codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

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DRAFT REVISED GUIDELINE LEVELS FOR RADIONUCLIDES IN FOODS FOR USE IN INTERNATIONAL TRADE

COMMENTS AT STEP 6 (IN RESPONSE TO CL 2004/27-FAC)

The following comments have been received from: European Community, Venezuela and IAEA

EUROPEAN COMMUNITY:

In response to CL 2004/27-FAC, the European Community offers the following comments regarding the '*Guideline Levels for Radionuclides in Foods for Use in International Trade*':

The European Community increasingly has reservations as regards the scope and the content of the proposed draft revised guideline levels.

With regard to the long-term use of the levels, the European Community is not convinced that for the sake of simplification one should introduce conceptual ambiguities in trying to provide single values for short-term and long-term intervention levels after an accident as well as for exclusion levels in normal situation. The European Community proposes the deletion, in the current Codex document, of any explicit or implicit reference to contamination of foodstuffs resulting from routine releases. In addition, the Community is of the opinion that for the sake of clarity the title of the Codex document should be amended as follows: " *Proposed Draft Revised Guideline Levels for Radionuclides in Foods following Accidental or Malevolent Contamination for Use in International Trade"*. The Community suggests that Codex can take advantage of and refer to other international guidance which regulates routine authorised discharges and ensures that the public do not receive unacceptable doses.

Moreover, in order to avoid misuse of those guideline levels and the resulting unnecessary hindrances to trade of food at borders, controls should solely be put in place in cases where there are reasonable grounds for assuming that the values might be exceeded as a result of an accidental release or malevolent contamination. Therefore, the European Community proposes that the current Codex document should be amended, with the effect of introducing clearly this precondition.

The European Community notes that in this proposal still no distinction is made between infant and adult foods. There are indeed grounds for abandoning the different food categories in particular in light of the large uncertainties on the relevant scenarios that would match the actual magnitude of the accident (or of a malevolent intentional contamination). However, irrespective of the scenarios, the assumption that only 10% of the diet will be contaminated (as a result of imported food) may not apply to infants, who have a diet essentially based on formulated milk with little variety. This argument also applies to a certain extent to milk as such. Hence, with regard to discarding the category of "infant food", the European Community still has a strong reservation. The European Community proposes that there should be two separate categories for "infant food" and for "other food" and that the appropriate dose coefficients should be used in each case.

On the basis of the experience gained from the Chernobyl accident, the European Community considers that the assumptions concerning food distribution that have been made to derive the guideline levels may not always apply for a major accident, e.g., in the case of wide-spread radioactive contamination the fraction of food contaminated could be much higher than the one considered. However, the Community draws attention to the fact that extreme conservatism would lead to much lower levels that might cause severe disruption of the food supply in Europe. Therefore, the Community stresses the point that national governments and international organisations such as the European Union should, in the event of an accident affecting the food production within or outside their territories, have the right to set maximum permitted levels for foodstuffs which if necessary to achieve the appropriate level of protection due to actual circumstances and as substantiated by a proper assessment may be different from those proposed by Codex.

The Community in addition holds the view that the criterion stated in the current draft for the long-term use of the levels, in the aftermath of an accident, 10 µSv/year, will not necessarily be met. In particular, it should be underlined that for specific foodstuffs and specific consumer groups, the exposure beyond the first year could easily still exceed the 10 µSv/y criterion.

Finally, the European Community doubts the validity, for the European Union, of statistics to estimate the mean fraction of food imported from contaminated areas in the long-term, in the aftermath of an accident, and the acceptance by the European citizen of the use of such figures in the scientific justification for the proposed guideline levels.

Arguments are given in Annex 1.

ANNEX 1

Long term exposure assessment

Beyond one year after the emergency the fraction of contaminated food placed on the market will decrease as a result of:

- *Decrease of contamination in the affected country:*
  - *National restrictions (withdrawal from the market)*
  - *Change to other produce*
  - *Agricultural countermeasures*
  - *Decay*
- *Consumer preference*
  - *Other food types*
  - *Different country of origin*

Note:

1. *this should not be a reason to relax controls too soon, in order not to encourage relaxation of measures in the affected country*
2. *food that is suitable for long term storage or that may be processed for that purpose may still be available and progressively placed on the market*
3. *the origin is not always traceable*
4. *the affected country may be tempted to blend contaminated food with non-contaminated, thus increasing the average concentration.*

Experience has shown that in the long term the fraction of imported contaminated food will decrease by 100 or more. Specific food categories, e.g. wild forest products, may show persistent or even increasing levels of contamination. Other categories of food may gradually be exempted from controls.

It would be difficult to explain to the public that one should apply a world-wide import/production factor of 0.0001 which would represent a consumption of less than a few tens of grams of the food product. For Infants: a food product containing 1000 Bq/kg Cs-137 represents a dose of 21 µSv/kg.

VENEZUELA:

PLACE IN THE TEXT	WHERE IT SAYS:	IT SHOULD SAY:
Page 206 Appendix XXII SCOPE	The Guideline Levels apply to radionuclides contained in foods destined for human consumption and traded internationally, which are inherently contained in the food or have been incorporated into the food from any source. These guideline levels apply to food after reconstitution or as prepared for consumption, i.e., not to dried or concentrated foods, and are based on an intervention exemption level of around 1 mSv in a year.	The Guideline Levels apply to radionucleides contained in foods destined for human consumption and traded internationally, whether imported or produced in the country itself. These Guideline Levels are intended only for radionuclides that are released by a nuclear or radiological accident and contaminate the foods, and not for radionucleides that form part of the environmental radiological background and naturally occur in the diet. These guideline levels apply to food alter reconstitution or as prepared for consumption, i.e., not to dried or concentrated foods, and are based on an intervention exemption level of around 1 mSv in a year.

IAEA:

The IAEA Secretariat has carefully considered the reservations expressed[1] by Singapore and Malaysia at the 27th Session of the Joint FAO/WHO Codex Alimentarius Commission (June/July 2004) during the preliminary adoption of the proposed draft Codex Guideline Levels for Radionuclides in Food for Use in International Trade (ALINORM 04/27/12, App. XXII). The Agency has also taken account of the reservations made by the delegation of the European Community (EC) at the 27th Session of the Codex Alimentarius Commission that were originally expressed[2] at the 36th Session of the Codex Committee on Food Additives and Contaminants (CCFAC) in March 2004.

Singapore asserted that in the case of a nuclear accident, the combined effects of the individual levels proposed for the four separate radionuclide groupings might result in the safe level of 1 mSv being exceeded (see Table 1 of App. XXII). In other words, even if the individual guideline level for each radionuclide group is not exceeded, the combined effects of all four radionuclide groupings might exceed the total annual safe level of 1 mSv established by the International Commission on Radiation Protection (ICRP).

This conclusion seems to be quite logical. However, a more detailed analysis based both on theory and practice of mitigation of nuclear accident consequences (e.g., Windscale, 1957 and Chernobyl, 1986) proves that the application of the proposed Guideline Levels ensures that the ingestion dose in the first year does not exceed the safe level of 1 mSv.

By way of example (see Table 2, Annex 2, Appendix XXII), it is convenient to divide the assessment of dose figures in the first year after a nuclear accident to the first month, when short-lived radioiodines dominate human intake and ingestion dose, and the subsequent period (11 months), when longer lived radionuclides dominate.

During the first month after a nuclear accident, it is well known that radioiodines, and specifically ^{131}I, dominate human radionuclide ingestion and the associated dose and contributions of other radionuclides are insignificant. Using this approach, the first month dose in infants corresponding to the proposed ^{131}I Guideline Level is about 0.03 mSv and that of adults is less than 0.01 mSv.

1 ALINORM 04/27/41, para. 71
2 ALINORM 04/27/12, paras. 202-203

In the time period after the first month of a nuclear accident, radioiodines and other short-lived radionuclides will have decayed and caesium radionuclides (^{137}Cs and possibly ^{134}Cs) will dominate human radionuclide ingestion because of their high environmental mobility. Contributions of ^{89}Sr, ^{90}Sr, ruthenium, cerium and plutonium will be minimal or negligible because of their low volatility. The other radionuclides in Tables 1 and 2 are not relevant to a nuclear accident.

Detailed calculations based on the data from Table 2 show that for conditions during realistic releases in the first year after a nuclear accident, the composition of a mixture of fission and neutron activation products in imported foods from affected areas will result in an effective dose that will not exceed 0.5 mSv for infants and 0.7 mSv for adults from the ingestion of radionuclides belonging to all radionuclide groups in Table 1.

It is further noted that foodstuffs exported from the affected area would in all likelihood be discontinued immediately after a nuclear accident and therefore, the committed 1st year ingestion dose in importing countries would be much lower than 1 mSv in all the population age groups if the proposed Guideline Levels for radionuclides in foods were applied.

The European Community also expressed reservations, in particular concerning the deletion of a category for "infant foods", at the 36th Session of the CCFAC.[3] The EC recommended the maintenance of separate Guideline Levels for radionuclides in foods for general consumption and for infant foods.

While the IAEA agrees in principle that small children need more protection than the general public, it is of the opinion that the import enforcement of guideline levels for a single category of foods for general consumption is easier than the control of guideline levels for a particular population group, i.e., processed infant foods traded for direct consumption. This point is especially relevant when it is considered that international standards of composition and identification (i.e., product name labelling), as well as age and development criteria for infants, babies and children, vary significantly in national legislations. Therefore, any proposed guideline levels for a particular population group would need to be based on a specific internationally recognized and accepted criteria, standard or product name.[4]

In addition, the IAEA supports single Guideline Levels for all foods because it is difficult to restrict the consumption of imported foods by particular population groups, i.e., imported foods may subsequently be consumed directly by the general population or processed into other foods for consumption by infants.

More importantly, as the Guideline Levels for eleven radionuclides from the twenty under consideration are based on dose assessments for infants (see Table 2, Annex 2, Appendix XXII), the IAEA dose calculations based on the draft Guideline Levels ensure radiation safety for all population groups.

The IAEA therefore suggests the elaboration of single Guideline Levels for all foods regardless of their state of processing or intended market destination.

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[3] ALINORM 04/27/12, paras. 202-203 and Conference Room Document 18 – Comments submitted by the European Community at the 36th Session of the CCFAC.

[4] For example, current official Codex standards containing the term "infant" are Infant Formula (CODEX STAN 72-1981), Processed Cereal-Based Foods for Infants and Children (CODEX STAN 74-1981), Foods for Infants and Children (CAC/RCP 21-1979) and Formulated Supplementary Foods for Older Infants and Young Children (CAC/GL 08/1981) (see http://www.codexalimentarius.net/search/advancedsearch.do for additional details).