be able to assign the appropriate types of dosimetry for various jobs, demonstrate the proper wearing of different dosimetry types, and discuss emergency accident dosimetry when it's used.	
D. Radiation Survey Techniques	**500**
1. Demonstrate all activities necessary to take radiation surveys including preplanning activities, instrument selection and checkout, security controls, anticipated survey points, beta survey techniques, neutron survey techniques, and emergency survey techniques.	
E. Radiation Protection Records	**300**
1. Learn types of recordkeeping that must be performed, including personnel exposure summaries, training, and determination if individuals are qualified to work on radiation work permits.	
F. Radioactive Materials Shipment	**400**
1. Learn proper method of truck surveys and shipment documentation prior to a radioactive materials shipment.	

G. Contamination Control **500**

1. Learn proper method of limiting access to contaminated areas.
2. Use bagging, roping and posting control of areas or equipment to limit contamination spread.
3. Demonstrate the proper use of protective clothing.

H. Respiratory Protection **400**

1. Learn proper techniques for use of various types of respiratory protection devices.
2. Learn how to issue respiratory protection for various radiological conditions.

I. Whole Body Counting **200**

1. Learn operation and interpretation of the results of whole body counts.
2. Utilize proper techniques to minimize the possibility of contamination of the equipment.

J. Contamination Survey Techniques **200**

1. Learn proper use of smears for evaluation removable surface contamination in all plant areas and on equipment.
2. Demonstrate proper contamination control techniques in collecting, evaluation and disposal of sample.

K. Counting Contamination Surveys **200**

1. Learn counting equipment techniques for evaluating contamination swipes. Use proper contamination control techniques.

L. Decontamination Techniques **500**

1. Learn proper techniques and methods for decontamination of areasand equipment.
2. Minimize amount of waste generated during operation and limit the spread of contamination.
3. Use good dose reduction techniques.
4. Discuss anticipated problems and take action to minimize their consequences.

M. Personnel Decontamination **200**

1. Learn techniques for personnel decontamination.
2. Use precaution to prevent injury to skin.

3. Discuss the proper use of chemical decontamination methods and the associated safety precautions.

N. Personnel Contamination Monitoring **200**

1. Learn proper placement and inspection of personnel contamination monitoring devices.
2. Learn to evaluate other individuals monitoring for effectiveness, noting deficiences and taking proper corrective action.

O. Contamination Release Limits **100**

1. Learn the requirements for releasing equipment, plant areas, and personnel from the restricted area.

P. Emergency Procedures, Personnel Injury **300**

1. Learn proper response to a major contaminated injury.
2. Use procedures to reduce contamination spread and role in assisting hospital staff.

Q. Emergency Procedures, Plant Fires **300**

1. Learn proper response to plant fires and limit possible radiological hazards associated with fires in contaminated areas.

R. In-Plant Emergency Surveys **500**

1. Learn precautions and methods to be used when performing in-plant emergency surveys.

S. Off-Site Emergency Surveys **700**

1. Learn techniques for performing emergency off-site radiation and contamination surveys.

T. Plant Systems **1500**

1. Discuss and demonstrate a knowledge of plant systems and how their configuration effects plant radiological safety during normal operation, shutdown and emergency conditions.

Approximate Total Hours **8000**

Apprenticeship work processes are applicable only to training curricula for apprentices in approved programs. Apprenticeship work processes have no impact on classification determinations under Article 8 or 9 of the Labor Law. For guidance regarding classification for purposes of Article 8 or 9 of the Labor Law, please refer to https://dol.ny.gov/public-work-and-prevailing-wage

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APPENDIX B

RELATED INSTRUCTION

Fundamental Mathematics Sciences and Techniques

1. Basic Math
2. Chemistry
3. Algebra
4. Mechanics
5. Nuclear Physics
6. Reactor Fundamentals
7. Electricity
8. Communications

Radiation Protection Principles

1. Radioactivity and Radioactive Decay
2. Sources of Radiation
3. Radiological Quantities and Units
4. Biological Effects and Relative Risks
5. Radiation Detection and Measurement Principles
6. Interaction of Radiation with Matter
7. Radiation Protection Standards
8. Decontamination Techniques
9. Respiratory Protection
10. Radiological Survey Techniques
11. Dosimetry
12. Counting Statistics
13. External Exposure Control
14. Radioactive Contamination Control
15. Airbourne Radioactivity Control
16. Access Control and Work Monitoring
17. Radioactive Material Control
18. Environmental Monitoring

Radiation Protection Equipment

1. Radiological Survey Instruments
2. Calibration Sources
3. Equipment and Procedures
4. Radiation Monitoring Systems

Safety and Health

1. Safety and First Aid (6.5 hours every 3 years)
2. Sexual Harassment Prevention Training – must comply with Section 201-g of the Labor Law

Plant Systems Overview

Plant Operations and Maintenance Overview

Accident and Incident Evaluation and Control

Industrial and Labor Relations

1. History and Background
2. Current Laws and Practices

Other Related Courses as necessary

144 Hours of Related Instruction are Required for each Apprentice for each year.

Appendix B topics are approved by New York State Education Department.