



Commission de Recherche et d'Information
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CRIIRAD is a French NGO, created after the Chernobyl accident and dedicated to radioprotection, research and information on radioactivity. Thanks to its laboratory, CRIIRAD controls radioactive contamination of food, environment, materials and everyday

"LEGAL" CONTAMINATION OF FOOD IN CASE OF A NUCLEAR ACCIDENT

*No plutonium
In the baby bottle !*



CRIIRAD denounces the scandalous work of Euratom experts and calls for massive mobilization against the project of the European Commission

The European Commission proposition

The European Commission has prepared a proposition of Regulation fixing the **Maximum Permitted Levels (MPLs) of radioactive contamination to be applied to food in case of nuclear accident**. This project is being currently examined by the Parliament (for opinion) and the Council of the European Union (for decision). Being a regulation, this text, once adopted, will be applied directly and compulsorily in all the states of the European Union, without any possibility of change.

Limits of contamination are established for **4 groups of radionuclides** (schematically: plutonium, strontium, iodine and cesium) and **5 categories of foodstuff**: infant food, milk, beverages (including drinking water), basic food (meat, fish, vegetables, fruits, cereals...) and so-called "minor" foods. If the contamination level exceeds the limit, the product will not be allowed to be put on the market ; if the contamination level does not exceed the limit, the radioactive food will be allowed for free marketing within the Union, as well as for exportation from Europe to third countries or for importation into Europe from contaminated third countries.

Maximum Permitted Levels of Radioactive Contamination in Food following a Nuclear Accident (expressed in Bq/kg)	Categories of food				
	Infant food	Dairy produce	Other food except minor food	Liquid food	Minor food
Isotopes of strontium, notably Sr-90	75	125	750	125	7 500
Isotopes of iodine, notably I-131	150	500	2 000	500	20 000
Alpha-emitting isotopes of plutonium and transplutonium elements, notably Pu-239, Am-241	1	20	80	20	800
All other nuclides of half-life greater than 10 days, notably Cs-134, Cs-137	400	1 000	1 250	1 000	12 500

Unacceptable risk levels

Radioactive substances are acknowledged carcinogenic, mutagenic and genotoxic pollutants. That is why it is crucial that the contamination levels ensure a sufficient level of protection. Such is not the case.

The limits fixed in the project of regulation correspond to unacceptable levels of risk and put **ON THE CHILDREN the heaviest share of the health prejudice**. Moreover the project provides no specific protection for pregnant women (while the radio-sensitivity of the foetus is widely demonstrated) nor for women who are breastfeeding (whereas the radionuclides such as radioactive iodine pass easily into breast milk and infants are the most vulnerable age group).

If one is to believe the European Commission, that maximum permitted levels of radioactive contamination guarantee compliance with the limit of effective dose, i.e. **1 mSv / year**. That assertion is totally false. **The audits conducted by the CRIIRAD reveal doses in the order of 10 times, and up to 100 times, this limit. And it must be kept in mind that a dose level of 1 mSv already represents a high risk level.** For example, if the European population (500 million consumers) should receive a dose of 1 mSv, this exposition would induce nearly 20 000 fatal cancers¹. If the free marketing of contaminated food should expose each European consumer to doses of 10 mSv, this would lead to about 200 000 radio-induced fatal cancers (and should be added curable cancers, genetic diseases and non-cancer diseases). If only 5% of the European people should be exposed to 10 mSv, the health consequences would still be very heavy, with about 10 000 fatal cancers.

Why such differences between the statements of the European Commission and the reality of risks?

An incredible accumulation of extremely serious anomalies

The regulation proposition is an impenetrable document which does not specify neither the level of risk deemed acceptable, nor the reference level of dose, nor the assumptions used for the calculations (food habits, age groups, percentages of contaminated foodstuffs, rate of contamination ...)

When urged to give explanations, the European Commission has eventually inserted (in the explanatory memorandum introducing the project of regulation) a reference to the **scientific report² that justifies and validates the choice of the Maximum Permitted Levels (MPLs) of radioactive contamination**. This report was written in 1998 by Euratom experts (the experts of the European Commission concerning radiation protection, group of experts established under Article 31 of the Euratom Treaty).

The analysis of this document has enabled us to identify a whole series of errors, incoherencies and irregularities. All of them are serious and ALL OF THEM seem to aim at this same goal: to minimize the doses and the risks, which leads to fixing excessively high contamination levels. Here follow some of the most significant anomalies:

- **A major and prohibitive inconsistency: the clause of distance.** As the experts point out themselves, **the MPLs were defined for the impact of a remote accident occurring outside the EU, typically over 1000 km of its borders**. With the certainty of this prerequisite, the experts calculated the limits for small percentages of contaminated food (10% of the solid food, 1% of the drinking water). There would be nothing to object to that if the text of the regulation had respected the basic axiom and specified that its field of application is limited to the import of food from third countries contaminated by a nuclear accident. But this is not the case: **the regulation applies to ANY accident**, including if it occurs in an EU Member State! Obviously, in such a case, the previous calculations are no longer valid: the percentage of contaminated food could be considerably higher, imposing much lower limits. Such a major incoherence cannot have escaped the European experts and decision-makers! In their notice of November 2012, which validates the MPLs, the Euratom experts invite the European Commission to consult them in emergency in case of a major contamination affecting Europe: in this case, MPLs would no longer be valid! But nothing is said about how long it will take to develop new regulations and then to have them adopted by the 28 Member States, and this is totally absurd : it is precisely because, in case of an accident, it is vital to act very quickly that pre-established and immediately applicable MPLs must be defined!

¹ Nominal risk coefficients of ICRP for stochastic effects after exposure to radiation at low dose rate. International Commission on Radiological Protection, Publication 103, 2007. We can also consider the cancer incidence (fatal + non-fatal cancers): according to ICRP publication, if 500 million consumers should receive each a dose of 1 mSv, more than 80 000 radiation-induced cancers would be expected. This value is a relevant order of magnitude for the assessment of standards of protection and acceptable levels of risk. After a nuclear accident, the actual damage will depend on the nature of the radionuclides released and the radio-sensitivity of target organs.

² Radiation Protection 105: EU Food Restriction Criteria for Application after an Accident. European Commission, DG Environment, Nuclear Safety and Civil Protection.

- **A huge lie:** the regulation states that the limits fixed for liquid foods take into account the **current consumption of drinking water**. Consequently, one could expect the calculations to be made in order to provide a minimal consumption of 1 liter of water per day (WHO recommends 2 l/day). But the analysis of the experts' report shows that MPLs were defined for **one or two mouthfuls of water per day**: 7 ml/d for a 1 year old child and 16 ml/d for an adult³! Such ridiculously low figures obviously lead to establishing quasi-criminal contamination limits for such a vital product as water. Unable to justify such choices, the authors of the regulation text have obviously opted to write a blatant falsehood, with potentially very serious consequences.
- **Unthinkable "oversights":** we will mention only one here, but a very revealing one: the so-called "lower importance foodstuffs". For this type of food, the European authorities have decided to set very high limits: they are 10 times higher than those defined for basic food! Such a decision, the principle of which is already criticable, could be understood if the experts had made the necessary assessments and demonstrated, with supporting figures, that the consumption of so contaminated goods would actually be negligible. But we have nothing of the kind in the report: there is not one line on the subject!!
- **Incomprehensible "mistakes":** let's pass over the referencing errors and let's point out, among the most worrying examples, the mistake about the coefficient allowing to calculate the radiation dose received by an infant who ingests food contaminated by plutonium 239. The level mentioned in the table (and used for calculations) is 10 times lower than the official figure (which the experts claim they apply): thus the level of dose, and of risk, is divided by 10, which entails fixing limits which are 10 times too high. How is it possible that reference documents that are crucial for our protection could overlook the very basics of quality control?
- **Blameworthy procedures:** one of the most shocking procedure entails the lack of protection of the most vulnerable population group: the newborn infants. Instead of making their calculations for the under-twelve-months-old babies, the experts have opted for the 6-to-18-months old as the critical group. Thanks to this shift, they allow themselves to use the dose coefficients set for 1 to 2 years old children. However, these coefficients are generally much lower than those of the newborn babies. Again, this allows the experts to fix contamination limits which are higher than those that would have been conceived for under-one-year infants. When health protection is at stake, it is absolutely vital to adjust the calculations to the most vulnerable persons. Otherwise they won't be protected.
- **Irresponsible negligence:** although this is a fundamental problem, the question of thyroid exposure due to the contamination of food by the radioactive isotopes of iodine is mentioned in a 3 line note at the bottom of a table! Thus we are told that, in the case of a prolonged incorporation of iodine 131, it is recommended to check not only the effective dose but also the thyroid dose. But it is precisely up to the experts to conduct such assessments! This would have shown them that even time-limited incorporations of iodine pose problems. And who else will do the job since the regulation text does not include any hint at the contents of the experts' report? It is crucial that the limits fixed for radioactive iodine should guarantee thyroid protection. In 1998, the word "epidemic" was used to qualify the staggering increase of thyroid cancers among the populations exposed to the fallout from Chernobyl. The most affected group was composed of children who were under 5 years of age in 1986! How can one treat so offhandedly – in a mere note which content is false! – a major issue for the protection of children's health ?
- **A minimal report:** in their evaluation report on the validity of the Maximum Permitted Levels, the Euratom experts satisfied themselves with calculating doses for only 2 categories: adults and babies (incidentally they did not treat the question of breastfeeding). They did not conduct any calculation either for children or for teenagers whereas, for certain radionuclides and certain foodstuffs, they are the ones who compose the critical group. Our assessments show that the limit for iodine in milk

³ A contamination factor of 0.01 (1%) is applied to children's consumption (250 l/year => 2,5 l/year => 6,8 ml/day) and adults' consumption (600 l/year => 6 l/year => 16 ml/day).

ought to be calculated on the basis of toddlers (1-3 years old), not infants. The particular case of fetuses was not even mentioned in the experts' report.

- **Objectionable choices:** in their 1998 report, the Euratom experts acknowledged that MPLs are not appropriate for high-risk population groups and especially for the consumers whose food is produced essentially locally. It would be necessary to revise MPLs downwards in order to protect everyone but the experts recommend an alternative approach: inform the people concerned of the particular risks they run. Once informed, it is their responsibility to ensure their own protection. The State's responsibility will only go as far as informing them.

And the list goes on: 1/ erroneous classifications of radionuclides (the isotopes of uranium in the cesium group, for instance), 2/ inaccurate calculations due to errors in the use of limits, 3/ dose calculations which do not take into account the possible presence of radionuclides belonging to different groups (just imagine a major nuclear accident NOT causing the release of a whole cocktail of radioactive substances, especially cesium AND iodine!), 4/ the unjustified exclusion of two key radionuclides, i.e. tritium and carbon 14, and so on.

All those biases lead to understating the importance of the doses, and the effects are cumulative. As a result, the MPLs defined in the European regulation project are excessively lax. Thus the economic costs are considerably reduced: the higher the limits, the lesser the amount of contaminated foodstuffs that need to be disposed of, the fewer the farmers and the stockbreeders who will have to be compensated. **But to WHOSE HEALTH'S EXPENSE?** What is at stake is the protection of 500 million European consumers (and among them dozens of million children) against radioactive pollutants that can lead to cancers for the exposed people and genetic diseases for their descendants (not mentioning the many pathologies which the official system of radioprotection does not always take into account).

Establish the responsibilities

How to explain such malfunctioning? Incompetence? Mere carelessness? Deliberate deception? Obedience to the statutory mission of the Euratom treaty, which is to ensure the rapid development of nuclear industries? ... The CRIIRAD has none of the answers but is determined to obtain explanations and sanctions.

In an email dated 21/04/2015, then by recorded delivery mail, the CRIIRAD has requested, from the European Commissioner for public health and food security, the **communication of the names and professional references of the Euratom experts who produced the 1998 report and gave their approval opinion in 2012⁴.**

This opinion, dated 21st November 2012 and signed by the chairman of the Group of Experts, confirms the conclusions of the 1998 report: the Maximum Permitted Levels of radioactive contamination defined in the 1987 regulation are still valid; they can be reenacted and included in the new European regulation project. Not only have the experts NOT corrected the glaring anomalies of the 1998 report, but they have not even cared to fill the gaps that this report had indicated. For instance, in 1998, the Euratom experts complained that they lacked information about the food habits of European consumers. Since then, the EFSA⁵ has elaborated and made available a large database containing precise information that can be classed by country, by product and by age group. Well, the Euratom experts have not thought fit to use it to correct the initial estimations. And another example: in 1990, only cesium 134 and cesium 137 were taken into account in order to define the limits concerning cattle food; well, 25 years later, not a single radionuclide was added to the list! And the same remark applies to the controls and their implementation: what types of controls, with what types of gear and what kind of logistics? Nothing is prescribed whereas several recent reports show that, even in normal conditions,

⁴ On June 4th 2015, having obtained no answer, in spite of a follow-up letter in the form of an e-mail, the CRIIRAD filed a complaint with the European ombudsman against the European Commission. This complaint is being instructed currently

⁵ European Food Safety Authority. Database on food consumption : <http://www.efsa.europa.eu/fr/datexfooddb.htm>

food controls are not effective enough. If nothing is planned and anticipated, in the conditions of an accident, one can expect the worst!

Call for mobilization

The CRIIRAD call upon all European citizens to sign the petition which demand a complete, transparent and democratic recast of the regulation to be applied in case of accident.

To sign on-line, here is the site: <http://criirad-protegeonsnotrealimentation.wesign.it/en>

The responsibility for defining and fixing the norms of radioprotection **MUST** be withdrawn from the Euratom Treaty and transferred to the European Union Treaty. The limits of dose and contamination must NOT be dedicated to the development of nuclear industry, but to radiation protection. In accordance with the clauses of the European Treaty, they **MUST** guarantee:

1/ a high level of protection for consumers,

2/ the application of the precautionary principle,

3/ the application of the “polluter pays” principle. This last point is crucial: thanks to the specific system of nuclear civil responsibility, the operator of a Nuclear Power Plant is exempted from compensating for all the physical injuries and the material damages that this NPP is capable of causing. In France, the operator’s responsibility is still limited to a maximum amount of 91 million euros⁶, whereas it is now admitted that a major nuclear accident costs **HUNDREDS OF BILLION EUROS**, without mentioning what have no price: suffering, anguish, disease and death.

The European Parliament will give its opinion concerning the European Commission's project on July 8th. After this, the European governments will have to decide. If we want to influence the decisions, there must be many of us. Join our actions, write to your MEP and governments, and sign the petition...

DO NOT LET THE NUCLEAR LOBBY DETERMINE YOUR FUTURE !



To be informed and to act: <http://www.criirad.org/>

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⁶ If one adds the states' contribution, the total sum rises up to 670 million euros, a ridiculous amount when one considers the needs. If the 2004 convention is signed eventually, the guaranteed sum will reach 1.4 billion euros, which will not be much of a change: in case of nuclear accident, people will have to LIVE IN A CONTAMINATED AREA, CONSUME CONTAMINATED FOOD and PAY THE PRICE WITH THEIR HEALTH AND THE HEALTH OF THEIR DESCENDANTS.