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**IMPLEMENTATION GUIDANCE FOR
NCRP STATEMENT NO. 15
“RESPIRATORY PROTECTION
RECOMMENDATIONS FOR WORKERS
AND VOLUNTEERS RESPONDING TO A
NUCLEAR INCIDENT OUTSIDE THE
AFFECTED AREA”**

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NO. 15 "RESPIRATORY PROTECTION
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AFFECTED AREA"**

**Prepared by:
CRCPD's HS/ER-14 Task Force for Guidance Development for Radiological
Respiratory Protection for Ancillary Emergency Workers**

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HS/ER-14 Implementation Guidance for NCRP Statement No. 15

Introduction and Background

This information was developed to provide implementation guidance for the NCRP Statement No. 15 “Respiratory Protection Recommendations for Workers and Volunteers Responding to a Nuclear Incident Outside the Affected Area”.¹ This document is targeted toward the decision-makers in charge of a Community Reception Center (CRC) or Shelter following a nuclear incident, and to those individuals with health physics experience who are making emergency worker protective action recommendations at these facilities, such as the health and safety officers. This document provides quick-start implementation guidance for determining whether an ancillary worker requires respiratory protection and how to implement the provision of the respiratory protection.

A CRC is a location where population monitoring takes place.² Population monitoring is typically performed by public health professionals who monitor and assess people potentially exposed to radiation or contaminated with radioactive material. There may also be volunteers and other emergency workers at a CRC. A Shelter is a facility complementary to a CRC. A shelter provides temporary housing, security, food service, health and mental health services, ongoing health surveillance, and other similar services.³ A shelter may be operated by local government agencies or by private entities. Information in this implementation guidance may be used by either. There are special considerations that will need to be made when operating a shelter in a radiation emergency to ensure the health and safety of shelter residents and the emergency workers/volunteers. Many of these emergency workers/volunteers at CRCs or shelters may not have received previous training on radiation protection and will require just-in-time training as the facility is set up and activated.

An ancillary worker at a CRC or Shelter is not typically an individual who has previous experience in health physics. Ancillary workers provide public health services to potentially contaminated people away from the affected area and may have a risk of inhalation of radioactive materials from resuspension of contamination from surfaces, individuals, or other airborne radioactivity. These ancillary workers may not have received previous training on radiation protection, personal protective equipment, or the use of respiratory protection. An example of an ancillary worker would be volunteers from a Medical Reserve Corps. First responders such as firefighters, emergency medical services, and first receivers such as clinical/medical staff are not considered ancillary workers for the purpose of this document.

Preparedness and Planning

- 1.0 The facility should have in place a plan for a Community Reception Center or a Shelter as applicable. That plan should address if there is a potential need for respiratory protection and how that need will be handled. It is recommended that the plan emphasize engineering controls which can be implemented to avoid the need for respiratory protection, though it should also include how to implement the use of respiratory protection if it is deemed necessary.
- 2.0 The facility director and the individual(s) making protective action recommendations for the workers should be aware of the inventory of potential respiratory protection equipment available to the facility.

- 3.0 Respirators come in many types and have specific regulations on maintenance and use (e.g. N95, full and half-face, powered air purifying respirator, etc.). The Occupational Safety and Health Agency (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) are the best resources for learning about requirements for respirators.^{4,5} To safely use respirators under normal conditions, there must be a respiratory protection program implemented which includes how to select respirators; medical evaluations to ensure the workers can safely wear respirators; fit testing to ensure the correct size of respirator is issued to a worker; procedures for how to use, clean, store, and maintain respirators; and worker training on respirators.
- It is possible that ancillary workers have little or no experience with respirators and have not received the required medical examinations, fit testing, or training.
 - A just-in-time session to provide medical examinations, fit testing, and training to the ancillary workers should be included in the facility plans if respirator use is planned.
 - The plan should include the potential need to issue respiratory protection to ancillary workers who have not received the just-in-time training or fit testing. Under emergency conditions ancillary workers in need of respiratory protection should wear respirators even if they have not been previously fit tested.
- 4.0 Physical inventory should be performed on the respiratory protection equipment in accordance with facility procedures. Some types of respirators have expiration dates. Some will have parts which wear down after time. Equipment should be inspected closely for defects.
- 5.0 If respirators are not available, face coverings such as surgical masks, and cloth masks may provide some degree of protection. However, these devices are not considered respirators.
- 6.0 The plan should include pre-scripted messaging targeted toward all facility workers to explain basic radiation safety including: a description of hot zones, how protection from inhalation radiation dose will be implemented, potential risks, and health and safety practices.

Actions to Take During the Establishment and Opening of a CRC or Shelter

- 1.0 Every effort should be made to eliminate the need for respiratory protection. When there may be a potential for airborne inhalation of radioactive materials such as from resuspension of contamination, efforts to avoid bringing contamination into the facility are recommended. Examples of these actions are identified in NCRP Statement No. 15 and include:
- Establishing and operating contamination screening prior to individuals entering the facility.
 - Providing a change of clothing and footwear to arrivals.
 - Applying effective strategies to locate ingress/egress points to minimize potential routes of radioactive contamination transport into the facility.
- 2.0 To address the potential for radioactive contamination, which may be in the facility and may be resuspended into the air, efforts to protect ancillary workers should include:
- Limiting the time ancillary workers spend in the contamination screening areas and establishing a rotation of workers.
 - Utilizing electronic dosimeters and area air monitoring devices to alert workers.
 - Managing ventilation systems to isolate areas with the potential for airborne radioactive contamination.

- Disposing and storing potentially radioactive contaminated waste properly.
 - Assigning qualified individuals to monitor the facility and evaluate the potential for internal exposure.
- 3.0 By utilizing techniques to prevent contamination into the facility or address contamination already present in the facility, the risk of exposure by all emergency workers to airborne radioactive contamination will be lessened.
- 4.0 As previously stated, every effort should be made to eliminate the need for respirators. A tiered approach to the use of respirators during a nuclear incident is recommended as follows:
- Conventional respirator capacity means that there are adequate respirators in inventory and workers are all pre-trained and qualified for the use of respirators. With this approach, workers may be issued respirators in accordance with the facility plan.
 - Contingency respirator capacity means that there are adequate respirators in inventory but some of the workers are not pre-trained and qualified for the use of respirators. These workers would need just-in-time training prior to being issued respirators. Ancillary workers will likely fall into this category. If the need for respirators is urgent, it may be acceptable to issue available respirators to workers even if they have not received just-in-time training and fit testing. Every effort should be made to return to conventional respirator capacity.
 - Crisis respiratory capacity means that there are not respirators available or there is an inadequate supply of respirators and some of the workers are not pre-trained and qualified for the use of respirators. In this situation, any respirators available should be prioritized for the workers with the highest potential for exposure. Face coverings such as surgical masks may be considered until additional respirators become available. Every effort should be made to upgrade to contingency or conventional respirator capacity.
- 5.0 The facility decision makers should remain in regular communication with the health physics workers who are performing radiological monitoring and dose assessments of the facility environment and all emergency workers. For any emergency workers who have the potential to receive internal dose, bioassay should be implemented when possible.
- Health physics staff will provide protective action recommendations to the facility decision makers regarding the need for respirators and the implementation of protective measures to reduce the risk of airborne contamination in the facility. This information should include specific information on why or why not respirators are recommended for some or all facility workers.
 - Health physics staff will provide data and information on potential internal doses to all emergency workers.
 - Health physics staff will assist with the development of messaging for facility workers to explain why respirators are or are not recommended and basic radiation principles such as inhalation dose and contamination. These messages should be pre-scripted in the plan to allow for quick and specific customizing to fit the specific radiological conditions.

REFERENCES

¹NCRP Statement No. 15 “Respiratory Protection Recommendations for Workers and Volunteers Responding to a Nuclear Incident Outside the Affected Area”; August 22, 2022, by National Council on Radiation Protection and Measurements. https://ncrponline.org/wp-content/themes/ncrp/PDFs/2022/Statement_15.pdf

²“Population Monitoring in Radiation Emergencies – A Guide for State and Local Public Health Planners”; Second Edition, April 2014, by Centers for Disease Control and Prevention. <https://www.cdc.gov/nceh/radiation/emergencies/pdf/population-monitoring-guide.pdf>

³“A Guide to Operating Public Shelters in a Radiation Emergency”; February 2015, by Centers for Disease Control and Prevention. <https://www.emergency.cdc.gov/radiation/pdf/operating-public-shelters.pdf>

⁴ OSHA respiratory protection 1910.134. <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134>

⁵ NIOSH Guide to the Selection and Use of Particulate Respirators. <https://www.cdc.gov/niosh/docs/96-101/default.html>