

Radioactive Material in Quantities of Concern (RAMQC)

CODE OF CONDUCT ON
THE SAFETY AND SECURITY OF
RADIOACTIVE SOURCES

放射源安全和保安行为准则

CODE DE CONDUITE SUR
LA SÛRETÉ ET LA SÉCURITÉ
DES SOURCES RADIOACTIVES

КОДЕКС ПОВЕДЕНИЯ ПО
ОБЕСПЕЧЕНИЮ БЕЗОПАСНОСТИ И
СОХРАННОСТИ РАДИОАКТИВНЫХ
ИСТОЧНИКОВ

CÓDIGO DE CONDUCTA
SOBRE SEGURIDAD TECNOLÓGICA
Y FÍSICA DE LAS FUENTES
RADIATIVAS

مدونة قواعد السلوك بشأن أمن المصادر
المشعة وأمنها

- Materials and quantities that could be useful to a terrorist
- Based on IAEA Code of Conduct
- Sixteen radioactive materials
- Considers chemical, physical, and radiological characteristics.
- Thresholds determined for three categories of material based on potential consequences

Radioactive Material in Quantities of Concern (RAMQC)

- Category 1 sources, if not safely managed or securely protected would be likely to cause permanent injury to a person who handled them, or were otherwise in contact with them, for more than a few minutes.
- It would probably be fatal to be close to this amount of unshielded material for a period of a few minutes to an hour.
- Radiothermal generators, irradiators and radiation teletherapy.

Radioactive Material in Quantities of Concern (RAMQC)

- Category 2 sources, if not safely managed or securely protected, could cause permanent injury to a person who handled them, or were otherwise in contact with them, 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.
- Industrial gamma radiography, high dose rate brachytherapy and medium dose rate brachytherapy.

Radioactive Material in Quantities of Concern (RAMQC)

- Category 3 sources, if not safely managed or securely protected, could cause permanent injury to a person who handled them, or were otherwise in contact with them, for some hours.
- It could possibly — although it is unlikely — be fatal to be close to this amount of unshielded radioactive material for a period of days to weeks.
- Fixed industrial gauges involving high activity sources (for example, level gauges, dredger gauges, conveyor gauges and spinning pipe gauges) and well logging.

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Radioactive Material	Category 1		Category 2	
	Terabequerels ¹ (TBq)	Curies (Ci)	Terabequerels (TBq)	Curies (Ci)
Americium-241	60	1,600	0.6	16
Americium-241 /Beryllium	60	1,600	0.6	16
Californium-252	20	540	0.2	5.4
Curium-244	50	1,400	0.5	14
Cobalt-60	30	810	0.3	8.1
Cesium-137	100	2,700	1.0	27
Gadolinium-153	1000	27,000	10.0	270
Iridium-192	80	2,200	0.8	22
Plutonium-238	60	1,600	0.6	16
Plutonium-239 /Beryllium	60	1,600	0.6	16
Promethium-147	40,000	1,100,000	400	11,000
Radium-226	40	1,100	0.4	11
Selenium-75	200	5,400	2.0	54
Strontium-90 (Yttrium-90)	1,000	27,000	10.0	270
Thulium-170	20,000	540,000	200	5,400
Ytterbium-169	300	8,100	3.0	81

¹Terabequerel is the official value to be used for determination whether a material is a Category 1 or Category 2 quantity. Curie (Ci) values are provided for practical usefulness

Security Requirements for Transport of RAMQC



For Categories 1 and 2



Draft Rule
to Commission
by end of 2009