Fukushima Daiichi Nuclear Power Plant Accident
Data Dictionary

Air Volume (m^3)

The total volume of air that is drawn through the air sampler during the collection time, in units of cubic metres.

Becquerel (Bq)

The International System (SI) unit of radioactivity, equivalent to one nuclear transformation per second.

Bq/m^3

Becquerel per cubic metre. The units used to report radioactivity concentration in air.

Cesium radioisotopes (^{134}Cs, ^{136}Cs, ^{137}Cs)

Cesium radioisotopes can be present in the environment as nuclear fission or activation products, which subsequently undergo decay that is accompanied by characteristic beta particle and gamma ray emissions. Cesium-134 (^{134}Cs) has a half-life of 2.06 years, cesium-136 (^{136}Cs) has a half-life of 13.1 days, and cesium-137 (^{137}Cs) has a half-life of 30.17 years.

Collection Start (UTC)

The date the air filter was installed in the air sampler for collection, in Coordinated Universal Time.

Collection Time (s)

The total time of sampling when air is being drawn through the air sampler, in units of seconds.

Iodine (^{131}I, ^{132}I, ^{133}I)

Iodine-131 (^{131}I), iodine-132 (^{132}I), and iodine-133 (^{133}I) are nuclear fission products that may be found in the environment, undergoing decay that is accompanied by characteristic beta particle and gamma ray emissions, with half-lives of 8.0 days, 2.3 hours, and 20.8 hours, respectively. Notably, ^{131}I is also produced commercially for widespread medical applications.

Lanthanum 140 (^{140}La)

Lanthanum-140 (^{140}La) is an activation product with a half-life of 1.7 days that may be found in the environment, undergoing decay that is accompanied by characteristic beta particle and gamma ray emissions.

Lead 210 (^{210}Pb)

A naturally occurring radionuclide with a half-life of 22.3 yrs. ^{210}Pb decay is accompanied principally by beta particle emission. ^{210}Pb results from the decay of uranium found in the earth's crust.

MDC

The smallest concentration of radioactivity that can be reliably detected in a sample, for a given time of measure.

Technetium 99m (^{99m}Tc)

An anthropogenic radionuclide with a half-life of 6.5 hr.^{99m}Tc decay is accompanied by strong gamma ray emission. ^{99m}Tc can be present in the environment as a fission product, but most commonly occurs due to its prevalent use in nuclear medicine.

Tellurium radioisotopes (^{132}Te, ^{129}Te, ^{129m}Te)

Tellurium-132 (^{132}Te), tellurium-129m (^{129m}I), and tellurium-129 (^{129}I) are nuclear fission products that may be found in the environment, undergoing decay that is accompanied by characteristic beta particle and gamma ray emissions, with half-lives of 3.2 days, 33.6 days, and 69.6 min, respectively.

Uncertainty

The amount the calculated value may vary from the true value.

Xenon radioisotopes (^{131m}Xe, ^{133}Xe, ^{133m}Xe, ^{135}Xe)

Xenon-131m (^{131m}Xe), xenon-133 (^{133}Xe), xenon-133m (^{133m}Xe), and xenon-135 (^{135}Xe) are isotopes of the noble gas, xenon, that may be found in the environment from activities involving the nuclear fission of uranium-235, with half-lives of 11.9 days, 5.2 days, 2.2 days, and 9.2 hours, respectively. These half-lives are sufficiently long so as to permit their detection at great distances, yet short enough to render their concentration in air relatively low. Xenon monitoring is part of the comprehensive nuclear-test ban treaty (CTBT).

References

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