

## INTERNATIONAL NUCLEAR AND RADIOLOGICAL EVENT SCALE (INES)

Level/ Descriptor	Nature of the Events	Examples
<b>7</b> <b>MAJOR ACCIDENT</b>	<ul style="list-style-type: none"> <li>Major release: Widespread health and environmental effects requiring implementation of planned and extended countermeasures.</li> </ul>	Chernobyl NPP, USSR (now in Ukraine), 1986 Fukushima NPP, Japan, 2011
<b>6</b> <b>SERIOUS ACCIDENT</b>	<ul style="list-style-type: none"> <li>Significant release: Likely to require full implementation of planned countermeasures.</li> </ul>	Kyshtym Reprocessing Plant, Russia, 1957
<b>5</b> <b>ACCIDENT WITH WIDER CONSEQUENCES</b>	<ul style="list-style-type: none"> <li>Limited release: Likely to require partial implementation of some planned countermeasures</li> <li>Severe damage to reactor core / several deaths from radiation.</li> <li>Release of large quantities of radioactive material within an installation with a high probability of significant public exposure. This could arise from a major criticality accident or fire</li> </ul>	Windscale Pile, UK, 1957 Three Mile Island, NPP, USA, 1979 Goiania, Brazil, 1987
<b>4</b> <b>ACCIDENT WITH LOCAL CONSEQUENCES</b>	<ul style="list-style-type: none"> <li>Minor release of radioactive material unlikely to result in implementation of planned countermeasures other than local food controls.</li> <li>Fuel melt or damage to fuel resulting in more than 0.1% release of core inventory.</li> <li>At least one death from radiation/release of significant quantities of radioactive material within an installation with a high probability of significant public exposure.</li> </ul>	Tokaimuro, Japan, 1999 Saint-Laurent des Eaux NPP, France, 1980 Fleurus, Belgium, 2006 Mayapuri Incident, India, 2010
<b>3</b> <b>SERIOUS INCIDENT</b>	<ul style="list-style-type: none"> <li>Near accident of an NPP with no safety provisions remaining.</li> <li>Highly radioactive sealed source lost or stolen/misdelivered without adequate radiation procedures in place to handle it.</li> <li>Exposure rates of more than 1 Sv/h in an operating area</li> <li>Severe contamination in an area not expected by design, with a low probability of significant public exposure</li> <li>Exposure in excess of ten times the statutory annual limit for workers/ Non-lethal deterministic health effect (e.g. burns) from radiation.</li> </ul>	Vandellos NPP, Spain, 1989 Ikitelli, Turkey, 1999.  Sellafield, UK, 2005 Yanango, Peru, 1999
<b>2</b> <b>INCIDENT</b>	<ul style="list-style-type: none"> <li>Significant failures in safety provisions but with no actual consequences</li> <li>Exposure of member of public in excess of 10mSv/exposure of a worker in excess of the statutory annual limits/ Radiation level in an operating area of more than 50 mSv/h</li> <li>Significant contamination within the facility into an area not expected by design</li> <li>Found highly radioactive sealed orphan source, device or transport package with safety provisions intact./ inadequate packaging of highly radioactive material sealed source</li> </ul>	Forsmark.Sweden, 2006  Atucha, Argentina, 2005
<b>1</b> <b>ANOMALY</b>	<ul style="list-style-type: none"> <li>Minor problems in safety components with significant defence in depth remaining/ low activity lost or stolen radioactive source, device or transport package</li> <li>Overexposure of member of public in excess of statutory limits.</li> </ul>	Breach of operating limits at a nuclear facility/ theft of radioactive source
<b>0</b> <b>DEVIATIONS BELOW SCALE</b>	No safety significance	