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CRIIRAD Press Release

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Radioactive Iodine / Hungaria

Case on the contamination by iodine 131 in the ambient air in Europe

It is urgent to verify the extent of the contamination in the vicinity of the Hungarian site and to take all corrective radioprotection measures locally.

Low levels of radioactive iodine have been detected in the ambient air in different European countries for a few weeks.

CRIIRAD indicated in a former press release on November 16 : « *the most preoccupying thing is the fact that several weeks after the contamination outburst, no national or even international authorities have been able to determine the origin of the contamination. There is an urgency as the populations close to the source of the contamination could have been and may still be exposed to subsequent doses.*

Considering the iodine 131 being released in the atmosphere, the doses received by ingestion during the days following the releases may be more significant than those received by inhalation. Unnecessary irradiation can still be avoided if the concerned population is informed of the situation and if protective measures are taken”.

[Source : <http://www.criirad.org/actualites/dossier2011/aiea/iode131.html> / In French]

We learned on **November 17** from an IAEA release that the Hungarian Atomic Energy Authority (HAEA) had informed the UN agency that the source of the iodine 131 releases was probably an **institute for radioisotope production** in **Budapest**. The releases would have occurred from **September 8 through November 16, 2011**.

[source : <http://www.iaea.org/newscenter/pressreleases/2011/prn201127.html>]

According to the information published on the Hungarian official website, the Institute for radioisotope production (izotop Intezet) would have been issued an authorization to release annually 1600 GBq hence 1 600 billion becquerels. The translation of the text does not allow to pinpoint whether this authorization concerns all radioactive substances or if it pertains to iodine 131 only. In order to ascertain this fact, it would be necessary to obtain the official release authorizations. However, the director of the institute refers to this limit to indicate that the iodine 131 releases conducted since the beginning of the year (624 GBq) stand at 39% of the annual authorization limit which comforts the idea that the 1600 GBq can concern the iodine 131 only.

According to the Director of the institute, the operation plant would have released 300 GBq of iodine 131 in the atmosphere from January to May 2011. It would then have been stopped from June to the end August. It is unclear whether new filtering devices have been installed and tested. Nevertheless, the authorities indicate a release of **324 GBq** between **September and November 16**, which is a very high value.

[source : http://www.haea.gov.hu/web/v2/portal.nsf/hirek_hu/192B87A50B67A20EC125794B00269FD0 et <http://www.izotop.hu/>]

A release of radioactive iodine of 300 + 324 GBq, hence 624 GBq as declared by Izotop Intezet for the year 2011 is indeed 28 300 times higher than the radioactive iodine releases done in 2009 by the electronuclear plant of Tricastin (France) and 130 times higher than those done by the AREVA nuclear fuel reprocessing plant in the Hague (see table below).

A release of 624 GBq of iodine 131 is susceptible to conduct to unacceptable doses for the local population.

To compute the doses, it would be necessary to know the load distribution on the release within the time frame, the height of the release point, weather conditions, determine whether there are cultures and fields in the area... We do not have these elements of information at this point.

However in terms of comparison, it may be useful to indicate that the Belgium authorities in charge of fixing the iodine 131 releases limits of the IRE (National Radioelement Institute) in Fleurus (Belgium), considered that an effective dose of 1 milliSievert (to the most exposed local inhabitants) corresponded to an annual release of 279 GBq (classical release conditions) or to a concentrated release of 84 GBq over 35 days.

In the case of Izotop Intezet in Budapest, the local population could therefore be subject to a dose higher than one milliSievert, the maximum annual dose limit (ICRP International standard).

CRIIRAD is requesting that an investigation be launched urgently in order to determine the levels of contamination in iodine 131 in the vicinity of the Budapest site and, while waiting for the results, that the population be informed not to consume vegetable and dairy products produced locally.

In addition to the contamination by iodine 131, it is essential to verify the release levels of other radioactive substances (other fission and activation products) as well as rare gases, tritium and carbon 14. The iodine 131 is indeed extracted from materials irradiated by a nuclear reactor adjoining the isotope institute.

It is also necessary to verify rapidly if the system used to monitor the releases in these facilities (nuclear reactor and isotope institute) is reliable and if the announced quantity of iodine 131 released was not underestimated.

It will also be necessary to treat the severe dysfunctions revealed in this affair. Very high release authorization limit (*), control failure of the releases, lack of transparency, default in taking protective measures of the population.

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Comparison of the release authorizations and effective releases in radioactive iodine in different facilities.

Facility	Annual release authorization (radioactive iodine) / GBq	Effective release according to operator (GBq)	Year of release
Institute of Radioisotopes (Hungaria)	1600 (??)	624	2011 (January to May / September-november)
La Hague Reprocessing Plant / France	18	4,8	2009
Tricastin nuclear reactors (4 reactors of 900 MW each) / France	1,6	0,022	2009

(*) As indicated in the table above, these authorizations to release radioactive iodine are very high, by comparison with those in other nuclear plants : 1000 times higher than the Tricastin plant in the Rhône Valley, France (4 electronuclear reactors of 900 MW) and 88 times higher than the treatment plant in the Hague (France).