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## PART II

Statutory Notifications (S. R. O.)

GOVERNMENT OF PAKISTAN

PAKISTAN ATOMIC ENERGY COMMISSION

NOTIFICATION

*Islamabad, the 5th March, 1996*

IN THE NAME OF ALLAH THE MOST GRACIOUS AND THE MOST MERCIFUL

**S. R. O. 166 (I)/96.**—In exercise of the powers conferred by section 8 of the Pakistan Nuclear Safety and Radiation Protection Ordinance, 1984 (IV of 1984), Pakistan Atomic Energy Commission is pleased to make the following regulations, namely :—

The Pakistan Nuclear Safety and Radiation Protection (Treatment of food by Ionizing Radiation) Regulations, 1996.

1. **Short title and commencement.**—(1) These regulations may be called Pakistan Nuclear Safety and Radiation Protection (Treatment of Food by Ionizing Radiation) Regulations, 1996.

(2) These regulations extend to the whole of Pakistan.

(3) These regulations shall come into force at once.

(339)

Price : Ps. 60.

**2. Definitions.**—(1) In these regulations unless there is anything repugnant in the subject or context—

- (i) "food" shall have the same meaning as given in the Pure Food Ordinance 1960.
- (ii) "ionizing radiation" shall have the same meaning as in Pakistan Nuclear Safety and Radiation Protection Ordinance 1984 (IV of 1984).
- (iii) "treatment" means treatment of food by ionizing radiation.
- (iv) "irradiation" means subjected to treatment; and
- (v) "schedule" means schedule to these regulations.

(2) The words and expressions used in these regulations not defined herein, shall have the meanings assigned to them in the Pakistan Nuclear Safety and Radiation Protection Ordinance 1984 (IV of 1984).

**3. Types of ionizing radiation to be used.**—(1) The following types of ionizing radiations shall be used namely—

- (a) gamma rays from radionuclides Co-60 and Cs-137;
- (b) X-rays generated from radiation apparatus operated at or below an energy level of 5 Mev; and
- (c) electrons emitted from radiation apparatus operated at or below an energy level of 10 Mev.

(2) The over all average dose absorbed by a food subjected to treatment shall not exceed ten kilogray (kGy).

**4. Licences.**—(1) No person, unless he obtains a licence from the Directorate of Nuclear Safety and Radiation Protection, shall—

- (a) carry out the business of treatment; and
- (b) manufacture and prepare food for treatment provided that the selling and distributing of such food shall be exempt from the provisions of licensing.

(2) No person shall treat any food other than the foods specified in Schedule-I and only foods which fall within one of seven permitted classes of food specified in that Schedule shall be treated. However, the mixture of food from the same class, for example a blend of herbs and spices may be treated.

(3) Every application for a licence mentioned in sub-clause (a) of clause (1) shall be made as prescribed by regulation 11 of Pakistan Nuclear Safety and Radiation Protection Regulations, 1990 alongwith a deposit receipt of the licence.

fee specified in Schedule-I of the said Regulations and for licence under sub-clause (b) of clause (1) with a deposit receipt of licence fee as specified in Schedule-II.

(4) Every irradiation facility used for the treatment shall be—

- (a) designed to meet the requirements of safety, efficacy and good hygienic practices of food processing; and
- (b) staffed by adequate, trained and competent personnel.

**5. Hygiene and scope of food to be treated.**—Foods to be treated shall be of good quality, acceptable hygienic condition and shall be handled before and after the treatment according to good manufacturing practices taking into account the particular requirements of the technology of the process.

**6. Conditions for treatment.**—(1) The treatment shall be permissible when it fulfills the technological need or serves a good hygiene purpose.

(2) The treatment shall not be used as a substitute for good manufacturing practice.

**7. Packaging requirements.**—The packaging material shall be of suitable quality, acceptable hygienic condition and according to the requirements of the facility prior to its treatment.

**8. Re-Irradiation.**—(1) Except for foods with low moisture content (cereals, pulses, dehydrated food and other such commodities) treated, for the purpose of controlling insect reinfestation, the foods once irradiated shall not be re-irradiated.

(2) For the purpose of these regulations food shall not be considered as having been re-irradiated when—

- (a) the food prepared from materials which have been treated at low dose levels e.g. about 1 kGy, is treated for another technological purpose;
- (b) the food, containing less than 5 per cent of irradiated ingredient, is irradiated; or
- (c) the full dose of ionizing radiation required to achieve the desired effect is applied to the food in more than one instalments as part of processing for a specific technological purpose.

(3) The cumulative over-all average dose absorbed shall not exceed ten kGy as a result of re-irradiation.

9. **Labelling.**—Every package of food treated shall be marked with—

- (a) the words "Food irradiated by ionizing radiation";
- (b) the green LOGO as prescribed in the Schedule-III; and
- (c) a statement "Not to be re-irradiated".

10. **Dosimetry method.**—(1) A radiation dosimetric monitoring at the facility shall be provided by the licensee which shall state the methods of dosimetry and frequency of calibration of dosimeters to be approved by the Directorate of Nuclear Safety and Radiation Protection.

(2) The doses applied shall be commensurate with the technological and public health purposes and shall be in accordance with good radiation treatment practice as given in Schedule-I.

11. **Inventory Control.**—(1) The licensee shall maintain the record showing—

- (a) date of treatment;
- (b) name, quality and quantity of food treated;
- (c) dose for treatment;
- (d) the dosimetry during treatment; and
- (e) type of package used for food;

(2) The processing record shall be kept for a minimum of three years post-irradiation and shall be made available to the authorized Inspector concerned, on demand.

12. **Inspection.**—(1) The Inspectors of Directorate of Nuclear Safety and Radiation Protection shall enforce the provisions of radiation safety and shall carry out regular inspections.

(2) Premises and records shall be open for inspection to Inspectors of Directorate of Nuclear Safety and Radiation Protection by the management of the facility.

13. **Issuance of certificate for irradiated food items.**—The licensee shall issue to the owner of the product a certificate to be labelled on each batch of food treated showing the following—

- (a) code number of the irradiation facility;
- (b) licence Number issued by the Directorate of Nuclear Safety and Radiation Protection;
- (c) name and quantity of the product;

- (d) the date of irradiation ;
- (e) the purpose of irradiation ;
- (f) source and dose of irradiation ; and
- (g) expiry date of food irradiated.

14. **Import and export of treated food.**—(1) No person shall import or export any food which has been treated unless he obtains no objection certificate (NOC) from Directorate of Nuclear Safety and Radiation Protection.

(2) No objection certificate (NOC) for import shall not be issued to any person unless he produces a certificate from the relevant competent authority of the country of origin showing that the food to be imported was treated in conformity with the doses specified in Schedule-I.

(3) No objection certificate (NOC) for export shall not be issued to any person unless Directorate of Nuclear Safety and Radiation Protection is satisfied that the food to be exported was subjected to treatment in a licensed facility in conformity with the doses specified in Schedule-I.

#### SCHEDULE-I

#### PRESCRIBED DOSES FOR TREATMENT OF FOOD

Class	Description	Purpose of Irradiation	Dose ( kGy) Max.
1	2	3	4
1.	Bulbs, roots and tubers	To inhibit sprouting during storage.	0.2
2.	Fresh fruits and vegetables (other than class 1).	(a) To improve keeping quality by delaying ripening.	1.0
		(b) To control insect infestation.	1.0
		(c) To prolong storage life by partial elimination of spoilage organisms.	2.0
		(d) To satisfy quarantine requirements	1.0

1	2	3	4
3.	Cereals/pulses, their products, dried vegetables/nuts/fruits.	To control insect infestation ..	1.0
4.	Raw fish and seafood and their products (fresh and frozen).	(a) To ensure hygienic quality by reducing the number of pathogenic microorganisms.	5.0
		(b) To prolong shelflife by partial elimination of spoilage organisms.	3.0
5.	Raw poultry and meat and their products (fresh and frozen):	(a) To ensure hygienic quality by reducing the number of pathogenic microorganisms.	5.0
		(b) To prolong shelflife by partial elimination of spoilage organisms.	3.0
6.	Dried herbs, spices condiments.	(a) To ensure hygienic quality by reducing the number of pathogenic microorganisms.	10.0
		(b) To control insect infestation.	1.0
7.	Dried food of animal origin.	To control insect infestation ..	1.0

### SCHEDULE-II

### LICENCE FEE

Purpose	Fee	
	Annual	Renewal
Facility manufacturing/preparing food for treatment by ionizing radiation.	Rs. 25000	Rs. 12500

SCHEDULE III

LOGO FOR FOOD TREATED BY IONIZING RADIATION



[No. DNSRP-RED-4 (59)/92.]

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P.A.E.C.