

CATEGORIZATION OF GENERATORS AND OTHER RADIATION SOURCES

Category	Source / Practice	Activity Ratio (A/D) & Risk Level
1	- High energy accelerators (Linacs, Cyclotron) - Teletherapy (⁶⁰Co Unit) - Gamma Knife - Unsealed sources - Nuclear Reactors - Irradiators - Storage of radioactive material or waste and disposal - Radioisotope thermoelectric generators (RTGs)	$A/D \geq 1000$ or Personally extremely dangerous (HIGH RISK)
2	- PET - SPECT - CT scanners (including CT simulators) - Conventional Simulators - Brachytherapy (High Dose Rate and Medium Dose Rate) - Industrial radiography sources (including NDT devices) - Gamma radiography camera - Gamma radiography crawlers - VACIS scanners	$1000 > A/D \geq 10$ or Personally very dangerous (HIGH RISK)
3	- X-ray fluoroscopy machines - Angiography machines - C-Arm - Plane X-ray machines (includes portable x-ray machines) - Superficial X-rays - Fixed industrial high-activity gauges - Well logging gauges - Density gauges - Level gauges Backscatter gauges - Moisture or density gauges - In-stream analysis gauges - Portable gauges	$10 > A/D \geq 1$ or Personally dangerous (MEDIUM RISK)
4	- X-ray industrial gauges - Low activity industrial gauges - Panoramic and cephalometric dental X-rays - Whole body bone densitometers - Full scan vehicle imaging system	$1 > A/D \geq 0.1$ or Unlikely to be dangerous (LOW RISK)
5	- Brachytherapy permanent implants - X-ray Fluorescence (XRF) analysers - X-ray Diffraction (XRD) machines - Mammography units - Intra oral and portable dental units - Veterinary X-rays units - Baggage scanners - Portable bone densitometers - Check sources	$0.01 > A/D$ and $A > \text{exempt}$ or Not dangerous (LOW RISK)

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Plain Language Description of the Categories

Category	Risk in being exposed to an individual source within close proximity
1	Extremely dangerous to the person: This source, if not safely managed or securely protected, would be likely to cause permanent injury to a person who handled it or who was otherwise in contact with it for more than a few minutes. It would probably be fatal to be close to this amount of unshielded radioactive material for a period in the range of a few minutes to an hour.
2	Very dangerous to the person: This source, if not safely managed or securely protected, could cause permanent injury to a person who handled it or who was otherwise in contact with it for a short time (minutes to hours). It could possibly be fatal to be close to this amount of unshielded radioactive material for a period of hours to days.
3	Dangerous to the person: This source, if not safely managed or securely protected, could cause permanent injury to a person who handled it or who was otherwise in contact with it for some hours. It could possibly — although it would be unlikely — be fatal to be close to this amount of unshielded radioactive material for a period of days to weeks.
4	Unlikely to be dangerous to the person: It is very unlikely that anyone would be permanently injured by this source. However, this amount of unshielded radioactive material, if not safely managed or securely protected, could possibly — although it would be unlikely — temporarily injure someone who handled it or who was otherwise in contact with it for many hours, or who was close to it for a period of many weeks. Exposure may, however, result in possible delayed health effects.
5	Most unlikely to be dangerous to the person: No one could be permanently injured by this source. Exposure may, however, result in possible delayed health effects.

Reference: IAEA Safety Guide No. RS-G-1.9 Categorization of radioactive sources.