

# Radiation Response Worker Exposure Guidelines <sup>1 2 3</sup>

Total Effective Dose Equivalent (TEDE) Guideline	Activity	Condition
5 rem	All occupational exposures	<ul style="list-style-type: none"> <li>Dose limit to emergency workers: 5 rem</li> <li>Use all reasonable measures to minimize dose</li> <li>For most <a href="#">Radiological Dispersal Devices</a>, radiation control measures will maintain exposures below 5 rem</li> <li>Some rescues may involve exposures &gt; 5 rem</li> <li>When 5 rem limit is exceeded, worker monitoring must be made available and volunteers for such activities should be made fully aware of the risks</li> </ul>
10 rem	Protecting valuable property necessary for public welfare (e.g., a power plant)	<ul style="list-style-type: none"> <li>Exposures to emergency workers protecting valuable property necessary for public welfare may exceed 5 rem</li> <li>Use all reasonable measures to minimize dose</li> <li>When 5 rem limit is exceeded, worker monitoring must be made available and volunteers for such activities should be made fully aware of the risks</li> <li>For potential doses &gt; 10 rem, special medical monitoring programs should be employed, and exposure should be tracked in terms of the unit of absorbed dose (<a href="#">rad</a>) rather than TEDE (rem).</li> </ul>
25 rem	Lifesaving or protection of large populations	<ul style="list-style-type: none"> <li>During large incidents (e.g., <a href="#">Improvised Nuclear Devices</a>) exposures to emergency workers may exceed 5 rem</li> <li>Emergency response activities may include: lifesaving, protection of large populations, prevention of mass spread of destruction</li> <li>Use all reasonable measures to minimize dose</li> <li>When 5 rem limit is exceeded, worker monitoring must be made available and volunteers for such activities should be made fully aware of the risks</li> <li>For potential doses &gt; 10 rem, special medical monitoring programs should be employed, and exposure should be tracked in terms of the unit of absorbed dose (<a href="#">rad</a>) rather than TEDE (rem).</li> </ul>

<sup>1</sup> Adapted from [Protective Action Guides for Radiological Dispersal Device \(RDD\) and Improvised Nuclear Device \(IND\) Incidents](#) (PDF - 481 KB), (DHS/FEMA draft document, published in Federal Register January 3, 2006, Z-RIN 1660-ZA02)

<sup>2</sup> Emergency response decisions resulting in worker exposure doses greater than 5 rem

- Made by on-scene Incident Commander during incident when exceeding 5 rem is unavoidable
- Reflect actual incident circumstances/worker activity (e.g., need to save lives or critical infrastructure)
- Require informed consent from responding worker

<sup>3</sup> Decision points for restricting response workers' activities have been recommended by various other agencies.

Agency	Summary Information	Original Document
National Council on Radiation Protection and Measurement (NCRP)	<a href="#">NCRP Radiation Protection Guidelines: Control of Radiation Dose in the Control Zones</a>	<a href="#">Key Elements of Preparing Emergency Responders for Nuclear and Radiological Terrorism</a> (NCRP Commentary No. 19, December 2005, page 19, purchase required; see <a href="#">Free Overview</a> (PDF - 219 KB))
International Atomic Energy Agency (IAEA)	<a href="#">IAEA Emergency Worker Turn-back Dose Guidance</a>	<a href="#">Manual for First Responders to a Radiological Emergency</a> (PDF - 2.2 MB) (CTIF, IAEA, PAHO, WHO, October 2006, page 41)
Conference of Radiation Control Program Directors, Inc. (CRCPD)	<a href="#">CRCPD Turn-back Exposure Rates and Dose Guidelines</a>	<a href="#">Handbook for Responding to a Radiological Dispersal Device (Dirty Bomb): First Responder's Guide: The First 12 Hours</a> (CRCPD Publication 06-6), page 28. Conference of Radiation Control Program Directors, Inc. Frankfort, Kentucky, 2006.
International Commission on Radiological Protection (ICRP)	<a href="#">ICRP Guidance for Occupational Exposure</a>	<a href="#">Protecting People Against Radiation Exposure in the Event of a Radiological Attack</a> (International Commission on Radiological Protection, ICRP Publication 96, 2005, page 51)