IAEA-DGPF/CD

Directory of Gamma Processing Facilities in Member States

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EDITORIAL NOTE

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CONTENTS

1. INTRODUCTION

Ionizing radiation can modify physical, chemical and biological properties of materials. This characteristic of radiation was recognised very soon after the discovery of radioactivity [1]. At present, the principal applications concern sterilisation of health care products, food irradiation and materials modification for polymers [2–5]. Besides naturally occurring radioactive isotopes, artificial ones were produced using cyclotrons. A significant impetus, however, was given to the radiation processing industry with the advent of nuclear reactors, which were used to produce radioisotopes. Gamma ray emitters like cobalt-60 became popular radiation sources for medical and industrial applications. Many gamma ray irradiators have been built and it is estimated that less than 200 are currently in operation all over the world. In recent times, the use of electron accelerators as a radiation source (sometimes equipped with X ray converter) is increasing. However, gamma irradiators are difficult to replace, especially in the case of non-uniform and high-density products.

The International Atomic Energy Agency (IAEA) has several programmes related to industrial irradiation applications for processing of various products including those related to health care, pharmaceuticals, food and polymers, and applications associated with plant design, dosimetry and safety. Through the technical co-operation programme, the IAEA supports these activities in developing countries and helps them to build local capacity to implement various industrial applications of radiation processing. The IAEA also organises and conducts training courses and workshops, provides individual training to personnel, and sends experts to the radiation facilities in Member States where help is needed. All these activities can be carried out much more efficiently and effectively if there were a comprehensive directory of radiation facilities operating in Member States. Also, such a compilation would be a valuable tool for networking amongst regional and interregional facilities.

This directory of commercial radiation processing facilities using gamma rays from radioisotopes is the first attempt by the IAEA; it is a compilation of technical, utilization and administrative data based on the information supplied to the IAEA as of 2002. This directory includes radiation facilities that process products for various applications for commercial purposes (including industrial and pilot-scale facilities)[1]. Thus, research laboratories and facilities are not included in the directory. The data were collected through questionnaires distributed to the organisations involved in operating such facilities in Member States.

Various means were employed to reach as many organisations as possible in Member States. Besides distributing the questionnaires to the permanent missions of the Member States to the IAEA (with a request for its subsequent distribution within the country), lists from several manufacturers of the irradiation facilities, participants' lists of various conferences and personal contacts were used to reach relevant organisations. In spite of this effort, it is suspected that many were missed and that some organisations chose not to participate. Overall there are, however, adequate data to make realistic conclusions on some aspects.

Section 2 describes the structure of and the underlying rationale for the questionnaire. Section 3 presents statistical analyses of the data and subsequent conclusions that can be drawn from them. The overall conclusions for the project are elaborated in Section 4. Annex A reproduces the covering letter that accompanied the questionnaire and explains the purpose of the project. A sample of the questionnaire is included as Annex B to aid in the understanding of the analyses. Annex C contains the data for all the irradiation facilities and is presented in the form of a directory.

Realising that this technology is rapidly expanding, IAEA intends to keep the information in the directory current. To achieve this, IAEA will periodically ask presently participating organisations to

[1] This directory includes only commercial (including pilot-scale) facilities, thus the minimum activity of cobalt-60 in the dataset is 15 kCi.

provide current information, and also will try to reach new facilities. It is envisaged that such a directory will eventually cover most of the radiation facilities operating in Member States.

It should be noted that such a compilation would present only partially the status of the radiation processing industry. There are several facilities that use electron accelerators for a variety of radiation processing applications. And with the advent of high-energy and high-powered accelerators number of facilities using this source of radiation is increasing. It is envisaged that the IAEA would make a similar directory for accelerator-based radiation processing facilities.

2. THE QUESTIONNAIRE

A preliminary questionnaire was distributed to a few organisations to test for completeness and understandability. The final version of the questionnaire was then prepared based on the comments and suggestions from these participants. Particular care was taken to make the questionnaire user-friendly; for example, whereever possible multiple-choice answers were provided. The covering letter from the Director, Division of Physical and Chemical Sciences that accompanied the questionnaire explaining the purpose of the directory is reproduced in Annex A, and the sample questionnaire is reproduced in Annex B.

The questionnaire is divided into several sections to make it more transparent and readable as well as to help data analysis. Section A is completely devoted to the radiation processing organisation — mainly administrative information. Important information in this section is the date of response and the date for which the information is valid. Recognising that more than one irradiation unit could be in operation within an organisation, Sections B, C, D and E of the questionnaire relate to each irradiation unit.

Section B concerns administrative information for an irradiation unit, including the contact person; this information proved to be extremely valuable for clarification of some of the input information, and would also be necessary for the future updates of the directory. Section C relates to technical information regarding the irradiation facility: the irradiator, product movement, operating mode, etc. Also included here is the information about the size of the radiation source: design capacity as well as current activity level. Section D is related to legal and regulatory information for each irradiation unit.

Section E relates to processes carried out at each irradiation unit: irradiated product, the purpose of the process, dose values in use and approximate amount per year. This section is expected to generate information showing the current status of various applications in different regions of the world. When followed over time, this kind of information would be very useful to various governments as well as to the IAEA.

Section F is completely devoted to implementation of quality management programmes at the facility. This includes QA programmes and dosimetry systems for process control in use at the facility. For regulated products such as irradiated food and health care products, it is a regulatory requirement to provide documentary evidence that the process is continuously under control. Dosimetry that is traceable to national or international standards can provide such evidence. The IAEA operates a dose assurance service referred to as IDAS (International Dose Assurance Service) to help Member States to achieve standardized dosimetry [6]. Information in this section would be useful to that programme.

Part of Section G provides information about which facilities are willing to support IAEA fellows for scientific training and for scientific visits. This will help facilitate the IAEA's work in their TC projects.

3. ANALYSES

3.1. GENERAL

The total dataset of the directory currently contains 83 organisations which operate 123 irradiation units in 45 Member States. Table I lists these Member States (MS) and their regional classification which is partly based on the IAEA classification system. The number in parenthesis following the name of Member State indicates the number of irradiation units operating there (based on the directory).

TABLE I. REGIONAL DISTRIBUTION OF IRRADIATION UNITS

Region (number of MS)	**Participating Member States**
Africa (3 Member States)	Egypt(1), Ghana(1), South Africa(3) Regional total = 5 irradiation units
East Asia and the Pacific (12)	Australia(2), Bangladesh(2), China(21), India(3), Indonesia(1), Japan(2), Korea (Republic of)(1), Malaysia(4), Philippines(1), Taiwan(2), Thailand(4), Vietnam(1) Regional total = 44 irradiation units
Europe (18)	Austria(1), Belgium(2), Bulgaria(1), Croatia(1), Germany(3), Greece(1), Hungary(3), Ireland(1), Italy(2), Portugal(1), Romania(1), Serbia & Montenegro(1), Sweden(1), Switzerland(1), Netherlands(3), Turkey(2), Ukraine(1), United Kingdom(5) Regional total = 31 irradiation units
Latin America (5)	Argentina(1), Brazil(4), Chile(1), Mexico(2), Peru(1) Regional total = 9 irradiation units
North America (2)	Canada(1), United States of America(28) Regional total = 29 irradiation units
West Asia (5)	Iran, Islamic Republic of (1), Israel(1), Jordan(1), Saudi Arabia(1), Syria(1) Regional total = 5 irradiation units

The following figure shows the regional distribution of these 123 irradiation units.

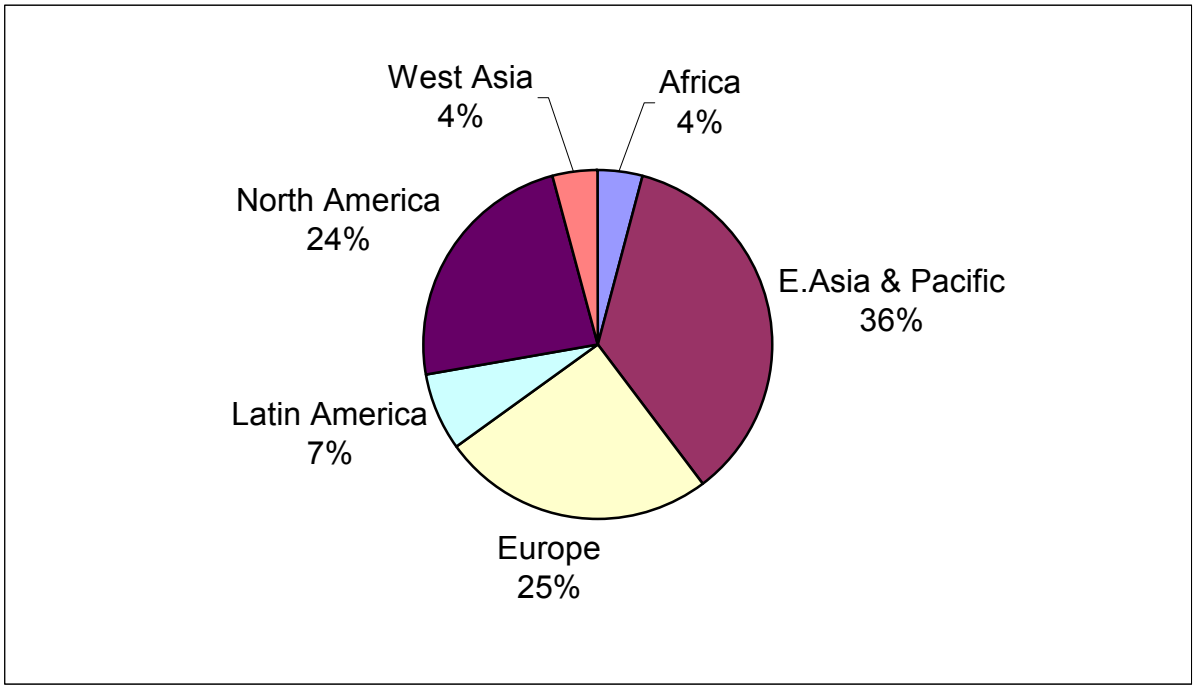

FIG. 1. Regional distribution of 123 irradiation units.

The worldwide distribution of the type of organisation is about equally divided between 'government' and 'private'.

About 13% of the irradiation units received some form of IAEA assistance. If irradiation units in only those Member States that are eligible for IAEA assistance are considered, then this number increases to about 25%.

3.2. IRRADIATION UNITS

All irradiation units have cobalt-60 as the source of radiation.

3.2.1. Facility operation

The details of technical data related to the source and the operation of the facility are shown in Table II.

TABLE II. OPERATION OF THE FACILITY

Source storage	dry (10%) wet (90%)
Source rack	rectangular (86%) cylindrical (10%) other (4%)
Source hoisting	electrical (29%) pneumatic (54%) hydraulic (15%) info unavailable (1%)
Product movement	on pallets (11%) in totes (35%) in carriers (50%) info unavailable (3%)
Operating mode	continuous (72%) in batch (28%) other (1%)

3.2.2. Source activity

Table III shows the distribution of design capacity and current source activity for all irradiation units in the dataset. Some of the organisations preferred not to give this information, which is identified here as 'unavailable'.

TABLE III. REGIONAL DISTRIBUTION OF DESIGN CAPACITY AND CURRENT ACTIVITY OF RADIATION SOURCE

Activity (kCi)		**ALL regions**	**Africa**	**E. Asia & Pacific**	**Europe**	**Latin America**	**North America**	**West Asia**
Design Capacity	unavailable	28	3	9	12	0	1	3
	15–500	23	1	17	2	2	1	0
	500–1000	22	0	8	9	3	0	2
	> 1000	50	1	10	8	4	27	0
Current Activity	unavailable	28	0	2	11	1	14	0
	15–500	53	4	28	12	4	1	4
	500–1000	14	1	5	3	3	1	1
	> 1000	28	0	9	5	1	13	0

3.2.3. Industry growth

The following histogram shows the growth of industrial radiation processing in terms of irradiation units that were commissioned over the indicated time period. Each indicated time period in this histogram is 10 years, except the last one. The figure very clearly presents a significant growth of the industry.

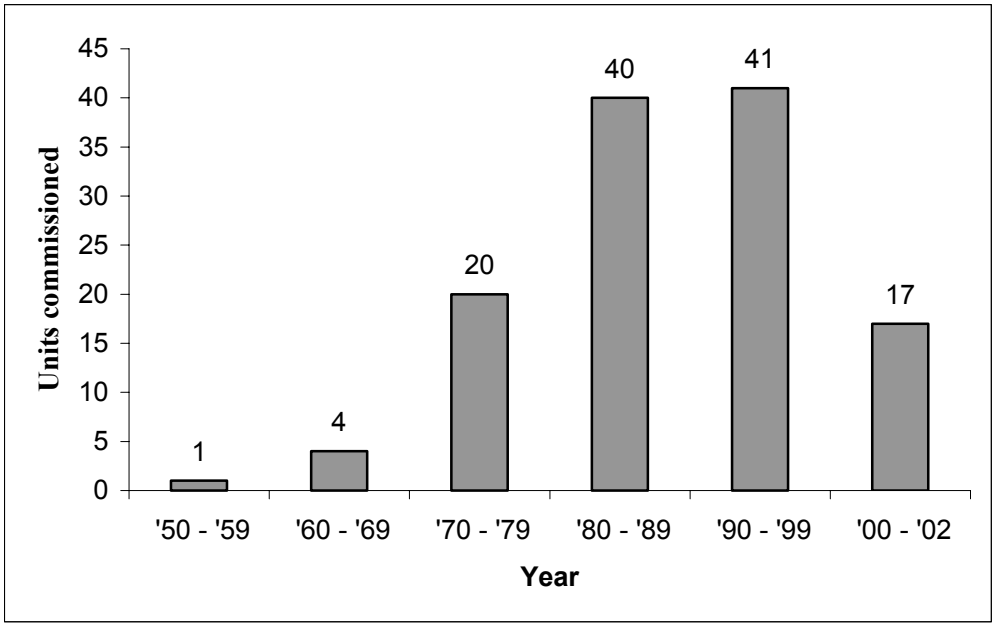

FIG. 2. Number of industrial radiation processing units commissioned in the years 1950–2002.

Since 1990, 58 new irradiation units have been commissioned. Their regional distribution is shown in the following figure.

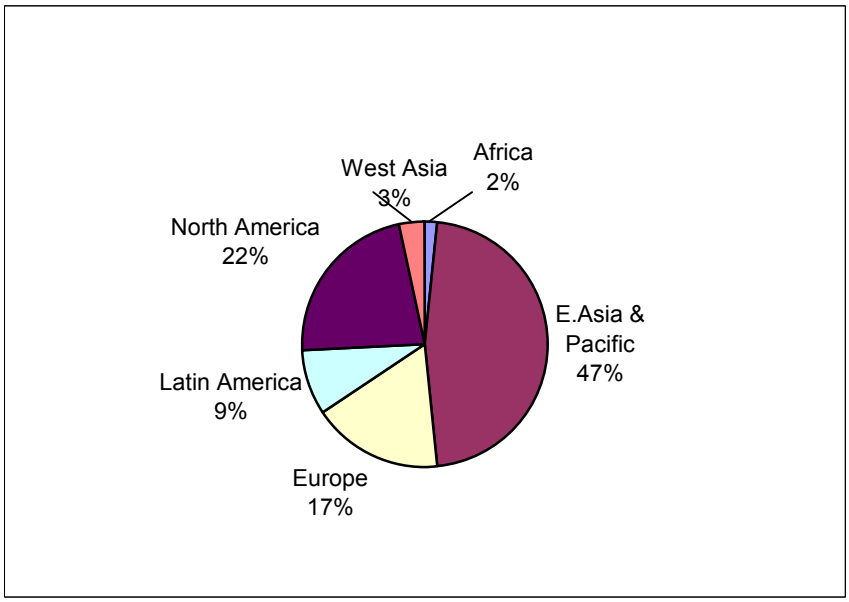

FIG. 3. Regional distribution of industrial radiation processing units commissioned since 1990.

3.2.4. Irradiator manufacturers

The analyses of the data indicated that there were variety of manufacturers of irradiation units. However, the following ones were more prominent: MDS Nordion, Inc., Canada (including its predecessor Atomic Energy of Canada Ltd.); Steri Genics International, U.S.A.; Institute of Isotopes, Hungary; H.S.Marsh, U.K.; Shanghai Institute of Nuclear Research, China; Techsnabexport Co. Ltd., Russia; Board of Radiation & Isotopes Technology, India; Sulzer; Gammaster, The Netherlands; Radiation Technology, Inc., U.S.A. and Isotron, U.K.

3.3. PRODUCTS AND PROCESSES

For ease of data entry and analysis, the products that are being treated at these irradiation units and the irradiation processes are identified by letters (A, B, C, etc.). These classifications are described in Tables IV and V. In the directory, products and processes are listed by their types only.

The distribution of the irradiation units according to types of products processed is given in Table VI. The first column lists the various product types as defined in Table IV. The second set of columns shows the total number of irradiation units processing that product type, followed by the breakdown for each process (as defined in Table V). The third set of columns gives the total amount of product processed in 1000 m^3 per year, followed by the breakdown for each process. For example, for row 1, there are 105 units that process type A product; and out of these, 104 units process it for sterilisation (process A in Table V) and 1 unit for research & development (process E in Table V). For this example, the total amount of product A processed is 336,000 m^3 per year, where 336,000 m^3 is for sterilization (process A) and about 10 m^3 for R&D (process E).

TABLE IV. CLASSIFICATION OF TREATED PRODUCTS

Type	Products
A	Health care products including medical devices, biological tissues, sanitary materials, etc.
B	Agriculture and food products including animal feeds, spices, apiarian products, horticulture products, etc.
C	Pharmaceutical products including raw materials, cosmetics, etc.
D	Miscellaneous (wood shavings, precious stones, electronics parts, etc.)
E	Polymers including cables, tubings, etc.
F	Packaging materials including plastic bags, containers, cheese cloth, etc.
G	Glassware including flasks, etc.
P	Proprietary (information not available).

TABLE V. CLASSIFICATION OF PROCESSES

Type	Processes
A	Sterilization.
B	Decontamination, microbial load reduction.
C	Pest control, sprout inhibition.
D	Properties modification, including polymers.
E	Research & Development.
P	Proprietary (information not available).

TABLE VI. DISTRIBUTION OF TREATED PRODUCTS, PROCESSES AND AMOUNT PROCESSED

Product Type	Number of Units (breakdown as per process)							Amount treated per process (1000 m^3 per year)						
	Total	A	B	C	D	E	P	Total	A	B	C	D	E	P
A	105	104				1		336	336				0.01	
B	100	17	57	20	3	3		177	0.05	158	17	1.4	0.06	
C	58	26	31		1			39	24	15		0.1		
D	19	6	6		4	3		25	20	3.5		1	0.06	
E	37				35	2		6				6	0.06	
F	50	31	19					16	4.3	12				
G	19	19						25	25					
P	2						2							

It is clear from the above data that the main applications are sterilisation of health care products and irradiation of food and agricultural products, and to a lesser extent irradiation of pharmaceuticals, sterilisation and bioburden reduction for packaging and glassware, and irradiation of polymers. It is also interesting to note that nine irradiation units are engaged in research and development besides commercial processing.

Some of the large commercial organisations preferred not to provide information regarding the products treated and/or throughput for their facilities due to its proprietary nature. To this extent, the conclusions based on the analysis of these data would be biased.

3.4. QUALITY ASSURANCE AND DOSIMETRY

3.4.1. QA programmes

It is encouraging to note that 106 irradiation units (about 86%) have some type of QA programme at the facility — 64 follow ISO (International Organization for Standardization) standards, while additional 27 follow ISO *and* CEN (European Committee for Standardization) standards. The remaining irradiation units follow internally developed QA programmes. Table VII shows the regional distribution for these irradiation units.

TABLE VII. IRRADIATION UNITS WITH ESTABLISHED QA PROGRAMMES

Region	Total irradiation units	Units with QA programmes	ISO standards	ISO + CEN standards
Africa	5	3	2	1
East Asia and Pacific	44	34	16	10
Europe	31	27	10	15
Latin America	9	9	7	0
North America	29	29	28	0
West Asia	5	4	1	1
ALL regions	123	106	64	27

As expected, a large number of European irradiation units follow CEN standards. However, it should be noted that several countries in East Asia and Pacific region also follow these.

3.4.2. International Dose Assurance Service (IDAS) of the IAEA

The IAEA initiated the IDAS in 1985 for radiation processing units worldwide. The objects are to promote dosimetric accuracy in products processed in the facilities of MS, and to provide regulatory health authorities concerned with the trade in irradiated products with the confidence that such products have been irradiated to the specified absorbed dose [6]. The data show that thirty-seven irradiation units (about 30%) currently participate in the IDAS programme, while 57 units showed interest in joining the programme. This information for all regions is shown in Table VIII.

TABLE VIII. PARTICIPATION IN THE IAEA IDAS PROGRAMME

Region	IDAS participation	wish to participate in IDAS
Africa	2	2
East Asia and Pacific	8	21
Europe	6	13
Latin America	6	4
North America	14*	15
West Asia	1	2
ALL regions	37	57

* 13 of these irradiation units belong to the same organisation.

3.4.3. Routine dosimetry systems

Table IX shows the number of irradiation units in various regions that use different routine dosimeters.

TABLE IX. REGIONAL DISTRIBUTION OF ROUTINE DOSIMETRY SYSTEMS

Dosimetry system	ALL regions	Africa	E.Asia & Pacific	Europe	Latin America	North America	West Asia
PMMA [7]	59	3	12	18	8	15	3
FWT [8]	20	1	4	1		14	
ECB [9]	12		2	7	1		2
Ceric cerous [10]	6		5	1			
Dichromate [11]	6		6				
Fricke [12]	3	1	2				
Alanine [13]	1		1				
Others*	6		3	3			
None**	10		9	1			

* this includes blue nylon, chemical dosimeter, Aerial optical dosimetry equipment and latex.
** information is not available

As seen in Table IX, PMMA and FWT dosimeters are the most popular routine dosimeters used in the industry, covering about 64% of the irradiation units included in the directory. Their use is generally uniformly distributed in all regions. However, it should also be noted that the type of routine dosimeter in use is quite varied in the East Asia and Pacific region, unlike other regions.

Calibration and traceability are important criteria for the application of dosimetry systems. Table X shows for the entire dataset the number of irradiation units that follow a particular method for calibration irradiation of routine dosimeters. These three methods are recommended by American Society for Testing and Materials International [14].

TABLE X. IRRADIATION OF ROUTINE DOSIMETERS FOR CALIBRATION

Method for calibration irradiation	Number of Units
At an accredited calibration laboratory	31 (25%)
At in-house calibration facility	50 (41%)
In an irradiation facility with traceable transfer dosimeters	33 (27%)
Information not available	9 (7%)

About 95% of the irradiation units claimed that they have some form of traceability[2] for their routine dosimetry system. About half of them stated that their dosimetry system is traceable to either NPL (National Physical Laboratory of the United Kingdom) or NIST (National Institute of Standards and Technology of the US). While about 25% stated that their system is traceable to their own national standards laboratory (other than facilities in UK and USA). The remaining units claimed traceability to other laboratories, including Nordion (Canada) and Risø National Laboratory (Denmark).

[2] Traceability may be defined as the ability to demonstrate by means of an unbroken chain of comparisons that a measurement is in agreement within acceptable limits of uncertainty with comparable nationally and internationally recognized standards [14].

4. CONCLUSIONS

It is evident that the radiation processing industry is growing worldwide. Also, this technology is used for a variety of products and the types of radiation processing applications are also increasing. It is encouraging to note that a large majority of these facilities is being operated under an established QA programme, which should be beneficial for international trade.

The present directory is the most current database on industrial irradiation facilities, which would be a useful tool for industry and researchers. It also provides the IAEA and Member States with valuable materials for establishing contacts and for the preparation of new R&D programmes.

It is envisaged that this database will be updated periodically.

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[14] ASTM Standard guide for selection and calibration of dosimetry systems for radiation processing, ISO/ASTM 51261, Annual Book of ASTM Standards, Vol. 12.02, American Society for Testing and Materials International, Philadelphia, PA, U.S.A. (2002).

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- Food irradiation in the Middle East and Europe, IAEA-TECDOC-754, International Atomic Energy Agency, 1994
- Analytical detection methods for irradiated foods (a review of the current literature), IAEA-TECDOC-587, International Atomic Energy Agency, 1991

For other radiation processing applications

- Radiation synthesis and modification of polymers for biomedical applications, IAEA-TECDOC-1324, International Atomic Energy Agency, 2002
- Use of irradiation for chemical and microbial decontamination of water, wastewater and sludge, IAEA-TECDOC-1225, International Atomic Energy Agency, 2001
- Stability and stabilization of polymers under irradiation, IAEA-TECDOC-1062, International Atomic Energy Agency, 1999
- Radiation technology for conservation of the environment. Proceedings of a symposium held in Zakopane, Poland, 8–12 September 1997, IAEA-TECDOC-1023, International Atomic Energy Agency, 1998
- Sewage sludge and wastewater for use in agriculture, IAEA-TECDOC-971, International Atomic Energy Agency, 1997
- Effects of ionizing radiation on blood and blood components: A Survey, IAEA-TECDOC-934, International Atomic Energy Agency, 1997
- Advanced radiation chemistry research: Current status, IAEA-TECDOC-834, International Atomic Energy Agency, 1996

Dosimetry

- Techniques for high dose dosimetry in industry, agriculture and medicine. Proceedings of a symposium held in Vienna, 2–5 November 1998, IAEA-TECDOC-1070, International Atomic Energy Agency, 1999
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ISO, CEN and ASTM Standards

Following standard guides and practices have been developed by International Organization for Standardization (ISO), European Committee for Standardization (CEN), and American Society for Testing and Materials International (ASTM).

Food irradiation[4]

- ASTM F 1355 Guide for Irradiation of Fresh Fruits as a Phytosanitary Treatment
- ASTM F 1356 Guide for Irradiation of Fresh and Frozen Red Meat and Poultry to Control Pathogens and Other Microorganisms
- ASTM F 1736 Guide for Irradiation of Finfish and Shellfish to Control Pathogens and Spoilage Microorganisms
- ASTM F 1885 Guide for Irradiation of Dried Spices, Herbs, and Vegetable Seasonings to Control Pathogens and Other Microorganisms

Radiation sterilization

- ISO 11137[5] Sterilization of health care products – Requirements for validation and routine control – Radiation sterilization
- EN 552[6] Sterilization of medical devices – Validation and routine control of sterilization by irradiation

Dosimetry for facility operation[4]

- ISO/ASTM 51204 Practice for Dosimetry in Gamma Irradiation Facilities for Food Processing
- ISO/ASTM 51431 Practice for Dosimetry in Electron and Bremsstrahlung Irradiation Facilities for Food Processing
- ISO/ASTM 51608 Practice for Dosimetry in an X-Ray (Bremsstrahlung) Facility for Radiation Processing
- ISO/ASTM 51649 Practice for Dosimetry in an Electron-Beam Facility for Radiation Processing at Energies between 300 keV and 25 MeV
- ISO/ASTM 51702 Practice for Dosimetry in a Gamma Irradiation Facility for Radiation Processing
- ISO/ASTM 51818 Practice for Dosimetry in an Electron Beam Facility for Radiation Processing at Energies between 80 and 300keV
- ISO/ASTM 52116 Practice for Dosimetry for a Self-Contained Dry-Storage Gamma-Ray Irradiator

Individual dosimetry systems[4]

- ISO/ASTM 51310 Practice for the Use of a Radiochromic Optical Waveguide Dosimetry System
- ISO/ASTM 51540 Practice for Use of a Radiochromic Liquid Dosimetry System
- ISO/ASTM 51631 Practice for Use of Calorimetric Dosimetry Systems for Electron Beam Dose Measurements and Dosimeter Calibrations
- ISO/ASTM 51650 Practice for Use of Cellulose Acetate Dosimetry Systems
- ISO/ASTM 51956 Practice for Thermoluminescence Dosimetry (TLD) Systems for Radiation Processing

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[4] These are published in Annual Book of ASTM Standards, Vol. 12.02, Philadelphia, PA, U.S.A. They are available from ASTM International, Customer Service Department, 100 Barr Harbor Drive, West Conshohocken, PA, 19428-2959, U.S.A., by calling +1(610) 832-9585, or by faxing +1(610) 832-9555.

[5] Available from International Organization for Standardization, Case Postale 56, CH-1211 Genève 20, Switzerland.

[6] Available from European Committee for Standardization, Central Secretariat, rue de Stassart 36, B-1050 Brussels, Belgium.

Dosimetry miscellaneous[4]

- ISO/ASTM 51400 Practice for Characterization and Performance of a High-Dose Radiation Dosimetry Calibration Laboratory
- ISO/ASTM 51539 Guide for Use of Radiation-Sensitive Indicators
- ISO/ASTM 51707 Guide for Estimating Uncertainties in Dosimetry for Radiation Processing
- ISO/ASTM 51900 Guide for Dosimetry in Radiation Research on Food and Agricultural Products
- ISO/ASTM 51939 Practice for Blood Irradiation Dosimetry
- ISO/ASTM 51940 Guide for Dosimetry for Irradiation of Insects for Sterile Release Programs
- ASTM E 2232 Guide for Selection and Use of Mathematical Methods for Calculating Absorbed Dose in Radiation Processing Applications

International Meetings on Radiation Processing (IMRP)

The IMRP meetings generally take place every 2 to 3 years since 1976. Information about recent meetings and their proceedings is given below.

12th IMRP 7-12 September 2003, Chicago, U.S.A.

11th IMRP 14-19 March 1999, Melbourne, Australia
Proceedings in Radiat. Phys. Chem. **57**, No. 3-6, 2000

10th IMRP 11-16 May 1997, Anaheim, U.S.A.
Proceedings in Radiat. Phys. Chem. **52**, No. 1-6, 1998

9th IMRP 11-16 September 1994, Istanbul, Turkey
Proceedings in Radiat. Phys. Chem. **46**, No. 4-6, 1995

8th IMRP 13-18 September 1992, Beijing, China
Proceedings in Radiat. Phys. Chem. **42**, No. 1-6, 1993

7th IMRP 23-28 April 1989, Noordwijkerhout, The Netherlands
Proceedings in Radiat. Phys. Chem. **35**, No. 1-6, 1990

Useful Websites

- http://www.revis.com/puridec/radiationprocessing/aboutradiation.html
- http://www.sterigenics.com/material.asp
- http://www.npl.co.uk/npl/rad/services/mailed_reference_dosimetry_online.html
- http://www.cnea.gov.ar/tecno/Co60-eng/

Annex A
COVERING LETTER

الوكالة الدولية للطاقة الذرية
国 际 原 子 能 机 构
INTERNATIONAL ATOMIC ENERGY AGENCY
AGENCE INTERNATIONALE DE L'ÉNERGIE ATOMIQUE
МЕЖДУНАРОДНОЕ АГЕНТСТВО ПО АТОМНОЙ ЭНЕРГИИ
ORGANISMO INTERNACIONAL DE ENERGÍA ATÓMICA

WAGRAMER STRASSE 5, P.O. BOX 100, A-1400 VIENNA, AUSTRIA
TELEPHONE: (+43 1) 2600, FACSIMILE: (+43 1) 26007, TELEX: 112645 ATOM A, E-MAIL: Official.Mail@iaea.org, INTERNET: http://www.iaea.org

IN REPLY PLEASE REFER TO:
PRIERE DE RAPPELER LA REFERENCE: 333-F2

DIAL DIRECTLY TO EXTENSION:
COMPOSER DIRECTEMENT LE NUMERO DE POSTE: 21744 or 21747

Subject: Questionnaire on Radiation Processing Facilities

Sir/Madam,

The International Atomic Energy Agency is in the process of compiling information on radiation processing facilities (commercial and pilot-scale) operating in Member States (MS) with a view to publishing a world directory. The present effort includes only radionuclide facilities, that is those using cobalt-60 or cesium-137 as radiation sources. We need your help and indulgence to accomplish this project successfully. We hope that your replies to the enclosed questionnaire should form a good basis for this document.

The Agency has several programmes related to industrial irradiation applications for processing of various products including those related to health care, pharmaceuticals, polymers and food, and applications associated with dosimetry and safety. Through the Technical Co-operation programme, the Agency supports these activities in developing countries and helps them to build local capacity to implement various industrial applications of radiation processing. The Agency also organises and conducts training courses and workshops, provides individual training to personnel, and sends experts to the facilities in MS where help is needed. All these activities can be carried out much more efficiently and effectively if the Agency had a directory of all the irradiation facilities in its MS.

We are hoping that such a directory will eventually cover all irradiation facilities operating in MS. Since there is no single list currently available covering all such facilities (hence this effort), we are using various sources to reach as many facilities as we can. Because of this, if you receive more than one set of questionnaires, please fill-in only one. **Also, towards this effort, we will appreciate if you let us know of a facility that has not received this questionnaire.** More complete the directory, more useful it can be.

The intention of the Agency is to publish this directory in its Technical Document (TecDoc) series; the current plan being its completion before the end of this year. Realising that this technology is rapidly expanding, we intend to keep the information in the directory current. To achieve this, we will periodically send you request to provide us with current information, and also will try to reach new facilities.

We will send a copy of the final document, at no cost, to each contributing organisation with the hope that a world directory of this nature will be useful to each of you. It can be a very valuable tool for networking amongst regional and interregional facilities. As in all its programmes, the Agency thus acts as a facilitator.

We will appreciate if you can take a few minutes of your time and fill this questionnaire soon, and mail it to Mr O. Gueven (the return address is given on the last page of the questionnaire). For your convenience, it is divided into several sections. Section A relates to the general profile of your total organisation, while the remaining sections relate to technical details and thus should be filled in separately for each irradiation unit in your organisation. If you prefer an electronic version of the questionnaire, please visit the following website:

http://www.iaea.org/programmes/ripc/iachem/questionnaire_gamma.html.

If there are any queries regarding any question, please contact Mr. O. Gueven or Ms. Abel before completing the questionnaire.

Yours sincerely,

D.D. Sood
Director
Division of Physical and Chemical Sciences
Department of Nuclear Sciences and Applications

Encl.

Annex B

SAMPLE OF QUESTIONNAIRE

IAEA QUESTIONNAIRE ON RADIATION PROCESSING FACILITIES

(for gamma-ray facilities only)
(please fill in Section A for your total organisation,
and other Sections (B-G) for each irradiation unit in the organisation)

Please fill in the questionnaire in capital letters or by typing or on computer. Answer all questions; where the questions are not relevant or the answers are unknown, please indicate so.

A. Organisation Profile

Name of the organisation	
Type of the organisation *(private, government, etc.)*	
Postal address	Street
	City
	Country
	Postal code
Other contact modes	Telephone Country code: Area code: Number:
	Fax Country code: Area code: Number:
	e-mail
Web site location	
Number of institutes/centres within the organisation that have irradiation units	
Head of the organisation	Name
	Title

_____ _____

Signature, Head of Organisation Date

B. Irradiation Unit - Administrative

(please answer this Section separately for each irradiation unit)

Name of the Unit	
Postal address *(if different than in Section A)*	Street
	City
	Country
	Postal code
Plant Manager (Head of the Unit)	Name
Contact person	Name
	e-mail
IAEA support for this Unit?	No Yes *(please give details such as TC project number, etc.)*

C. Irradiation Unit – Technical

(please answer this Section separately for each irradiation unit)

Manufacturer of the irradiator			
Type of irradiator			
Commissioning date			
Radiation source	Radionuclide		Design capacity (Ci or Bq)
	Cobalt-60	Cesium-137	
	Initial installation Date:		Activity:
	Last replenishment Date:		Current activity:
Source storage	Dry	Wet	
Source rack	Rectangular	Cylindrical	Other (specify)
Source hoisting	Electric	Pneumatic	Hydraulic
Product movement	On pallets	In totes	In carriers
Operating mode	Continuous	Batch	Other (specify)
Number of personnel			

D. Irradiation Unit – Legal and Regulatory

(please answer this Section separately for each irradiation unit)

Operating licence granted	By whom: When:
Licensed for	Please list processes for which the licence is granted
Special requirements in the licence	Please list if there are any such requirements

E. Processing Products

(please answer this Section separately for each irradiation unit)

-------- OPTIONAL --------

(However, please fill in at least the first column for significant products)

(list the products in the decreasing order of quantity processed, starting with the maximum)

Product	**Purpose of processing**	**Dose range** (kGy)	**Approximate amount** (cubic meter per year)

F. Quality Assurance Programmes and Dosimetry

QA programme in use	No Yes *(give details, e.g., ISO, CEN ?)*
Reference dosimetry system	Specify type of system
	Where is calibration irradiation performed? an accredited calibration laboratory in-house calibration facility industrial facility with transfer dosimeters How often is it calibrated? How often is the readout instrument calibrated?
	Who is it traceable to? National lab NIST NPL Nordion RISO Other .. specify
Routine dosimetry system	Specify type of system
	Where is calibration irradiation performed? an accredited calibration laboratory in-house calibration facility industrial facility with transfer dosimeters How often is it calibrated? How often is the readout instrument calibrated?
	Who is it traceable to? National lab NIST NPL Nordion RISO Other .. specify
IAEA's Dose Assurance Service (IDAS)	Have you heard about it? Yes No Are you a participant? Yes No Would you like to participate? Yes No

G. Miscellaneous

IAEA fellows	Would you accept them for training/apprenticeship? (this generally lasts for 1 – 6 months)	Yes	No
	Would you accept them for scientific visit? (this generally lasts for 1 – 2 weeks)	Yes	No
Upgrading plans	Please specify, if any		
Decommissioning plans	Please specify, if any		

_____ _____ _____

Name, Plant Manager/Head of the Unit Signature Date

Return the completed questionnaire to:

Mr. O. Gueven
Industrial Applications and Chemistry Section
International Atomic Energy Agency
P.O. Box 100
Wagramer Strasse 5
Vienna, A-1400, Austria

e-mail address: O.Gueven@iaea.org

Fax: (43-1) 26007

Annex C

THE DIRECTORY

The participating Member States are listed alphabetically in the directory. The organisations operating the irradiation units are listed under each MS; and each organisation may have one or more irradiation units. The information on the organisation as well as for each irradiation unit is based on the data collected through the questionnaires. The data for each irradiation unit are covered in two pages and are arranged following the structure of the questionnaire.

Following information may help in the interpretation of the data in the directory.

- The 'date of response' is the date when the data were entered in the questionnaire by the participant. Thus, this date indicates the validity of the data at that point in time.

- Either a blank or numeric 0 (zero) in any data field indicates that information was not available, since that item was not filled in by the participant.

- If there was no unique name provided for the irradiation unit, the database assigned an identification name/number to it. This was necessary to ensure that every irradiation unit has a distinct identification and that no two units have the same ID. This does not affect the analysis of the data.

- Under 'Processing Products' if the participant had provided amount/year in units of tons (Mg) per year, this was converted into units of m^3/year. This is clearly indicated in the relevant table with '[conv]' following the calculated value in m^3/year; the original value in tons is also shown in the next column. This conversion was necessary so that data analysis can be carried out in only one unit. The conversion was based on the following expression:

  amount in m^3 = amount in tons / density

  where, density was assigned the following values for the various types of products: 0.3 Mg/m^3 (for product type A); 0.7 (B), 0.5 (C), 1.0 (D), 1.0 (E), 0.5 (F) and 1.0 (G).

- Generally, it is possible to enter only one value in a data field. If the participant had provided more than one answer, a judgement was made to select only one value. For example, some participants indicated using more than one routine dosimeter or more than one standards laboratory for the traceability.

ARGENTINA

Argentina: COMISION NACIONAL DE ENERGIA ATOMICA: PLANTA DE IRRADIACION SEMI-INDUSTRIAL (PISI)

Organization:

Organization: COMISION NACIONAL DE ENERGIA ATOMICA	Type: GOVERNMENT
Postal Address: Av. del Libertador 8250,Capital Federal, 1430, Argentina (ARG)	
Region: Latin America	Number of Irradiation Units: 1
Phone: 54/11/47041224	Fax: 54/11/47041161
Email: ornstein@cnea.gov.ar	Website : http://www.cnea.gov.ar
Head: Roberto Mario Ornstein,	Date of Response: 2001 / 10 / 1

Irradiation Unit:

Unit: Planta de Irradiacion Semi-Industrial (PISI)	IAEA support: NO
Postal Address: Presbitero Juan Gonzalez y Aragon no. 15, Ezeiza - Buenos Aires, B1802AYA, Argentina (ARG)	
Region: Latin America	Contact: Andrea S. Docters
Manager: Andrea S. Docters	Contact Email: docters@cae.cnea.gov.ar

Manufacturer: CNEA	Type of Irradiator: Wet storage irradiator
Commissioning year:	Personnel: 12
Radionuclide: Cobalt-60	Design Capacity: (kCi) 1000
Initial installation:	Initial Activity: (kCi) 225
Last Replenishment: 2001	Current Activity: (kCi) 480
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Electric	Product Movement : In carriers
Operating Mode : Batch	

Operating licence:
1993, by Autoridad Regulatoria Nuclear (ARN)
Licence for:

Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: SOCQA, ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
weekly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	every batch
Traceable to:	Traceable to:
Other - IAEA	Other - CRR (ARGENTINA), IDAS

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

AUSTRALIA

Australia: STERITECH PTY LTD.: IAEA-NR 11

Organization:

Organization: Steritech Pty Ltd.	Type: PRIVATE
Postal Address: 160 South Gippsland Hwy, Dandenong, 3175, Australia	
Region: East Asia and the Pacific	Number of Irradiation Units: 2
Phone: 61/3/97935566	Fax: 61/3/97013158
Email: jpigott@steritech.com.au	Website : www.steritech.com.au
Head: George West, C.E.O.	Date of Response: 2002 / 12 / 30

Irradiation Unit:

Unit: IAEA-NR 11	IAEA support: NO
Postal Address: 160 South Gippsland Hwy, Dandenong Victoria, 3175, Australia	
Region: East Asia and the Pacific	Contact: Paul Newman
Manager: Paul Newman	Contact Email: pnewman@steritech.com.au

Manufacturer: Atomic Energy of Canada Ltd (AECL)	Type of Irradiator: IR 58
Commissioning year: 1971	Personnel: 17
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation: 1971	Initial Activity: (kCi)
Last Replenishment: 2002	Current Activity: (kCi) 1443
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence: 2002, by Victoria Department of Human Services
Licence for: Irradiation of medical and other products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?	
YES: ISO-9001, ISO-13488	
Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: Replace relay control system with PLC.
Decommissioning plans: None.

Australia: STERITECH PTY LTD.: IAEA-NR 130

Organization:

Organization:	Type:
Steritech Pty Ltd.	PRIVATE
Postal Address:	
160 South Gippsland Hwy,Dandenong, 3175, Australia	
Region:	Number of Irradiation Units:
East Asia and the Pacific	2
Phone:	Fax:
61/3/97935566	61/3/97013158
Email:	Website :
jpigott@steritech.com.au	www.steritech.com.au
Head:	Date of Response:
George West, C.E.O.	2002 / 12 / 30

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 130	NO
Postal Address:	
5 Widemere Rd., Wetherill Park, NSW, 2164, Australia	
Region:	Contact:
East Asia and the Pacific	Murray Lynch
Manager:	Contact Email:
Murray Lynch	mlynch@steritech.com.au

Manufacturer:	Type of Irradiator:
Atomic Energy of Canada Ltd (AECL)	IR 141
Commissioning year:	Personnel:
1986	12
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	
Initial installation:	Initial Activity: (kCi)
1986	
Last Replenishment:	Current Activity: (kCi)
2002	2358
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Continuous	

Operating licence:
2002, by EPA-NSW Government - Australia
Licence for:
irradiation general.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO-9001, ISO-13488

Reference Dosimetry System:	**Routine** Dosimetry System:
Ceric Cerous	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Replace relay control with PLC.
Decommissioning plans:	information not available

AUSTRIA

Austria: MEDISCAN GMBH: IAEA-NR 1045

Organization:

Organization: MEDISCAN GMBH	Type: PRIVATE
Postal Address: Im Forschungszentrum,Seibersdorf, 2444, Austria	
Region: Europe	Number of Irradiation Units: 1
Phone: 43/2254/72996	Fax: 43/2254/7299694
Email: seibersdorf@mediscan.co.at	Website : http://www.mediscan.co.at
Head: Hans-Peter Bierbaumer,	Date of Response: 2002 / 11 / 19

Irradiation Unit:

Unit: IAEA-NR 1045	IAEA support: NO
Postal Address: Im Forschungszentrum, Seibersdorf, 2444, Austria	
Region: Europe	Contact: Ms. Irene HIRSCHMUELLER
Manager: Mr. Gerhard NEZAVDAL	Contact Email: i.hirschmueller@gmx.at

Manufacturer: UKEM	Type of Irradiator: Gammatron 1500
Commissioning year: 1992	Personnel: 13
Radionuclide: Cobalt-60	Design Capacity: (kCi) 1500
Initial installation: 1991	Initial Activity: (kCi) 300
Last Replenishment: 2002	Current Activity: (kCi) 730
Source Storage: Dry	Source Rack : Rectangular
Source Hoisting : Hydraulic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence:
1994, by Bezirkshauptmannschaft Baden
Licence for:
Irradiation of medical devices, wound care products, plastic basic material for pharm. manuf.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
A	A	25-	19000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO-9001/EN-46001/ISO-13485

Reference Dosimetry System:	**Routine** Dosimetry System:
PMMA	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
half year	half year
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
every batch	every batch
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

BANGLADESH

Bangladesh: BANGLADESH ATOMIC ENERGY COMMISSION: GAMMATECH LTD.

Organization:

Organization:	Type:
Bangladesh Atomic Energy Commission	Semi-government
Postal Address:	
4 Kazi Nazrul Islam Avenue, POB 158,Dhaka, 1000, Bangladesh (BGD)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	2
Phone:	Fax:
880/2/8619000	880/2/8613051
Email:	Website :
baec@dhaka.agni.com	http://www.
Head:	Date of Response:
Habib Uddin, Chairman	2002 / 1 / 30

Irradiation Unit:

Unit:	IAEA support:
Gammatech Ltd.	NO
Postal Address:	
P.O. Custom Academy, Chittagong, , Bangladesh (BGD)	
Region:	Contact:
East Asia and the Pacific	Mohammad Sultan
Manager:	Contact Email:
Mohammad Sultan	

Manufacturer:	Type of Irradiator:
Techsnabexport Co. Ltd., Moscow	information not available
Commissioning year:	Personnel:
1993	12
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	500
Initial installation:	Initial Activity: (kCi)
1992	90
Last Replenishment:	Current Activity: (kCi)
	28
Source Storage:	Source Rack :
Dry	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
2001, by Government of Bangladesh
Licence for:
food & medical products.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	0-25	70	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	0-2	142.9 [conv.]	100
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C	0-1	142.9 [conv.]	100
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	0-50	14.3 [conv.]	10
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES:

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
information not available	information not available
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	information not available
Traceable to:	Traceable to:

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

Bangladesh: BANGLADESH ATOMIC ENERGY COMMISSION: RESEARCH IRRADIATOR

Organization:

Organization:	Type:
Bangladesh Atomic Energy Commission	Semi-government
Postal Address:	
4 Kazi Nazrul Islam Avenue, POB 158,Dhaka, 1000, Bangladesh (BGD)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	2
Phone:	Fax:
880/2/8619000	880/2/8613051
Email:	Website :
baec@dhaka.agni.com	http://www.
Head:	Date of Response:
Habib Uddin, Chairman	2002 / 1 / 30

Irradiation Unit:

Unit:	IAEA support:
Research Irradiator	NO
Postal Address:	
IFRB, POB 3787, Dhaka, 1000, Bangladesh (BGD)	
Region:	Contact:
East Asia and the Pacific	M. Mosharraf Hossain
Manager:	Contact Email:
M. Mosharraf Hossain	nere@bangala.net

Manufacturer:	Type of Irradiator:
BRIT, Mumbai, India	Panoramic
Commissioning year:	Personnel:
2000	5
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	53
Initial installation:	Initial Activity: (kCi)
2000	50
Last Replenishment:	Current Activity: (kCi)
	44
Source Storage:	Source Rack :
Dry	Cylindrical
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Batch	

Operating licence:
1999, by Nuclear Safety & Radiation Control Division
Licence for:
R&D and semi-commercial purpose
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	14	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	weekly
Traceable to:	Traceable to:
Other - BRIT, India	Other - BRIT, India

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

BELGIUM

Belgium: IBA MEDIRIS S.A.: IAEA-NR 12105

Organization:

Organization: IBA MEDIRIS S.A.	Type: PRIVATE
Postal Address: Zoning industriel,Fleurus, 6220, Belgium	
Region: Europe	Number of Irradiation Units: 2
Phone: 32/71/810084	Fax: 32/71/816353
Email: pdardenne@iba_sni.com	Website : http://www.
Head: Pierre Dardenne, General-Manager	Date of Response: 2001 / 8 / 30

Irradiation Unit:

Unit: IAEA-NR 12105	IAEA support: NO
Postal Address: Zoning industriel, Fleurus, 6220, Belgium	
Region: Europe	Contact: Pierre Dardenne
Manager: Pierre Dardenne	Contact Email: pdardenne@iba_sni.com

Manufacturer: Sulzer	Type of Irradiator: Panoramic
Commissioning year: 1978	Personnel: 9
Radionuclide: Cobalt-60	Design Capacity: (kCi) 0
Initial installation: 1978	Initial Activity: (kCi) 0
Last Replenishment: 2001	Current Activity: (kCi) 700
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Hydraulic	Product Movement : In carriers
Operating Mode : Batch	

Operating licence: 1978, by Ministries of Health & Labour
Licence for:
Special Requirements: Maximal capacity 1 MCi.

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
A	A	10-25	10000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
B	B	2-10	4285.7 [conv.]	3000
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
C	A	10-40	4000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)

Quality Assurance Programm in use?
YES: EN 46002, ISO 13488, ISO 9002

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	Aerial Optical Dosimetry Equipment
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	half year
Traceable to:	Traceable to:
National lab	NPL

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	Rhodotron + X-Rays conversion
Decommissioning plans:	information not available

Belgium: IBA MEDIRIS S.A.: IAEA-NR 1247

Organization:

Organization:	Type:
IBA MEDIRIS S.A.	PRIVATE
Postal Address:	
Zoning industriel,Fleurus, 6220, Belgium	
Region:	Number of Irradiation Units:
Europe	2
Phone:	Fax:
32/71/810084	32/71/816353
Email:	Website :
pdardenne@iba_sni.com	http://www.
Head:	Date of Response:
Pierre Dardenne, General-Manager	2001 / 8 / 30

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 1247	NO
Postal Address:	
Zoning industriel, Fleurus, 6220, Belgium	
Region:	Contact:
Europe	Pierre DARDENNE
Manager:	Contact Email:
Pierre DARDENNE	pdardenne@iba-sni.com

Manufacturer:	Type of Irradiator:
Sulzer	tote box
Commissioning year:	Personnel:
1978	20
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	0
Initial installation:	Initial Activity: (kCi)
1978	0
Last Replenishment:	Current Activity: (kCi)
2001	1500
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Hydraulic	In totes
Operating Mode :	
Continuous	

Operating licence:
1978, by Ministry of Health, Ministry of Labour
Licence for:
Special Requirements:
Maximal capacity 1.8 MCi.

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	10-25	22000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	2-10	8571.4 [conv.]	6000
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-40	4000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: EN 46002, ISO 13488, ISO 9002

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	Aerial Optical Dosimetry Equipment
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	half year
Traceable to:	Traceable to:
National lab	NPL

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	Rhodotron and X-Rays conversion.
Decommissioning plans:	information not available

Belgium: IBA STERILIZATION + IONIZATION EMEAA: IAEA-NR 91130

Organization:

Organization:	Type:
IBA Sterilization + Ionization EMEAA	PRIVATE
Postal Address:	
Attealaan, 4 C,Herentals, 2200, Belgium	
Region:	Number of Irradiation Units:
Europe	1
Phone:	Fax:
32/14/258590	32/14/224496
Email:	Website :
dbarrie@iba-sni.com	http://www.
Head:	Date of Response:
Mr. Dirk Barrie, President	2001 / 11 / 5

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 91130	NO
Postal Address:	
No. 109/16, Moo 4, Tambul Pluak Daeng, A. Pluack Daeng, Rayong Province, 21140, Thailand (THA)	
Region:	Contact:
East Asia and the Pacific	Mr. William J. Trevithick
Manager:	Contact Email:
Mr. William J. Trevithick	wjt@iba.thailand.com

Manufacturer:	Type of Irradiator:
Steri Genics International, USA	Category IV
Commissioning year:	Personnel:
1999	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	3000
Initial installation:	Initial Activity: (kCi)
1999	995
Last Replenishment:	Current Activity: (kCi)
2001	1420
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Batch	

Operating licence:
1999, by Office for Atomic Energy for Peace
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
P	P	-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: NO

Upgrading plans: information not available
Decommissioning plans: information not available

BRAZIL

Brazil: IBRAS-CBO INDUSTRIAS CIRURGICAS E OPTICAS S.A.: IAEA-NR 1146

Organization:

Organization:	Type:
IBRAS-CBO Industrias Cirurgicas e Opticas S.A.	PRIVATE
Postal Address:	
Avenida do Cobalto, 1313 - Jardim Santana,Campinas - Sao Paulo, 13088-070, Brazil (BRA)	
Region:	Number of Irradiation Units:
Latin America	1
Phone:	Fax:
55/19/32564788	55/19/32567899
Email:	Website :
ibrascbo@correionet.com.br	http://www.
Head:	Date of Response:
Paulo Macruz, President	2001 / 9 / 13

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 1146	NO
Postal Address:	
Avenida do Cobalto, 1313 - Jardim Santana, Campinas - Sao Paulo, 13088-070, Brazil (BRA)	
Region:	Contact:
Latin America	
Manager:	Contact Email:

Manufacturer:	Type of Irradiator:
Atomic Energy of Canada Ltd (AECL)	J 6300 and IR 67
Commissioning year:	Personnel:
	7
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	277
Initial installation:	Initial Activity: (kCi)
1973	102
Last Replenishment:	Current Activity: (kCi)
1997	465
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
1973, by CNEN
Licence for:
sterilization of surgical material
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	23-	50	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES:

Reference Dosimetry System:	**Routine** Dosimetry System:
Ceric Cerous	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
industrial facility with transfer dosimeters	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	information not available
Traceable to:	Traceable to:
Nordion	

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

Brazil: EMBRARAD EMPRESA BRASILEIRA DE RADIACOES LTDA: IAEA-NR 6104

Organization:

Organization:	Type:
Embrarad Empresa Brasileira de Radiacoes Ltda	PRIVATE
Postal Address:	
Rua Agostinho Togneri 399,Sao Paulo-SP, 04690-090, Brazil (BRA)	
Region:	Number of Irradiation Units:
Latin America	2
Phone:	Fax:
55/11/56312323	55/11/56312323
Email:	Website :
embrarad@embrarad.com.br; embrarad@dialdata.com.br	www.embrarad.com.br
Head:	Date of Response:
Prof.Dr. R.U. Hutzler, Director	2001 / 10 / 22

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 6104	NO
Postal Address:	
Rua Agostinho Togneri 399, Sao Paulo-SP, 04690-090, Brazil (BRA)	
Region:	Contact:
Latin America	Dr. Hutzler, Beatriz
Manager:	Contact Email:
Prof.Dr. Vizeu, D.M.	embraoc@dialdata.com.br

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	JS 9600
Commissioning year:	Personnel:
1999	20
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	5000
Initial installation:	Initial Activity: (kCi)
1999	600
Last Replenishment:	Current Activity: (kCi)
2001	945
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
2001, by CNEN
Licence for:
Food, herbs, drugs and disposables
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	20-25		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, DQS

Reference Dosimetry System:	**Routine** Dosimetry System:
PMMA	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	information not available
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
daily	daily
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS : YES
Participate in IDAS: YES
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: CNEN - RULES

Brazil: EMBRARAD EMPRESA BRASILEIRA DE RADIACOES LTDA: IAEA-NR 632

Organization:

Organization:	Type:
Embrarad Empresa Brasileira de Radiacoes Ltda	PRIVATE
Postal Address:	
Rua Agostinho Togneri 399,Sao Paulo-SP, 04690-090, Brazil (BRA)	
Region:	Number of Irradiation Units:
Latin America	2
Phone:	Fax:
55/11/56312323	55/11/56312323
Email:	Website :
embrarad@embrarad.com.br; embrarad@dialdata.com.br	www.embrarad.com.br
Head:	Date of Response:
Prof.Dr. R.U. Hutzler, Director	2001 / 10 / 22

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 632	NO
Postal Address:	
Av. Cruzada Bandeirante 269, Cotia-SP, 06700-000, Brazil (BRA)	
Region:	Contact:
Latin America	Dr. Beatriz Hutzler
Manager:	Contact Email:
Prof.Dr. D.M. Vizeu	embraoc@dialdata.com.br

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	JS 7500
Commissioning year:	Personnel:
1980	23
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	3000
Initial installation:	Initial Activity: (kCi)
1980	400
Last Replenishment:	Current Activity: (kCi)
2001	771
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
2001, by CNEN-Comissao Nacional Energia Nuclear
Licence for:
Food, herbs, drugs and disposables
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	20-25		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, DQS

Reference Dosimetry System:	**Routine** Dosimetry System:
PMMA	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	information not available
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
daily	daily
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS : YES
Participate in IDAS: YES
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: CNEN - RULES

Brazil: CBE-COMPANHIA BRASILEIRA DE ESTERILIZACAO: IAEA-NR 733

Organization:

Organization:	Type:
CBE-Companhia Brasileira de Esterilizacao	PRIVATE
Postal Address:	
Rod. D. Pedro I, km 89,5, POB 149,Jarinu, Sao Paulo-SP, 13240-000, Brazil (BRA)	
Region:	Number of Irradiation Units:
Latin America	1
Phone:	Fax:
55/11/44171344	55/11/44171344
Email:	Website :
cbe@cbe-sa.com.br	http://www.cbe-sa.com.br
Head:	Date of Response:
Eliott Maurice Eskinazi, President and CEO	2002 / 1 / 25

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 733	NO
Postal Address:	
Rod. D. Pedro I, km 89,5, POB 149, Jarinu, Sao Paulo-SP, 13240-000, Brazil (BRA)	
Region:	Contact:
Latin America	Paulo Roberto Rela
Manager:	Contact Email:
Paulo Roberto Rela	p.rela@cbe-sa.com.br

Manufacturer:	Type of Irradiator:
CBE	Pallet conveyor
Commissioning year:	Personnel:
1999	30
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	5000
Initial installation:	Initial Activity: (kCi)
1999	400
Last Replenishment:	Current Activity: (kCi)
2001	1150
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	On pallets
Operating Mode :	
Continuous	

Operating licence:
1999, by Comissao Nacional de Energia Nuclear (CNEN)
Licence for:
Food, medical care products, medicinal herbs
Special Requirements:

Processing Products:

Product: A	Process: A	Dose Range: (kGy) 15-30	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 11137

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	PMMA
Calibration irradiation performed by: an accredited calibration laboratory	Calibration irradiation performed by: an accredited calibration laboratory
How often is the readout instrument calibrated? monthly	How often is the readout instrument calibrated? monthly
How often is dosimetry system calibrated? yearly	How often is dosimetry system calibrated? every batch
Traceable to: Other - IDAS	Traceable to: Other - IDAS

Heard about IDAS : YES
Participate in IDAS: YES
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: To replenish the facililty to the full capacity.
Decommissioning plans: information not available

BULGARIA

Bulgaria: SOPHARMA JSC: BULGAMMA

Organization:

Organization: SOPHARMA JSC	Type: PRIVATE
Postal Address: Iliensko Shosse 16,Sofia, 1220, Bulgaria (BUL)	
Region: Europe	Number of Irradiation Units: 1
Phone: 359/2/9361001	Fax: 359/2/9360286
Email: sopharma@ttm.bg	Website : http://www.
Head: Dr. Ognyan Donev, Executive Director	Date of Response: 2001 / 10 / 2

Irradiation Unit:

Unit: BULGAMMA	IAEA support: YES:
Postal Address: Iliensko Shosse 16, Sofia, 1220, Bulgaria (BUL)	
Region: Europe	Contact: Mrs. Nelly Boshnakova
Manager: Lyuben Zhivkov Piperov	Contact Email: lpiperov@yahoo.co.uk

Manufacturer: MDS Nordion Inc.	Type of Irradiator: Industrial Stationary
Commissioning year: 1990	Personnel: 14
Radionuclide: Cobalt-60	Design Capacity: (kCi) 1000
Initial installation: 1990	Initial Activity: (kCi) 100
Last Replenishment:	Current Activity: (kCi) 235
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence: 1990, by Bulg. Comm. on the Use of Atom. Energy for Peacefu
Licence for: experiments and industrial irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	100	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	10-	400	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	1-25	300	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	10-	1000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	0-120	100	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	25-	100	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	ECB
Calibration irradiation performed by:	Calibration irradiation performed by:
information not available	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	every batch
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	every batch
Traceable to:	Traceable to:
	National lab

Heard about IDAS :	NO
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

CANADA

Canada: MDS NORDION: CANADIAN IRRADIATION CENTER

Organization:

Organization: MDS Nordion	Type: PRIVATE
Postal Address: 535 Cartier Ouest,Laval, P.Q., H7V 3S8, Canada	
Region: North America	Number of Irradiation Units: 1
Phone: 1/450/6875165	Fax: 1/450/6875792
Email:	Website : http://www.mds.nordion.com
Head: John Morrissson, President	Date of Response: 2001 / 8 / 3

Irradiation Unit:

Unit: Canadian Irradiation Center	IAEA support: NO
Postal Address: 535 Cartier Ouest, Laval, P.Q., H7V 3S8, Canada	
Region: North America	Contact: Yves Doyle
Manager: Yves Doyle	Contact Email: ydoyle@mds.nordion.com

Manufacturer: MDS Nordion Inc.	Type of Irradiator: Carrier type
Commissioning year: 1988	Personnel: 9
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation: 1988	Initial Activity: (kCi) 400
Last Replenishment: 1996	Current Activity: (kCi) 1000
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence: 2000, by CNSC
Licence for: Service irradiation
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	5-25	4000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	4-10	1428.6 [conv.]	1000
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B	-	4000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002

Reference Dosimetry System:	**Routine** Dosimetry System:
Ceric Cerous	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
each time used	quarterly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
every batch	half year
Traceable to:	Traceable to:
NIST	Nordion

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Increase Cobalt
Decommissioning plans:	information not available

CHILE

Chile: CHILEAN NUCLEAR ENERGY COMMISSION: MULTIPURPOSE IRRADIATION PLANT

Organization:

Organization:	Type:
Chilean Nuclear Energy Commission	GOVERNMENT
Postal Address:	
Amunategui no. 95,Santiago, 6500687, Chile (CHI)	
Region:	Number of Irradiation Units:
Latin America	1
Phone:	Fax:
56/2/6990070	56/2/6991618
Email:	Website :
ctenreiro@cchen.cl	http://www.cchen.cl
Head:	Date of Response:
Claudio Tenreiro, Executive Director	2001 / 10 / 19

Irradiation Unit:

Unit:	IAEA support:
Multipurpose Irradiation Plant	NO
Postal Address:	
Ruta 68, Kilometro 27, Pudahuel, Santiago, 6500687, Chile (CHI)	
Region:	Contact:
Latin America	Juan Miguel Espinoza Berdichevsky
Manager:	Contact Email:
Juan Miguel Espinoza Berdichevsky	jespinoz@cchen.cl

Manufacturer:	Type of Irradiator:
Chile & Spain	multipurpose
Commissioning year:	Personnel:
1979	10
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1000
Initial installation:	Initial Activity: (kCi)
1978	100
Last Replenishment:	Current Activity: (kCi)
2001	250
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Hydraulic	On pallets
Operating Mode :	
Continuous	

Operating licence:
1986, by Chilean Nuclear Energy Commission
Licence for:
Food irradiation, sterilization of medical devices, pharmaceutical products.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	1050	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	4-10	1102.9 [conv.]	772
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

CHINA

China: INST. FOR APPL. OF ATOMIC ENERGY, CHIN. ACADEMY OF: CHINA AGRICULTURAL IRRADIATION CENTER

Organization:

Organization:	Type:
Inst. for Appl. of Atomic Energy, Chin. Academy of	GOVERNMENT
Postal Address:	
No. 2 Yuanmingyuan West Road,Haidian District, Beijing, 100094, China (CPR)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
86/10/62815972	86/10/62896314
Email:	Website :
iaaersmw@public.bta.net.cn	http://www.
Head:	Date of Response:
Zhang Baoming, Director-General	2001 / 9 / 14

Irradiation Unit:

Unit:	IAEA support:
China Agricultural Irradiation Center	NO
Postal Address:	
No. 2 Yuanmingyuan West Road, Haidian District, Beijing, 100094, China (CPR)	
Region:	Contact:
East Asia and the Pacific	Shi Peixin
Manager:	Contact Email:
Shi Peixin	iaaersmw@public.bta.net.cn

Manufacturer:	Type of Irradiator:
China	information not available
Commissioning year:	Personnel:
1995	0
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1000
Initial installation:	Initial Activity: (kCi)
1995	100
Last Replenishment:	Current Activity: (kCi)
1998	170
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Hydraulic	In carriers
Operating Mode :	
Continuous	

Operating licence:
1995, by Bureaus of Publ. Sec., Publ. Health and Envir. Pr
Licence for:
Food irradiation
Special Requirements:
No

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	6-8	4285.7 [conv.]	3000
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C	0.5-1	142.9 [conv.]	100
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	6-8	1200 [conv.]	600
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
Chemical dosimetry	Chemical dosimetry
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	information not available
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

China: GUANGZHOU R&D CENTRE FOR IRRADIATION TECHNOLOGY: GAMMA RADIATION PROCESSOR

Organization:

Organization:	Type:
Guangzhou R&D Centre for Irradiation Technology	GOVERNMENT
Postal Address:	
Jiangang Zhonglun Town, PanYu District,Guangzhou City, 511495, China (CPR)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
86/20/84772343	86/20/84715113
Email:	Website :
gzfz@china.com	http://www.irradiation-gz.51.net
Head:	Date of Response:
Ou Jinbiao,	2001 / 11 / 29

Irradiation Unit:

Unit:	IAEA support:
Gamma Radiation Processor	NO
Postal Address:	
Jiangang Zhonglun Town, PanYu District, Guangzhou City, 511495, China (CPR)	
Region:	Contact:
East Asia and the Pacific	Peny Zhigang
Manager:	Contact Email:
Ou Jinbiao	gzfz@china.com

Manufacturer:	Type of Irradiator:
Beijing Institute of Nuclear Engineering	information not available
Commissioning year:	Personnel:
	28
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	0
Initial installation:	Initial Activity: (kCi)
1993	200
Last Replenishment:	Current Activity: (kCi)
2001	480
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1997, by Ministry of Public Health
Licence for:
Food, malaria medicine, medical device, high molecular material.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-30		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES:

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	Dichromate
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	half year
Traceable to:	Traceable to:
Other - NDAS	Other - NDAS

Heard about IDAS : YES
Participate in IDAS: YES
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

China: TIANJIN INSTITUTE OF TECHNICAL PHYSICS: IAEA-NR 1853

Organization:

Organization:	Type:
TIANJIN INSTITUTE OF TECHNICAL PHYSICS	GOVERNMENT
Postal Address:	
11 Ke Yan Dong Road, Nan Kai District,Tianjin, 300192, China (CPR)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
86/22/87890740	86/22/87890510
Email:	Website :
TJJWS@BF2000.NET	http://www.tjjws.com
Head:	Date of Response:
Zhang Shao Xian, Senior Engineer	2001 / 9 / 4

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 1853	NO
Postal Address:	
11 Ke Yan Dong Road, Nan Kai District, Tianjin, 300192, China (CPR)	
Region:	Contact:
East Asia and the Pacific	He Qing
Manager:	Contact Email:
Xu Li Ping	heeqing@sina.com

Manufacturer:	Type of Irradiator:
Shanghai Institute of Nuclear Research	two plank
Commissioning year:	Personnel:
1987	20
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	
Initial installation:	Initial Activity: (kCi)
1987	100
Last Replenishment:	Current Activity: (kCi)
2001	300
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	On pallets
Operating Mode :	
Continuous	

Operating licence:
1995, by Tianjin Bureau of Quality & Technical Supervision
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	0-10	7000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES:

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	information not available
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	half year
Traceable to:	Traceable to:
NIST	National lab

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

China: YUNNAN RADIATION TECHNOLOGY INSTITUTE: IAEA-NR 1954

Organization:

Organization: Yunnan Radiation Technology Institute	Type: GOVERNMENT
Postal Address: No. 757, Chuanjin Road,Kunming, 650224, China (CPR)	
Region: East Asia and the Pacific	Number of Irradiation Units: 1
Phone: 86/871/5017916	Fax: 86/871/5017853
Email:	Website : http://www.
Head: Liu Zhibin, Chairman of Board	Date of Response: 2001 / 9 / 7

Irradiation Unit:

Unit: IAEA-NR 1954	IAEA support: NO
Postal Address: No. 757, Chuanjin Road, Kunming, 650224, China (CPR)	
Region: East Asia and the Pacific	Contact: Jin Hui
Manager: Liang Wenzhong	Contact Email:

Manufacturer: information not available	Type of Irradiator: information not available
Commissioning year: 1995	Personnel: 32
Radionuclide: Cobalt-60	Design Capacity: (kCi) 1850
Initial installation: 1995	Initial Activity: (kCi) 100
Last Replenishment: 2001	Current Activity: (kCi) 136
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Hydraulic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence: 1994, by Public Health Department of Yunnan Province
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	Fricke
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS : NO
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

China: YANBIAN COMMERCIAL SCIENCE & TECHNOLOGY INSTITUTE: IAEA-NR 2055

Organization:

Organization: Yanbian Commercial Science & Technology Institute	Type: GOVERNMENT
Postal Address: 50 Yanlonglu, Yanji, 133001, China (CPR)	
Region: East Asia and the Pacific	Number of Irradiation Units: 1
Phone: 86/433/2851040	Fax: 86/433/2851040
Email:	Website : http://www.
Head: Lisouwan, Director	Date of Response: 2001 / 9 / 10

Irradiation Unit:

Unit: IAEA-NR 2055	IAEA support: YES:
Postal Address: 50 Yanlonglu, Yanji, 133001, China (CPR)	
Region: East Asia and the Pacific	Contact: Jin Xiang Shu
Manager: Jinmeng Xue	Contact Email:

Manufacturer: MDS Nordion Inc.	Type of Irradiator: information not available
Commissioning year: 1995	Personnel: 8
Radionuclide: Cobalt-60	Design Capacity: (kCi) 500
Initial installation: 1995	Initial Activity: (kCi) 100
Last Replenishment:	Current Activity: (kCi) 0
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Hydraulic	Product Movement : In carriers
Operating Mode : Batch	

Operating licence: 1998, by Jilin Province Public Security Department
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	3-8	300	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES:

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	information not available
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

China: CHINA NATIONAL NUCLEAR CORP., DALIAN INSTITUTE: IAEA-NR 2156

Organization:

Organization:	Type:
China National Nuclear Corp., Dalian Institute	GOVERNMENT
Postal Address:	
455 Haiyan Street, Ganjingzi District,Dalian, 116031, China (CPR)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
86/411/6682739	86/411/6680234
Email:	Website :
ljh-dl@163.net	http://www.dl213.com.cn
Head:	Date of Response:
Lujianhua, Manager, Senior Engineer	2001 / 8 / 27

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 2156	NO
Postal Address:	
455 Haiyan Street, Ganjingzi District, Dalian, 116031, China (CPR)	
Region:	Contact:
East Asia and the Pacific	Liu pin, Ma Xiaomei
Manager:	Contact Email:
Liu pin, Ma Xiaomei	

Manufacturer:	Type of Irradiator:
Russia	information not available
Commissioning year:	Personnel:
1989	9
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	500
Initial installation:	Initial Activity: (kCi)
1989	133
Last Replenishment:	Current Activity: (kCi)
1999	100
Source Storage:	Source Rack :
Wet	Cylindrical
Source Hoisting :	Product Movement :
Electric	On pallets
Operating Mode :	
Batch	

Operating licence:
1989, by Department of Health of P.R. of China
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	information not available
Calibration irradiation performed by:	Calibration irradiation performed by:
industrial facility with transfer dosimeters	information not available
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	information not available
Traceable to:	Traceable to:
Other	

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

China: HUNAN INST. FOR APPL. OF ATOMIC ENERGY IN AGRICULTURE : IAEA-NR 2257

Organization:

Organization: Hunan Inst. for Appl. of Atomic Energy in Agriculture	Type: GOVERNMENT
Postal Address: Mapuling, Changsha, 410125, China (CPR)	
Region: East Asia and the Pacific	Number of Irradiation Units: 1
Phone: n/a	Fax: n/a
Email:	Website : http://www.
Head: ,	Date of Response: 2001 / 9 / 10

Irradiation Unit:

Unit: IAEA-NR 2257	IAEA support: NO
Postal Address: Mapuling, Changsha, 410125, China (CPR)	
Region: East Asia and the Pacific	Contact: DONG Gang-qiao
Manager: CHEN Xue-king	Contact Email:

Manufacturer: Shanghai Institute of Nuclear Research	Type of Irradiator: Industrial Stationary
Commissioning year: 1989	Personnel: 14
Radionuclide: Cobalt-60	Design Capacity: (kCi) 500
Initial installation: 1989	Initial Activity: (kCi) 110
Last Replenishment: 2000	Current Activity: (kCi) 110
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Electric	Product Movement : In carriers
Operating Mode : Batch	

Operating licence:
1989, by Hygenic Dpt. of Hunan Province, Public Secur. Dpt.
Licence for:
Food
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	4-10	1000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	2-6	800	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-150	200	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: HACCP

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	information not available
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	half year
Traceable to:	Traceable to:
Other - NDAS	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

China: HARBIN GUANGYA NEW TECH CO. LTD.: IAEA-NR 2358

Organization:

Organization:	Type:
Harbin Guangya New Tech Co. Ltd.	GOVERNMENT
Postal Address:	
Ha-Ping Road,Harbin, 150069, China (CPR)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	0
Phone:	Fax:
n/a	n/a
Email:	Website :
	http://www.
Head:	Date of Response:
,	2001 / 9 / 6

Irradiation Unit:

Unit:		IAEA support:
IAEA-NR 2358		NO
Postal Address:		
Ha-Ping Road, Harbin, 150069, China (CPR)		
Region:	Contact:	
East Asia and the Pacific	Deng Zhe	
Manager:	Contact Email:	
Lu Ruizeng		

Manufacturer:	Type of Irradiator:
China	information not available
Commissioning year:	Personnel:
1987	0
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	500
Initial installation:	Initial Activity: (kCi)
1988	100
Last Replenishment:	Current Activity: (kCi)
1997	200
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Batch	

Operating licence:
1994, by Heilongjiang Business Administration Bureau
Licence for:
Radiation Technology Processing Service, Developing Radiation Technology Deep Processing for Macromolecule Material Modification, low temperature bond and hygenical products, etc.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	100-180	2500	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: NDAS, Quality Assurance System

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	information not available
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	information not available
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

China: TANGSHAN TONGLI RADIATION PROCESSING CO. LTD.: IAEA-NR 2661

Organization:

Organization: Tangshan Tongli Radiation Processing Co. Ltd.	Type: GOVERNMENT
Postal Address: No. 144 Jianshe North Road,Tangshan, 063000, China (CPR)	
Region: East Asia and the Pacific	Number of Irradiation Units: 0
Phone: n/a	Fax: n/a
Email:	Website : http://www.
Head: ,	Date of Response: 2001 / 9 / 8

Irradiation Unit:

Unit: IAEA-NR 2661	IAEA support: YES:
Postal Address: No. 144 Jianshe North Road, Tangshan, 063000, China (CPR)	
Region: East Asia and the Pacific	Contact: Wang Ming Xia
Manager: Yao Hong Gang	Contact Email:

Manufacturer: MDS Nordion Inc.	Type of Irradiator: information not available
Commissioning year: 1996	Personnel: 13
Radionuclide: Cobalt-60	Design Capacity: (kCi) 1000
Initial installation: 1997	Initial Activity: (kCi) 200
Last Replenishment: 2001	Current Activity: (kCi) 500
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : On pallets
Operating Mode : Continuous	

Operating licence:
, by Tangshan's Industrial and Commercial Bureau
Licence for:

Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	2-	200	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	8-	200	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	10-	1800	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	6-	2000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	5-	1000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	110-160	600	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES:

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	information not available
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
quarterly	quarterly
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	We plan to increase the activity to 750 kCi.
Decommissioning plans:	information not available

China: ZHENGZHOU IRRADIATION CENTER: IAEA-NR 2762

Organization:

Organization:	Type:
Zhengzhou Irradiation Center	GOVERNMENT
Postal Address:	
No. 8, Jingguang South Road, Zhengzhou,Zhengzhou, 450052, China (CPR)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
86/371/8711246	86/371/8711246
Email:	Website :
	http://www.
Head:	Date of Response:
He Jianzhong, General Manager	2001 / 11 / 29

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 2762	NO
Postal Address:	
Avenue No. 2, Economic & Technological Dev. Zone, Zhengzhou, 450038, China (CPR)	
Region:	Contact:
East Asia and the Pacific	He Jianzhong
Manager:	Contact Email:
He Jianzhong	

Manufacturer:	Type of Irradiator:
China	information not available
Commissioning year:	Personnel:
1997	20
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	300
Initial installation:	Initial Activity: (kCi)
1997	100
Last Replenishment:	Current Activity: (kCi)
2000	240
Source Storage:	Source Rack :
Wet	Cylindrical
Source Hoisting :	Product Movement :
Electric	In totes
Operating Mode :	
Batch	

Operating licence:
1998, by Henan Health Department
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	8-15	300	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C	0.04-0.1	11428.6 [conv.]	8000
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	6-10	142.9 [conv.]	100
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	information not available
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
quarterly	each time used
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	quarterly
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

China: WUHAN FUTURE NEW TECHNOLOGY CO. LTD.: IAEA-NR 2964

Organization:

Organization:	Type:
Wuhan Future New Technology Co. Ltd.	GOVERNMENT
Postal Address:	
No. 307 Zhuodaoquan Road, Hongsan District,Wuhan, 430073, China (CPR)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
n/a	n/a
Email:	Website :
	http://www.future.home.sohu.com
Head:	Date of Response:
,	2001 / 9 / 5

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 2964	NO
Postal Address:	
No. 307 Zhuodaoquan Road, Hongsan District, Wuhan, 430073, China (CPR)	
Region:	Contact:
East Asia and the Pacific	Fengjintao
Manager:	Contact Email:
Fengjintao	

Manufacturer:	Type of Irradiator:
Shanghai Institute of Nuclear Research	information not available
Commissioning year:	Personnel:
1990	14
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	500
Initial installation:	Initial Activity: (kCi)
1990	200
Last Replenishment:	Current Activity: (kCi)
1999	250
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Batch	

Operating licence:
1998, by HuBei Province Bureau of Health/ Bureau of Safety
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	6-9	1000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	5-8	5300	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001 (2000)

Reference Dosimetry System:	**Routine** Dosimetry System:
Dichromate	Dichromate
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	half year
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

China: SHAN DONG IRRADIATION CENTER: IAEA-NR 3065

Organization:

Organization:	Type:
Shan Dong Irradiation Center	GOVERNMENT
Postal Address:	
198 Gong Ye Bei Road,Jinan, 250100, China (CPR)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
n/a	n/a
Email:	Website :
	http://www.
Head:	Date of Response:
,	2001 / 9 / 5

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 3065	NO
Postal Address:	
198 Gong Ye Bei Road, Jinan, 250100, China (CPR)	
Region:	Contact:
East Asia and the Pacific	Wangshanjing
Manager:	Contact Email:
Yuzihou	aesaas@saas.ac.cn

Manufacturer:	Type of Irradiator:
China	multipurpose
Commissioning year:	Personnel:
1986	10
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	300
Initial installation:	Initial Activity: (kCi)
1986	50
Last Replenishment:	Current Activity: (kCi)
1999	100
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1987, by Local government
Licence for:
Food irradiation and medical products sterilization
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	0-10	71.4 [conv.]	50
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	8-15	428.6 [conv.]	300
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C	6-10	285.7 [conv.]	200
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C	0.05-0.2	714.3 [conv.]	500
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	Fricke
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	monthly
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

China: SHANGHAI IRRADIATION CENTRE: IAEA-NR 3267

Organization:

Organization:	Type:
Shanghai Irradiation Centre	GOVERNMENT
Postal Address:	
1605 Cao Yang Road,Shanghai, 200333, China (CPR)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
86/21/62548693	86/21/62548693
Email:	Website :
klsheng@shcei.com.cn	http://www.shei.gov.cn
Head:	Date of Response:
Kanglong Sheng, Director	2001 / 9 / 5

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 3267	NO
Postal Address:	
1605 Cao Yang Road, Shanghai, 200333, China (CPR)	
Region:	Contact:
East Asia and the Pacific	Kanglong Sheng
Manager:	Contact Email:
Kanglong Sheng	klsheng@shcei.com.cn

Manufacturer:	Type of Irradiator:
Shanghai Institute of Nuclear Research	information not available
Commissioning year:	Personnel:
1986	15
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	500
Initial installation:	Initial Activity: (kCi)
1986	100
Last Replenishment:	Current Activity: (kCi)
1997	110
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1986, by Municipal Bureau of Hygiene, Shanghai
Licence for:
Gamma-ray processing
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	1000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	4-8	1000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	2-8	2000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	100-200	50	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 11137, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	Dichromate
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Remoulding the source rack and the carrier system.
Decommissioning plans:	information not available

China: YUNNAN NUCLEAR TECHNOLOGY APPLICATION CENTER: IAEA-NR 3570

Organization:

Organization:	Type:
Yunnan Nuclear Technology Application Center	Joint Venture
Postal Address:	
6 Kunling Road, Kunming Economy & Techn. Dev. Zone,Kunming, 650214, China (CPR)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
86/871/7265326	86/871/7265326
Email:	Website :
	http://www.
Head:	Date of Response:
Li Jinkun, Director	2001 / 9 / 10

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 3570	NO
Postal Address:	
6 Kunling Road, Kunming Economy & Techn. Dev. Zone, Kunming, 650214, China (CPR)	
Region:	Contact:
East Asia and the Pacific	Fang Chongxi
Manager:	Contact Email:
Li Jinkun	

Manufacturer:	Type of Irradiator:
China	Industrial Stationary
Commissioning year:	Personnel:
1996	10
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	500
Initial installation:	Initial Activity: (kCi)
1997	200
Last Replenishment:	Current Activity: (kCi)
2000	240
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1997, by Yunnan Provin. Quality & Techn. Supervision Bureau
Licence for:
1. The disinfestation of traditional Chinese medicine, Chinese herbal medicine, leather, wool, etc.
2. The sterilization of medical products and hygienic products, etc.
3. The irradiation preservation of fresh food, vegetable & fruit
4. The irradiation
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	2-3	6700	0
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES:

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	Dichromate
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	half year
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

China: SHENYANG TIANRONG RADIATION TECHN. APPL. CO. LTD.: IAEA-NR 3671

Organization:

Organization: Shenyang Tianrong Radiation Techn. Appl. Co. Ltd.	Type: PRIVATE
Postal Address: 9 Kunming hu Street, Economic & Techn. Dev. Zone,Shenyang, 110141, China (CPR)	
Region: East Asia and the Pacific	Number of Irradiation Units: 1
Phone: 86/24/25811016	Fax: 86/24/25814485
Email:	Website : http://www.tianrong-tape.com
Head: Yu Zhiqiang, General Manager	Date of Response: 2001 / 9 / 14

Irradiation Unit:

Unit: IAEA-NR 3671	IAEA support: NO
Postal Address: 9 Kunming hu Street, Economic & Techn. Dev. Zone, Shenyang, 110141, China (CPR)	
Region: East Asia and the Pacific	Contact: Xu Changhai
Manager: Yu Zhiqiang	Contact Email:

Manufacturer: REVISS Services (UK) Ltd.	Type of Irradiator: information not available
Commissioning year: 1990	Personnel: 9
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation: 1990	Initial Activity: (kCi) 50
Last Replenishment: 2000	Current Activity: (kCi) 90
Source Storage: Wet	Source Rack : Cylindrical
Source Hoisting : Electric	Product Movement : In carriers
Operating Mode : Batch	

Operating licence:
1990, by Shenyang Industry & Commerce Admin. Bureau
Licence for:

Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C	-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?

YES:

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	information not available
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
half year	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	information not available
Traceable to:	Traceable to:
	Other - NDAS

Heard about IDAS : NO
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: NO

Upgrading plans: information not available
Decommissioning plans: information not available

China: BEIJING YONGZHU MAYAK RAD. NEW TECHNIQUE CO. LTD.: IAEA-NR 3772

Organization:

Organization:	Type:
Beijing Yongzhu Mayak Rad. New Technique Co. Ltd.	Joint Venture
Postal Address:	
No. 6 (A) Dayangfang, Andingmen Wai,Beijing, 100012, China (CPR)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
86/10/64232185	86/10/64232185
Email:	Website :
yzmayak@public.east.cn.net	http://www.yzmayak.com.cn
Head:	Date of Response:
Zong Huiqi, General Manager	2001 / 8 / 23

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 3772	NO
Postal Address:	
No. 6 (A) Dayangfang, Andingmen Wai, Beijing, 100012, China (CPR)	
Region:	Contact:
East Asia and the Pacific	Lu Yimin
Manager:	Contact Email:
Zong Huiqi	yzmayak@public.east.cn.net

Manufacturer:	Type of Irradiator:
Sulzer	Sulzer Unicell C44
Commissioning year:	Personnel:
1989	27
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1000
Initial installation:	Initial Activity: (kCi)
1988	330
Last Replenishment:	Current Activity: (kCi)
2001	620
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Hydraulic	In carriers
Operating Mode :	
Continuous	

Operating licence:
1999, by Beijing Public Health Bureau
Licence for:
Radiation application of gamma-rays
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	200	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	8-10	16800	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
D	A	5-10	9000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
D	D	130-150	800	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9000 (2000), ISO 11137

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	Dichromate
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	half year
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

China: SHENZHEN JPY RAD-TECH. LTD.: IAEA-NR 942

Organization:

Organization:	Type:
Shenzhen JPY Rad-Tech. Ltd.	PRIVATE
Postal Address:	
No. 68, Dongsheng Road, Luohu District,Shenzhen City, 518019, China (CPR)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
86/755/5177239	86/755/5812214
Email:	Website :
Naijie_Lin@sic.com.cn	http://www.irradiation.com.cn
Head:	Date of Response:
Lin Naijie, General Manager	2002 / 1 / 28

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 942	NO
Postal Address:	
No. 68, Dongsheng Road, Luohu District, Shenzhen City, 518019, China (CPR)	
Region:	Contact:
East Asia and the Pacific	
Manager:	Contact Email:

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	JS 8900
Commissioning year:	Personnel:
1987	30
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	4000
Initial installation:	Initial Activity: (kCi)
1987	
Last Replenishment:	Current Activity: (kCi)
2001	1330
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Continuous	

Operating licence:
1998, by Guangdong Provincial Health Agency
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	20000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, ISO 11137, EN 46002, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
Dichromate	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	information not available
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	weekly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	every batch
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	NO
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

China: SICHUAN PROVINCE INST. OF NUCLEAR TECHNOLOGY APPL.: IRRADIATION CENTER OF SINTA

Organization:

Organization: Sichuan Province Inst. of Nuclear Technology Appl.	Type: GOVERNMENT
Postal Address: 124 Sha He Bao,Chengdu, 610066, China (CPR)	
Region: East Asia and the Pacific	Number of Irradiation Units: 1
Phone: 86/28/4792337	Fax: 86/28/4790380
Email: sinta@mail.sc.cninfo.net	Website : http://www.
Head: Zhou Dezhong, Director	Date of Response: 2001 / 11 / 29

Irradiation Unit:

Unit: Irradiation Center of SINTA	IAEA support: NO
Postal Address: 124 Sha He Bao, Chengdu, 610066, China (CPR)	
Region: East Asia and the Pacific	Contact: Deng Huachuan
Manager: Deng Huachuan	Contact Email: sinta@mail.sc.cninfo.net

Manufacturer: China	Type of Irradiator: information not available
Commissioning year: 1975	Personnel: 0
Radionuclide: Cobalt-60	Design Capacity: (kCi) 500
Initial installation: 1975	Initial Activity: (kCi) 500
Last Replenishment:	Current Activity: (kCi) 380
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Electric	Product Movement : In totes
Operating Mode : Batch	

Operating licence: 1985, by Health Dpt. of Sichuan Province
Licence for: Food irradiation, crosslinking
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	2-6	571.4 [conv.]	400
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	2-8	400 [conv.]	200
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	15-	200 [conv.]	200
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	information not available
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
monthly	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
monthly	monthly
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	We are building a new irradiation facility.
Decommissioning plans:	information not available

China: INST. OF ATOMIC ENERGY FOR APPL. IN AGRICULTURE: NANJING RADIATION CENTER

Organization:

Organization: Inst. of Atomic Energy for Appl. in Agriculture	Type: GOVERNMENT
Postal Address: 50 Zhongling St, Xiaolingwei,Nanjing, 210014, China (CPR)	
Region: East Asia and the Pacific	Number of Irradiation Units: 1
Phone: 86/25/4390452	Fax: 86/25/4390430
Email: jsnkyzls@public1.ptt.js.cn	Website : http://www.jaas.ac.cn
Head: Shenjianxin, Director	Date of Response: 2001 / 9 / 6

Irradiation Unit:

Unit: Nanjing Radiation Center	IAEA support: YES:
Postal Address: 50 Zhongling St, Xiaolingwei, Nanjing, 210014, China (CPR)	
Region: East Asia and the Pacific	Contact: Yanjianmin
Manager: Yanjianmin	Contact Email: yjm4390452@yahoo.com.cn

Manufacturer: UK	Type of Irradiator: information not available
Commissioning year: 1987	Personnel: 20
Radionuclide: Cobalt-60	Design Capacity: (kCi) 500
Initial installation: 1987	Initial Activity: (kCi) 100
Last Replenishment: 2000	Current Activity: (kCi) 250
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Electric	Product Movement : On pallets
Operating Mode : Batch	

Operating licence: 1997, by Jiangsu Health Office
Licence for: Co-60 irradiation
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-40	500	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	4-10	2500	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002

Reference Dosimetry System:	**Routine** Dosimetry System:
Chemical dosimetry	Chemical dosimetry
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

China: CHINA GOLD ECONOMIC DEVELOPMENT CORP. (SHENZHEN): SHENZHEN IRRADIATION CENTER LTD.

Organization:

Organization: China Gold Economic Development Corp. (Shenzhen)	Type: GOVERNMENT
Postal Address: 68 Dongsheng Road,Shenzhen, 518019, China (CPR)	
Region: East Asia and the Pacific	Number of Irradiation Units: 1
Phone: 86/755/5177228	Fax: 86/755/5812214
Email:	Website : http://www.
Head: Zhou Yusheng, President	Date of Response: 2001 / 9 / 6

Irradiation Unit:

Unit: Shenzhen Irradiation Center Ltd.	IAEA support: NO
Postal Address: 68 Dongsheng Road, Shenzhen, 518019, China (CPR)	
Region: East Asia and the Pacific	Contact: Guo Shiyuan
Manager: Lin Naijie	Contact Email: szfzz@public.szptt.net.cn

Manufacturer: MDS Nordion Inc.	Type of Irradiator: JS 8900
Commissioning year: 1987	Personnel: 30
Radionuclide: Cobalt-60	Design Capacity: (kCi) 0
Initial installation: 1986	Initial Activity: (kCi) 300
Last Replenishment: 2001	Current Activity: (kCi) 1400
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence: 1998, by Guangdong Health Department
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-30		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
Dichromate	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	information not available
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	every batch
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	NO
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

China: SHANGHAI NUCLEAR TECHNIQUE DEVELOPMENT CORP.: XINYI BRANCH

Organization:

Organization: Shanghai Nuclear Technique Development Corp.	Type: GOVERNMENT
Postal Address: 2019 Baojia Road,Shanghai, 201800, China (CPR)	
Region: East Asia and the Pacific	Number of Irradiation Units: 1
Phone: 86/21/59552115	Fax: 86/21/59552129
Email: xinyijd@online.sh.cn	Website : http://www.xinyi.sinr.ac.cn
Head: Zhu Zhiyuan, General Manager	Date of Response: 2001 / 9 / 10

Irradiation Unit:

Unit: Xinyi Branch	IAEA support: NO
Postal Address: 2019 Baojia Road, Shanghai, 201800, China (CPR)	
Region: East Asia and the Pacific	Contact: Cai Ximing
Manager: Qiu Shilong	Contact Email: xmcai@citiz.net

Manufacturer: Shanghai Institute of Nuclear Research	Type of Irradiator: information not available
Commissioning year:	Personnel: 6
Radionuclide: Cobalt-60	Design Capacity: (kCi) 500
Initial installation: 1989	Initial Activity: (kCi) 108
Last Replenishment: 2000	Current Activity: (kCi) 160
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Electric	Product Movement : In totes
Operating Mode : Batch	

Operating licence:
1989, by Municipal Bureau of Hygiene, Shanghai
Licence for:
Gamma-ray processing
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
D	E	2-100	5	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-70	250	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	80-250	22	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	Dichromate
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

CROATIA

Croatia: RUDER BOSKOVIC INSTITUTE: IAEA-NR 3873

Organization:

Organization: Ruder Boskovic Institute	Type: GOVERNMENT
Postal Address: Bijenicka cesta 54,Zagreb, 10000, Croatia (CRO)	
Region: Europe	Number of Irradiation Units: 1
Phone: 385/1/4561111	Fax: 385/1/4680098
Email: boranic@rudjer.irb.hr	Website : http://www.irb.hr
Head: Dr. Milivoj Boranic, Director	Date of Response: 2001 / 10 / 4

Irradiation Unit:

Unit: IAEA-NR 3873	IAEA support: YES: TC project no. CRO/8/003
Postal Address: Bijenicka cesta 54, Zagreb, 10000, Croatia (CRO)	
Region: Europe	Contact: Dr. Dusan Razem
Manager: Dr. Dusan Razem	Contact Email: razem@rudjer.irb.hr

Manufacturer: Ruder Boskovic Institute	Type of Irradiator: Panoramic
Commissioning year: 1983	Personnel: 2
Radionuclide: Cobalt-60	Design Capacity: (kCi) 150
Initial installation: 1983	Initial Activity: (kCi) 50
Last Replenishment: 2000	Current Activity: (kCi) 100
Source Storage: Dry	Source Rack : Cylindrical
Source Hoisting : Electric	Product Movement : In carriers
Operating Mode : Batch	

Operating licence: 2000, by Ministry of Health
Licence for: Scientific research, sterilization, sanitarization
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	140	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	2-10	42.9 [conv.]	30
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	5-15	10 [conv.]	5
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	25-	100	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	25-	150	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 11137

Reference Dosimetry System:	**Routine** Dosimetry System:
ECB	ECB
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
every 5 years	every 5 years
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
every 5 years	every 5 years
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

EGYPT

Egypt: NATIONAL CENTER FOR RAD. RESEARCH & TECHNOLOGY: MEGA GAMMA-1

Organization:

Organization:	Type:
National Center for Rad. Research & Technology	GOVERNMENT
Postal Address:	
3, Ahmad El-Zomor Street, 8th Sector,Nasr City, Cairo, POB 29, Egypt (EGY)	
Region:	Number of Irradiation Units:
Africa	1
Phone:	Fax:
20/2/2747691	20/2/2749298
Email:	Website :
rmyousri@hotmail.com	http://www.
Head:	Date of Response:
Prof. R.M. Yousri, Chairman, NCRRT	2003 / 3 / 15

Irradiation Unit:

Unit:	IAEA support:
Mega Gamma-1	NO
Postal Address:	
3, Ahmad El-Zomor Street, 8th Sector, Nasr City, Cairo, POB 29, Egypt (EGY)	
Region:	Contact:
Africa	Prof.Dr. Raafat M. Yousri
Manager:	Contact Email:
Eng. Said Hassan Ali	rmyousri@hotmail.com

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	JS 9600
Commissioning year:	Personnel:
1978	30
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	
Initial installation:	Initial Activity: (kCi)
1978	300
Last Replenishment:	Current Activity: (kCi)
1998	300
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
1978, by Atomic Energy Authority of Egypt
Licence for:
medical and pharmaceutical products as well as food, spices and medicinal herbs.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	1341	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	8-	972	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	8-	219	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	25-	739	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
every batch	every batch
Traceable to:	Traceable to:
NIST	Nordion

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Nearly every 3 years.
Decommissioning plans:	information not available

GERMANY

Germany: BGS BETA-GAMMA-SERVICE GMBH & COKG: IAEA-NR 4478

Organization:

Organization: BGS Beta-Gamma-Service GmbH & CoKG	Type: PRIVATE
Postal Address: Fritz-Kotz-Str. 16,Wiehl, D-51674, Germany	
Region: Europe	Number of Irradiation Units: 1
Phone: 49/2261/78990	Fax: 49/2261/789945
Email: zyball@bgs.de	Website : http://www.bgs.de
Head: Dr. Alfred Zyball,	Date of Response: 2002 / 1 / 23

Irradiation Unit:

Unit: IAEA-NR 4478	IAEA support: NO
Postal Address: Fritz-Kotz-Str. 16, Wiehl, D-51674, Germany	
Region: Europe	Contact: Mr. J. Gehring
Manager: Mr. V. Weinsheimer	Contact Email: gehring@bgs.de

Manufacturer: MDS Nordion Inc.	Type of Irradiator: IR 197 (pallet)
Commissioning year: 1997	Personnel: 10
Radionuclide: Cobalt-60	Design Capacity: (kCi) 5000
Initial installation: 1996	Initial Activity: (kCi) 2000
Last Replenishment: 2001	Current Activity: (kCi) 2500
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : On pallets
Operating Mode : Continuous	

Operating licence: 1999, by Bezirksregierung Koeln
Licence for: medical devices, pharmaceutical products, packaging, food, cross-linking
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	10-50		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	Blue Nylon
Calibration irradiation performed by:	Calibration irradiation performed by:
industrial facility with transfer dosimeters	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
half year	half year
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	half year
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

Germany: WILLY RUESCH GMBH: IAEA-NR 4579

Organization:

Organization:	Type:
Willy Ruesch GmbH	PRIVATE
Postal Address:	
Willy-Ruesch-Str. 4,71394 Kernen, D-71394, Germany	
Region:	Number of Irradiation Units:
Europe	1
Phone:	Fax:
49/7151/406191	49/7151/406140
Email:	Website :
mario.bernkopf@ruesch.de	http://www.
Head:	Date of Response:
Frank Sodha, General Manager	2001 / 8 / 3

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 4579	NO
Postal Address:	
Willy-Ruesch-Str. 4, 71394 Kernen, D-71394, Germany	
Region:	Contact:
Europe	Dr. M. Bernkopf
Manager:	Contact Email:
Dr. M Bernkopf	mario.bernkopf@ruesch.de

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	JS 8500
Commissioning year:	Personnel:
1969	14
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	0
Initial installation:	Initial Activity: (kCi)
1968	0
Last Replenishment:	Current Activity: (kCi)
2000	1300
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Continuous	

Operating licence:
1992, by GAA Goeppingen
Licence for:
medical devices, pharmaceuticals, etc.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Ceric Cerous	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
industrial facility with transfer dosimeters	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
monthly	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NPL

Heard about IDAS : NO
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

Germany: GAMMASTER DEUTSCHLAND GMBH: IAEA-NR 4680

Organization:

Organization:	Type:
Gammaster Deutschland GmbH	PRIVATE
Postal Address:	
Kesselbodenstr. 7,Allershausen, D-85391, Germany	
Region:	Number of Irradiation Units:
Europe	1
Phone:	Fax:
49/8166/68800	49/8166/688050
Email:	Website :
info@gammaster.de	http://www.gammaster.com
Head:	Date of Response:
Mr. Reiner Eidenberger, Managing Director	2001 / 7 / 27

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 4680	NO
Postal Address:	
Kesselbodenstr. 7, Allershausen, D-85391, Germany	
Region:	Contact:
Europe	Mr. Reiner Eidenberger
Manager:	Contact Email:
Mr. Reiner Eidenberger	info@gammaster.de

Manufacturer:	Type of Irradiator:
Atomic Energy of Canada Ltd (AECL)	JS 9000
Commissioning year:	Personnel:
1983	15
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	3000
Initial installation:	Initial Activity: (kCi)
1983	0
Last Replenishment:	Current Activity: (kCi)
2001	0
Source Storage:	Source Rack :
Wet	Cylindrical
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Continuous	

Operating licence:
1983, by Bayerisches Landesamt fuer Umweltschutz
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-50		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002, EN 552, ISO 14001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	quarterly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	yearly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: NO

Upgrading plans: information not available
Decommissioning plans: information not available

GHANA

Ghana: GHANA ATOMIC ENERGY COMMISSION: RADIATION TECHNOLOGY CENTRE

Organization:

Organization:	Type:
Ghana Atomic Energy Commission	GOVERNMENT
Postal Address:	
Atomic Energy - Kwabenya,Accra, POB LG80, Legon, Ghana (GHA)	
Region:	Number of Irradiation Units:
Africa	1
Phone:	Fax:
233/21/402796	233/21/401272
Email:	Website :
nnri@idngh.com	http://www.
Head:	Date of Response:
Prof. J.H. Amuasi, Director General	2002 / 2 / 19

Irradiation Unit:

Unit:	IAEA support:
Radiation Technology Centre	YES: GHA/8/004
Postal Address:	
Atomic Energy - Kwabenya, Accra, POB LG80, Legon, Ghana (GHA)	
Region:	Contact:
Africa	G. Emi-Reynolds
Manager:	Contact Email:
G. Emi-Reynolds	gemi-reynolds@idngh.com

Manufacturer:	Type of Irradiator:
Institute of Isotopes, Hungary	SLL-02
Commissioning year:	Personnel:
1993	9
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	500
Initial installation:	Initial Activity: (kCi)
1994	50
Last Replenishment:	Current Activity: (kCi)
	15
Source Storage:	Source Rack :
Wet	Cylindrical
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Batch	

Operating licence:
2001, by Radiation Protection Institute
Licence for:
irradiation of materials other than explosives or highly inflammable products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	46	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	-10	14.3 [conv.]	10
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	Fricke
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
Other	Other

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Discussions for private sector involvement are under way.
Decommissioning plans:	information not available

GREECE

Greece: ELVIONY S.A.: MANDRA

Organization:

Organization: ELVIONY S.A.	Type: GOVERNMENT
Postal Address: POB 27,Mandra Attikis, 19600, Greece (GRE)	
Region: Europe	Number of Irradiation Units: 1
Phone: 30/1/5555110	Fax: 30/1/5555426
Email:	Website : http://www.
Head: Gerontoukos Evagelos,	Date of Response: 2002 / 1 / 22

Irradiation Unit:

Unit: Mandra	IAEA support: NO
Postal Address: POB 27, Mandra Attikis, 19600, Greece (GRE)	
Region: Europe	Contact: Nick Panagiotakis
Manager: Xenikos Stavros	Contact Email: npanag@acci.gr

Manufacturer: Atomic Energy of Canada Ltd (AECL)	Type of Irradiator: JS 8500, IR 109
Commissioning year: 1980	Personnel: 6
Radionuclide: Cobalt-60	Design Capacity: (kCi) 0
Initial installation: 1980	Initial Activity: (kCi) 113
Last Replenishment: 2002	Current Activity: (kCi) 297
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Batch	

Operating licence: 1999, by G.A.E.C.
Licence for: sterilization
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	3000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	25-	1000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Dichromate	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	information not available
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

HUNGARY

Hungary: AGROSTER IRRADIATION CO. LTD.: IAEA-NR 4983

Organization:

Organization: Agroster Irradiation Co. Ltd.	Type: GOVERNMENT
Postal Address: Jaszberenyi Ut. 5,Budapest, 1106, Hungary (HUN)	
Region: Europe	Number of Irradiation Units: 1
Phone: 36/1/2622621	Fax: 36/1/2621922
Email:	Website : http://www.
Head: Mr. Mihaly Styevko, Director General	Date of Response: 2001 / 8 / 24

Irradiation Unit:

Unit: IAEA-NR 4983	IAEA support: NO
Postal Address: Jaszberenyi Ut. 5, Budapest, 1106, Hungary (HUN)	
Region: Europe	Contact: Mr. Mihaly Styevko
Manager: Mr. Istvan Koevago	Contact Email: sty@axelero.hu

Manufacturer: Institute of Isotopes, Hungary	Type of Irradiator: information not available
Commissioning year: 1982	Personnel: 5
Radionuclide: Cobalt-60	Design Capacity: (kCi) 540
Initial installation: 1982	Initial Activity: (kCi) 43
Last Replenishment: 2001	Current Activity: (kCi) 204
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Electric	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence:
1998, by Budap. Inst. of Nat. Publ. Health & Med. Officer S
Licence for:
agriculture, food, industrial products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	10-25	313.3 [conv.]	94
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	5-8	71.4 [conv.]	50
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	2-6	167.1 [conv.]	117
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	4-8	447.1 [conv.]	313
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	5-20	186 [conv.]	93
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	ECB
Calibration irradiation performed by:	Calibration irradiation performed by:
information not available	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
each time used	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	yearly
Traceable to:	Traceable to:
	Other - IDAS

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

Hungary: DISPOMEDICOR RT.: IAEA-NR 5185

Organization:

Organization:	Type:
DISPOMEDICOR RT.	PRIVATE
Postal Address:	
Fueredi 98,Debrecen, H-4001, Hungary (HUN)	
Region:	Number of Irradiation Units:
Europe	1
Phone:	Fax:
36/52/522961	36/52/522980
Email:	Website :
herbak@dispomedicor.hu	http://www.
Head:	Date of Response:
Dr. Janos HERBAK, Director	2002 / 3 / 6

Irradiation Unit:

Unit:		IAEA support:
IAEA-NR 5185		NO
Postal Address:		
Fueredi 98, Debrecen, H-4001, Hungary (HUN)		
Region:	Contact:	
Europe		
Manager:	Contact Email:	
Kiss Arpad		

Manufacturer:	Type of Irradiator:
Atomic Energy of Canada Ltd (AECL)	JS 6900
Commissioning year:	Personnel:
1976	15
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1000
Initial installation:	Initial Activity: (kCi)
Last Replenishment:	Current Activity: (kCi)
2001	322
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Continuous	

Operating licence:
1976, by
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	20-	5000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
D	A	20-	4600	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES:

Reference Dosimetry System:	**Routine** Dosimetry System:
ECB	ECB
Calibration irradiation performed by:	Calibration irradiation performed by:
industrial facility with transfer dosimeters	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
RISO	RISO

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

Hungary: INSTITUTE OF ISOTOPES CO. LTD.: SLL-01 GAMMA IRRADIATOR

Organization:

Organization:	Type:
Institute of Isotopes Co. Ltd.	PRIVATE
Postal Address:	
Konkoly Thege Miklos 29-33,Budapest, H-1121, Hungary (HUN)	
Region:	Number of Irradiation Units:
Europe	1
Phone:	Fax:
36/1/0	36/1/3922575
Email:	Website :
zsinka@izotop.kfkipark.hu	http://www.izotop.hu
Head:	Date of Response:
Dr. Laszlo Zsinka, Managing Director	2001 / 10 / 8

Irradiation Unit:

Unit:	IAEA support:
SLL-01 Gamma Irradiator	NO
Postal Address:	
Konkoly Thege Miklos 29-33, Budapest, H-1121, Hungary (HUN)	
Region:	Contact:
Europe	Janos Balla
Manager:	Contact Email:
Laszlo Falvi	sute@izotop.kfkipark.hu

Manufacturer:	Type of Irradiator:
Karpov Institute Moscow	Pilot scale
Commissioning year:	Personnel:
1968	2
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	120
Initial installation:	Initial Activity: (kCi)
1968	81
Last Replenishment:	Current Activity: (kCi)
1999	60
Source Storage:	Source Rack :
Wet	Cylindrical
Source Hoisting :	Product Movement :
Electric	Manual
Operating Mode :	
Batch	

Operating licence:
1968, by Metrop.Inst. of Hung.Nat.Inst. of Gen.Health&Med.
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	20-	80	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
D	A	20-	80	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	20-	200	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
ECB	ECB
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	weekly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
every 3 years	quarterly
Traceable to:	Traceable to:
RISO	RISO

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Upgraded in 1987.
Decommissioning plans:	information not available

INDIA

India: BOARD OF RADIATION AND ISOTOPE TECHNOLOGY: ISOMED

Organization:

Organization: Board of Radiation and Isotope Technology	Type: GOVERNMENT
Postal Address: Project House, V.N.P. Marg,Mumbai, 400 094, India	
Region: East Asia and the Pacific	Number of Irradiation Units: 2
Phone: 91/22/5565535	Fax: 91/22/5562161
Email: nram@britanu.com	Website : http://www.
Head: Dr. N. Ramamoorthy, Chief Executive	Date of Response: 2001 / 8 / 8

Irradiation Unit:

Unit: Isomed	IAEA support: YES: IAEA project of 1972
Postal Address: Barc South Site, Mumbai, 400 085, India	
Region: East Asia and the Pacific	Contact: P. Madhusoodanan
Manager: P. Madhusoodanan, General Manager	Contact Email: pmadhu@magnum.barc.ernet.in

Manufacturer: H.S. Marsh, U.K.	Type of Irradiator: Dry storage
Commissioning year: 1974	Personnel: 28
Radionuclide: Cobalt-60	Design Capacity: (kCi) 1000
Initial installation: 1973	Initial Activity: (kCi) 100
Last Replenishment: 1998	Current Activity: (kCi) 750
Source Storage: Dry	Source Rack : Rectangular
Source Hoisting : Hydraulic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence: 1974, by Atomic Energy Regulatory Board, India & FDA, India
Licence for: sterilization of healthcare products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-31	15000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	Ceric Cerous
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
every batch	every batch
Traceable to:	Traceable to:
	Other - IDAS

Heard about IDAS : YES
Participate in IDAS: YES
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: Already planned.
Decommissioning plans: Information not available so far.

India: BOARD OF RADIATION AND ISOTOPE TECHNOLOGY: SPICE IRRADIATION PLANT

Organization:

Organization:	Type:
Board of Radiation and Isotope Technology	GOVERNMENT
Postal Address:	
Project House, V.N.P. Marg,Mumbai, 400 094, India	
Region:	Number of Irradiation Units:
East Asia and the Pacific	2
Phone:	Fax:
91/22/5565535	91/22/5562161
Email:	Website :
nram@britanu.com	http://www.
Head:	Date of Response:
Dr. N. Ramamoorthy, Chief Executive	2001 / 8 / 8

Irradiation Unit:

Unit:	IAEA support:
Spice Irradiation Plant	NO
Postal Address:	
Sector 20, Vashi Complex, Navi Mumbai, 400 705, India	
Region:	Contact:
East Asia and the Pacific	Dr. G. Sharma, Dy. General Manager
Manager:	Contact Email:
P. Madhusoodanan, General Manager	pmadhu@magnum.barc.ernet.in

Manufacturer:	Type of Irradiator:
Board of Radiation & Isotope Technology, India	Wet storage irradiator
Commissioning year:	Personnel:
2000	20
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1000
Initial installation:	Initial Activity: (kCi)
2000	100
Last Replenishment:	Current Activity: (kCi)
2002	185
Source Storage:	Source Rack :
Wet	Cylindrical
Source Hoisting :	Product Movement :
Hydraulic	In totes
Operating Mode :	
Continuous	

Operating licence:
2000, by Atomic Energy Regulatory Board, India
Licence for:
spices
Special Requirements:
Shall not contravene PFA rules.

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	6-14		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	Ceric Cerous
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
every batch	every batch
Traceable to:	Traceable to:
Other - DAE LABMS	Other - IDAS

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

India: SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH: SHRIRAM APPLIED RADIATION CENTRE (SARC)

Organization:

Organization: Shriram Institute for Industrial Research	Type: PRIVATE
Postal Address: 19, University Road,Delhi, 110 007, India	
Region: East Asia and the Pacific	Number of Irradiation Units: 1
Phone: 91/11/7667267	Fax: 91/11/7667676
Email: rkhandal@shriraminstitute.org	Website : http://www.shriram_institute.org
Head: Dr. R.K. Khandal, Director	Date of Response: 2001 / 8 / 22

Irradiation Unit:

Unit: Shriram Applied Radiation Centre (SARC)	IAEA support: NO
Postal Address: 19, University Road, Delhi, 110 007, India	
Region: East Asia and the Pacific	Contact: Dr. V.K. Verma; Mr. H.R. Khurana (RSO)
Manager: Dr. R.K. Khandal	Contact Email: sridlhi@vsnl.com

Manufacturer: Isotech Irradiators, Mumbai, India	Type of Irradiator: pool type
Commissioning year: 1986	Personnel: 20
Radionuclide: Cobalt-60	Design Capacity: (kCi) 500
Initial installation: 1986	Initial Activity: (kCi) 25
Last Replenishment: 1998	Current Activity: (kCi) 300
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Hydraulic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence:
1986, by Atomic Energy Regulatory Board (AERB), BARC, DAE
Licence for:
research, sterilization of medical/pharmaceutical products, spice
Special Requirements:
AERB/DAE clearance (every 3 years); DCA (Drug Controller Authority); Annual Inspection

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
A	A	25-	4097	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
B	C	10-	341	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
B	E	0.1-1	57	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
C	A	15-25	285	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
C	B	15-	854	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
E	E	5-100	57	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)

Quality Assurance Programm in use?

YES: ISO 9001, ISO 11137, CEN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
Ceric Cerous	Ceric Cerous
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
every batch	every batch
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Only replenishment up to 500 kCi, every 2-3 years.
Decommissioning plans:	information not available

INDONESIA

Indonesia: PT. PERKASA STERILINDO - INDOGAMMA: INDOGAMMA

Organization:

Organization:	Type:
Pt. Perkasa Sterilindo - Indogamma	PRIVATE
Postal Address:	
Desa Ganda Mekar, Kec. Cibitung,Bekasi, 17520, Indonesia (INS)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
62/21/88321324	62/21/88321246
Email:	Website :
arwan@rbi.co.id	http://www.indogamma.com
Head:	Date of Response:
Arwan Ahimsa, President Director	2001 / 9 / 5

Irradiation Unit:

Unit:	IAEA support:
Indogamma	NO
Postal Address:	
Desa Ganda Mekar, Kec. Cibitung, Bekasi, 17520, Indonesia (INS)	
Region:	Contact:
East Asia and the Pacific	Dirsani Gustam
Manager:	Contact Email:
Dirsani Gustam	indogamma@rad.net.id

Manufacturer:	Type of Irradiator:
Sterigenics, General Atomics	pool type
Commissioning year:	Personnel:
1992	45
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	6000
Initial installation:	Initial Activity: (kCi)
1991	400
Last Replenishment:	Current Activity: (kCi)
1999	225
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1998, by Nuclear Energy Control Board
Licence for:
contract sterilization
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	2500	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	1-7	17500	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	15-25	3000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	10-15	1500	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B	15-25	1600	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	half year
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	every batch
Traceable to:	Traceable to:
Other - IDAS	

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

IRAN, ISLAMIC REPUBLIC OF

Iran, I.R. of: GAMMA IRRADIATION CENTER: IR-136 IRRADIATIOR SYSTEM

Organization:

Organization: Gamma Irradiation Center	Type: GOVERNMENT
Postal Address: POB,Tehran, 11365-8486, Iran, Islamic Republic of (IRA)	
Region: West Asia	Number of Irradiation Units: 1
Phone: 98/21/8004065	Fax: 98/21/8009054
Email: msohrabpour@seai.neda.net.ir	Website : http://www.geocities.com/GIC-IR
Head: Dr. M. Sohrabpour, Director	Date of Response: 2001 / 8 / 20

Irradiation Unit:

Unit: IR-136 Irradiatior System	IAEA support: YES: only at the construction and commissioning stage
Postal Address: POB 11365-8486, Tehran, 11365-8486, Iran, Islamic Republic of (IRA)	
Region: West Asia	Contact:
Manager: Mr. A. Mohammadabadi	Contact Email:

Manufacturer: MDS Nordion Inc.	Type of Irradiator: IR 136
Commissioning year: 1985	Personnel: 16
Radionuclide: Cobalt-60	Design Capacity: (kCi) 1000
Initial installation:	Initial Activity: (kCi) 100
Last Replenishment:	Current Activity: (kCi) 100
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence: 1985, by Radiation Protection Dpt.
Licence for: radiation processing
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO in progress

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NPL	Other - own dosimetry lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	The cobalt source for the IR-136 system to be replenished.
Decommissioning plans:	information not available

IRELAND

Ireland: GAMMASTER IRELAND LTD.: IAEA-NR 5691

Organization:

Organization: Gammaster Ireland Ltd.	Type: PRIVATE
Postal Address: Lodge Road,Westport, Co. Mayo, XX, Ireland	
Region: Europe	Number of Irradiation Units: 1
Phone: 353/98/50920	Fax: 353/98/26903
Email: info@gammaster.ie	Website : http://www.gammaster.com
Head: James O'Doherty, Managing Director	Date of Response: 2001 / 7 / 26

Irradiation Unit:

Unit: IAEA-NR 5691	IAEA support: NO
Postal Address: Lodge Road, Westport, Co. Mayo, 1, Ireland	
Region: Europe	Contact: Lorraine Moran
Manager: Lorraine Moran	Contact Email: lorraine@gammaster.ie

Manufacturer: MDS Nordion Inc.	Type of Irradiator: multipurpose
Commissioning year: 1991	Personnel: 10
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation: 1991	Initial Activity: (kCi) 750
Last Replenishment: 2000	Current Activity: (kCi)
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : On pallets
Operating Mode : Continuous	

Operating licence: 1991, by Radiological Institute of Ireland
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-50		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002, EN 552, FDA QSR

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
information not available	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	half year
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	yearly
Traceable to:	Traceable to:
	NPL

Heard about IDAS :	NO
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

ISRAEL

Israel: SOR-VAN RADIATION LTD.: IAEA-NR 5792

Organization:

Organization: SOR-VAN RADIATION LTD.	Type: PRIVATE
Postal Address: Kiryat Sorq, POB 214,Yavne, 81800, Israel (ISR)	
Region: West Asia	Number of Irradiation Units: 1
Phone: 972/8/9437519	Fax: 972/8/9421597
Email: sorvan@netvision.net.il	Website : http://www.
Head: Shuki Weinstein, General Manager	Date of Response: 2001 / 7 / 30

Irradiation Unit:

Unit: IAEA-NR 5792	IAEA support: NO
Postal Address: Kiryat Sorq, POB 214, Yavne, 81800, Israel (ISR)	
Region: West Asia	Contact: Shuki Weinstein
Manager:	Contact Email: Sorvan@netvision.net.il

Manufacturer: MDS Nordion Inc.	Type of Irradiator: JS 6500
Commissioning year: 1971	Personnel: 15
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation: 1971	Initial Activity: (kCi)
Last Replenishment: 2001	Current Activity: (kCi) 550
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence: , by Ministry of Environment Affairs
Licence for: sterilization, food, crosslinking
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)

Quality Assurance Programm in use?

YES: ISO, EN

Reference Dosimetry System:	**Routine** Dosimetry System:
PMMA	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	information not available
Traceable to:	Traceable to:
Nordion	Nordion

Heard about IDAS : NO
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

ITALY

Italy: GAMMARAD ITALIA SPA: GAMMA 1

Organization:

Organization:	Type:
GAMMARAD ITALIA SPA	PRIVATE
Postal Address:	
Marzabotto 4,Ca' dei Fabbri - 80, 40050, Italy	
Region:	Number of Irradiation Units:
Europe	2
Phone:	Fax:
39/51/6605998	39/51/6605574
Email:	Website :
info@gammarad.it	http://www.gammarad.it
Head:	Date of Response:
Luigia Irti, President	2001 / 12 / 4

Irradiation Unit:

Unit:	IAEA support:
GAMMA 1	NO
Postal Address:	
Marzabotto 4, Ca' dei Fabbri - 80, 40050, Italy	
Region:	Contact:
Europe	Marisa Lo Verde
Manager:	Contact Email:
Luigia Irti	m.loverde@gammarad.it

Manufacturer:	Type of Irradiator:
H.S. Marsh, U.K.	tote box
Commissioning year:	Personnel:
1970	1
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1000
Initial installation:	Initial Activity: (kCi)
1972	150
Last Replenishment:	Current Activity: (kCi)
1995	120
Source Storage:	Source Rack :
Dry	Rectangular
Source Hoisting :	Product Movement :
Hydraulic	In totes
Operating Mode :	
Continuous	

Operating licence:
1984, by Min. of Commerce and Industry, Min. of Health
Licence for:
sterilization of medical devices
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001 - EN 46001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	half year
Traceable to:	Traceable to:
NPL	Other

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: NO

Upgrading plans: information not available
Decommissioning plans: information not available

Italy: GAMMARAD ITALIA SPA: GAMMA 2

Organization:

Organization: GAMMARAD ITALIA SPA	Type: PRIVATE
Postal Address: Marzabotto 4,Ca' dei Fabbri - 80, 40050, Italy	
Region: Europe	Number of Irradiation Units: 2
Phone: 39/51/6605998	Fax: 39/51/6605574
Email: info@gammarad.it	Website : http://www.gammarad.it
Head: Luigia Irti, President	Date of Response: 2001 / 12 / 4

Irradiation Unit:

Unit: GAMMA 2	IAEA support: NO
Postal Address: Marzabotto 4, Ca' dei Fabbri - 80, 40050, Italy	
Region: Europe	Contact:
Manager: Luigia Irti	Contact Email:

Manufacturer: Game	Type of Irradiator: Pallet conveyor
Commissioning year: 1995	Personnel: 1
Radionuclide: Cobalt-60	Design Capacity: (kCi) 5000
Initial installation: 1995	Initial Activity: (kCi) 400
Last Replenishment: 2001	Current Activity: (kCi) 1800
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Hydraulic	Product Movement : On pallets
Operating Mode : Continuous	

Operating licence:
1994, by Min. of Commerce & Industry, Min. of Health
Licence for:
sterilization of medical devices and pharmaceuticals
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001, EN 46001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	half year
Traceable to:	Traceable to:
NPL	Other

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: NO

Upgrading plans: information not available
Decommissioning plans: information not available

JAPAN

Japan: JAPAN RADIOISOTOPE ASSOCIATION: KOKA LABORATORY

Organization:

Organization:	Type:
Japan Radioisotope Association	PRIVATE
Postal Address:	
2-28-45 Honkomagome,Bunkyo-ku, Tokyo, 113-8941, Japan	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
81/3/53958021	81/3/53958051
Email:	Website :
info@jrias.or.jp	http://www.jrias.or.jp
Head:	Date of Response:
Yoneho Tabata, Delegated Chairman	2001 / 8 / 23

Irradiation Unit:

Unit:	IAEA support:
Koka Laboratory	NO
Postal Address:	
Toriino 121-19, Koka town, Koka-gun, Shiga Prefecture, 520-3403, Japan	
Region:	Contact:
East Asia and the Pacific	Sadayoshi Tohnosu
Manager:	Contact Email:
Norio Kurihara	jriakoka@mx.biwa.ne.jp

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	JS 7500
Commissioning year:	Personnel:
1980	10
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1500
Initial installation:	Initial Activity: (kCi)
1980	500
Last Replenishment:	Current Activity: (kCi)
1999	200
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
1980, by Min. of Educ., Culture, Sports, Science&Technology
Licence for:
sterilization of disposable medical materials
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	E	2-6	10	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	10-	100	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
D	E	1-50	50	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B	10-	20	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO and domestic regulation

Reference Dosimetry System:	**Routine** Dosimetry System:
Ionization Chamber	Alanine
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
every 2 years	daily
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	half year
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

Japan: JAPAN IRRADIATION SERVICE CO. LTD.: TOKAI CENTER

Organization:

Organization:	Type:
Japan Irradiation Service Co. Ltd.	PRIVATE
Postal Address:	
5-10-5, Shimbashi, Minato-ku,Tokyo, 105-0004, Japan	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
81/3/54720851	81/3/54720853
Email:	Website :
Tomio_Takahashi@jisco-hq.co.jp	http://member.nifty.ne.jp/jisco-nq
Head:	Date of Response:
Tomio Takahashi, President	2001 / 8 / 10

Irradiation Unit:

Unit:	IAEA support:
Tokai Center	NO
Postal Address:	
2600 Ishigamitojuku, Tokai Village, Ibaragi-Prefecture, 319-1101, Japan	
Region:	Contact:
East Asia and the Pacific	Masatoshi Yoshioka
Manager:	Contact Email:
Masatoshi Yoshioka	Masatoshi_Yoshioka@jisco-nq.co.jp

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	JS 10000 HD
Commissioning year:	Personnel:
1998	13
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	3000
Initial installation:	Initial Activity: (kCi)
1998	400
Last Replenishment:	Current Activity: (kCi)
2001	1400
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
1998, by Nuclear Safety Technology Center
Licence for:
medical devices
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	400	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
D	D	100-	200	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B	10-	5000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-	25000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
industrial facility with transfer dosimeters	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
quarterly	quarterly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	half year
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

JORDAN

Jordan: JORDAN ATOMIC ENERGY COMMISSION: COMMERICAL GAMMA IRRADIATOR

Organization:

Organization: Jordan Atomic Energy Commission	Type: GOVERNMENT
Postal Address: Shfa Badran - Marj al faras,Amman, XX, Jordan (JOR)	
Region: West Asia	Number of Irradiation Units: 1
Phone: 962/6/5230978	Fax: 962/6/5231017
Email: Jaec1@go.com.jo	Website : http://www.
Head: Dr. Ziad Kodah, Director General	Date of Response: 2002 / 3 / 31

Irradiation Unit:

Unit: Commerical Gamma Irradiator	IAEA support: YES: JOR/7/002
Postal Address: Shfa Badran - Marj al faras, Amman, 1, Jordan (JOR)	
Region: West Asia	Contact: (Mohammed Khalid) Hassan Daghash
Manager: (Mohammed Khalid) Hassan Daghash	Contact Email: Jaec1@go.com.jo

Manufacturer: Institute of Isotopes, Hungary	Type of Irradiator: SVST Co-60/C
Commissioning year: 1999	Personnel: 6
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation: 1999	Initial Activity: (kCi) 100
Last Replenishment:	Current Activity: (kCi) 78
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Batch	

Operating licence: 2000, by Ministry of Energy & Mineral Resources
Licence for: irradiation & sterilization of medical supplies
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?	
NO	
Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	ECB
Calibration irradiation performed by:	Calibration irradiation performed by:
information not available	information not available
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	every batch
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	information not available
Traceable to:	Traceable to:
Other - Institute of Isotopes Co. Ltd. Hungary	Other - Institute of Isotopes Co. Ltd. Hungary

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Upgrading the source activity depending on the market.
Decommissioning plans:	information not available

KOREA, REPUBLIC OF

Korea, Republic of: GREENPIA TECHNOLOGY INC.: IAEA-NR 6398

Organization:

Organization:	Type:
Greenpia Technology Inc.	PRIVATE
Postal Address:	
329 Shinji-Ri, Neungseo-Myun,Yujoo-Kun, Kyungki-Do, 469-810, Korea, Republic of (ROK)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
82/31/8825366	82/31/8835403
Email:	Website :
gammatech@chollian.net	http://www.greenpiatech.co.kr
Head:	Date of Response:
Dr. Soon Y. Park, President	2002 / 1 / 28

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 6398	NO
Postal Address:	
329 Shinji-Ri, Neungseo-Myun, Yujoo-Kun, Kyungki-Do, 469-810, Korea, Republic of (ROK)	
Region:	Contact:
East Asia and the Pacific	Ki Gag Yang
Manager:	Contact Email:
Hee G. Na	Kgyang67@Korea.com

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	Pallet conveyor
Commissioning year:	Personnel:
1985	30
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	2000
Initial installation:	Initial Activity: (kCi)
1987	511
Last Replenishment:	Current Activity: (kCi)
2001	880
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Continuous	

Operating licence:
, by Ministry of Science & Technology
Licence for:
Special Requirements:

Processing Products:

Product: P	Process: P	Dose Range: (kGy) -	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002

Reference Dosimetry System: Ceric Cerous	**Routine** Dosimetry System: PMMA
Calibration irradiation performed by: an accredited calibration laboratory	Calibration irradiation performed by: an accredited calibration laboratory
How often is the readout instrument calibrated? yearly	How often is the readout instrument calibrated? yearly
How often is dosimetry system calibrated? every batch	How often is dosimetry system calibrated? every batch
Traceable to: National lab	Traceable to: National lab

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: NO

Upgrading plans: information not available
Decommissioning plans: information not available

MALAYSIA

Malaysia: STERILGAMMA (M) SDN. BHD.: IAEA-NR 65100

Organization:

Organization:	Type:
STERILGAMMA (M) SDN. BHD.	PRIVATE
Postal Address:	
Lot 42, Rawang Integrated Industrial Park,Rawang, 48000, Malaysia (MAL)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
60/3/60915301	//0
Email:	Website :
yaziz@pc.jaring.my; yaziz@sterilgamma.com	http://www.sterilgamma.com
Head:	Date of Response:
Yaziz Bin Yunus, Managing Director	2001 / 8 / 13

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 65100	NO
Postal Address:	
Lot 42, Rawang Integrated Industrial Park, Rawang, 48000, Malaysia (MAL)	
Region:	Contact:
East Asia and the Pacific	Yaziz Bin Yunus
Manager:	Contact Email:
Abdul Halim Ahmad	yaziz@pc.jaring.my

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	tote box
Commissioning year:	Personnel:
1993	35
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	8000
Initial installation:	Initial Activity: (kCi)
1993	1000
Last Replenishment:	Current Activity: (kCi)
2003	1950
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
1993, by Atomic Energy Licensing Board (AELB) Malaysia
Licence for:
all products except food
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-50	52000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
D	B	2-10	3000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002, USFDAQSR, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
Ceric Cerous	Ceric Cerous
Calibration irradiation performed by:	Calibration irradiation performed by:
industrial facility with transfer dosimeters	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
Other - SSDL-MINT	Other - SSDL-MINT

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

Malaysia: MALAYSIAN INSTITUTE FOR NUCL. TECHNOLOGY RESEARCH: MINTEC-SINAGAMA

Organization:

Organization: Malaysian Institute for Nucl. Technology Research	Type: GOVERNMENT
Postal Address: XX,Kajang, 43000, Malaysia (MAL)	
Region: East Asia and the Pacific	Number of Irradiation Units: 2
Phone: 60/3/89250510	Fax: 60/3/89258262
Email: kp@mint.gov.my	Website : http://www.mint.gov.my
Head: Ahmad Sobri Hj. Hashim, Dr.	Date of Response: 2001 / 8 / 27

Irradiation Unit:

Unit: MINTec-SINAGAMA	IAEA support: NO
Postal Address: XX, Kajang, 43000, Malaysia (MAL)	
Region: East Asia and the Pacific	Contact: Mohd Sidek Othman
Manager: Dr. Muhamad Lebai Juri	Contact Email: sgama@mint.gov.my

Manufacturer: MDS Nordion Inc.	Type of Irradiator: IR 174
Commissioning year: 1989	Personnel: 18
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation: 1989	Initial Activity: (kCi) 150
Last Replenishment: 1999	Current Activity: (kCi) 1300
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence:
1989, by Atomic Energy Licensing Board
Licence for:
medical devices and food
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	12000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	8-12	1000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	Ceric Cerous
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	every batch
Traceable to:	Traceable to:
Other - IDAS	Other - IDAS

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Source upgrading to 250 kCi by 2003.
Decommissioning plans:	information not available

Malaysia: MALAYSIAN INSTITUTE FOR NUCL. TECHNOLOGY RESEARCH: RAYMINTEX PLANT

Organization:

Organization: Malaysian Institute for Nucl. Technology Research	Type: GOVERNMENT
Postal Address: XX,Kajang, 43000, Malaysia (MAL)	
Region: East Asia and the Pacific	Number of Irradiation Units: 2
Phone: 60/3/89250510	Fax: 60/3/89258262
Email: kp@mint.gov.my	Website : http://www.mint.gov.my
Head: Ahmad Sobri Hj. Hashim, Dr.	Date of Response: 2001 / 8 / 27

Irradiation Unit:

Unit: Raymintex Plant	IAEA support: NO
Postal Address: XX, Kajang, 43000, Malaysia (MAL)	
Region: East Asia and the Pacific	Contact: Dr. Wan Manshol Bin W. Zin
Manager: Dr. Wan Manshol Bin W. Zin	Contact Email: manshol@mint.gov.my

Manufacturer: PURIDEC Irradiation Technologies	Type of Irradiator: Latex irradiator
Commissioning year: 1996	Personnel: 7
Radionuclide: Cobalt-60	Design Capacity: (kCi) 1000
Initial installation: 1996	Initial Activity: (kCi) 144
Last Replenishment:	Current Activity: (kCi) 69
Source Storage: Dry	Source Rack : Cylindrical
Source Hoisting : Hydraulic	Product Movement :
Operating Mode : Continuous	

Operating licence: 1996, by
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	10-12	80	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
PMMA	Latex as dosimeter
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
every batch	every process
Traceable to:	Traceable to:
NPL	Other - Secondary Standard Dosimetry Lab

Heard about IDAS :	NO
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Source upgrading by 100 kCi in September 2003.
Decommissioning plans:	information not available

MEXICO

Mexico: INSTITUTO NACIONAL DE INVESTIGACIONES NUCLEARES: DEPARTAMENTO DEL IRRADIADOR GAMMA

Organization:

Organization:	Type:
Instituto Nacional de Investigaciones Nucleares	GOVERNMENT
Postal Address:	
Km. 36.5 Carretera Mexico-Toluca,Salazar, Estado de Mexico, 52045, Mexico (MEX)	
Region:	Number of Irradiation Units:
Latin America	1
Phone:	Fax:
52/5/3297251	52/5/3297305
Email:	Website :
glc@nuclear.inin.mx	http://www.inin.mx
Head:	Date of Response:
Gustavo Liceaga Correa, Mechanical Engineer	2001 / 8 / 21

Irradiation Unit:

Unit:	IAEA support:
Departamento del Irradiador Gamma	NO
Postal Address:	
Km. 36.5 Carretera Mexico-Toluca, Salazar, Estado de Mexico, 52045, Mexico (MEX)	
Region:	Contact:
Latin America	Gustavo Liceaga Correa
Manager:	Contact Email:
Gustavo Liceaga Correa	glc@nuclear.inin.mx

Manufacturer:	Type of Irradiator:
Atomic Energy of Canada Ltd (AECL)	tote box
Commissioning year:	Personnel:
1980	22
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1000
Initial installation:	Initial Activity: (kCi)
1980	937
Last Replenishment:	Current Activity: (kCi)
2000	576
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
1999, by Com. Nacional de Seguridad Nuclear y Salvaguardias
Licence for:
chemical and pharmaceutical products and food
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-30	4592	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	8-12	16329	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	10-20	2041	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES:

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
industrial facility with transfer dosimeters	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

PERU

Peru: INSTITUTO PERUANO DE ENERGIA NUCLEAR (IPEN): PLANTA DE IRRADIACION MULTIUSO (PIMU)

Organization:

Organization: Instituto Peruano de Energia Nuclear (IPEN)	Type: GOVERNMENT
Postal Address: Av. Canada 1470 - San Borja, Lima, 41, Peru (PER)	
Region: Latin America	Number of Irradiation Units: 1
Phone: 51/1/2248998	Fax: 51/1/2248991
Email: mmontoya@IPEN.GOB.PE; modesto_montoya@yahoo.com	Website : http://www.ipen.gob.pe
Head: Modesto Montoya Zavaleta, Presidente	Date of Response: 2002 / 1 / 29

Irradiation Unit:

Unit: Planta de Irradiacion Multiuso (PIMU)	IAEA support: YES: PER/8/004-009
Postal Address: Av. Metropolitana s/n Santa Anita, Lima, Lima 43, Peru (PER)	
Region: Latin America	Contact: Carlos Del Valle Odar (Chief of Plant)
Manager: Lucia Perez Trevino Parker (General Manager)	Contact Email: inmune@terra.com.pe/ carlosdelvalleo@starmedia.com

Manufacturer: Techsnabexport Co. Ltd., Moscow	Type of Irradiator: IAEA Category IV
Commissioning year: 1995	Personnel: 12
Radionuclide: Cobalt-60	Design Capacity: (kCi) 500
Initial installation: 1995	Initial Activity: (kCi) 100
Last Replenishment:	Current Activity: (kCi) 45
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Electric	Product Movement : In carriers
Operating Mode : Batch	

Operating licence: 1996, by National Authority (Rad. Prot.)
Licence for: food irradiation, sterilization of medical supply
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-25	864	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	5-10	173	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	5-10	259	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	8-10	346	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	8-10	432	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	8-10	518	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 11137

Reference Dosimetry System:
Fricke
Calibration irradiation performed by:
information not available
How often is the readout instrument calibrated?
half year
How often is dosimetry system calibrated?
yearly
Traceable to:
Other - IDAS

Routine Dosimetry System:
ECB
Calibration irradiation performed by:
information not available
How often is the readout instrument calibrated?
half year
How often is dosimetry system calibrated?
yearly
Traceable to:

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	To improve the operation of the plant.
Decommissioning plans:	information not available

PHILIPPINES

Philippines: PHILIPPINE NUCLEAR RESEARCH INSTITUTE: PNRI MULTIPURPOSE IRRADIATION FACILITY

Organization:

Organization:	Type:
Philippine Nuclear Research Institute	GOVERNMENT
Postal Address:	
Commonwealth Ave., Diliman,Quezon City, 1101, Philippines (PHI)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
63/2/9294719	63/2/9294719
Email:	Website :
amr@asti.gov.ph	http://www.pnri.dost.gov.ph
Head:	Date of Response:
Alumanda M. dela Rosa, Acting Director	2001 / 11 / 26

Irradiation Unit:

Unit:	IAEA support:
PNRI Multipurpose Irradiation Facility	YES: PHI/8/009, PHI/8/010, PHI/8/013
Postal Address:	
Commonwealth Ave., Diliman, Quezon City, 1101, Philippines (PHI)	
Region:	Contact:
East Asia and the Pacific	Estelita G. Cabalfin
Manager:	Contact Email:
Estelita G. Cabalfin	egcabalfin@yahoo.com

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	Gammabeam 651PT (pilot scale)
Commissioning year:	Personnel:
1989	7
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	250
Initial installation:	Initial Activity: (kCi)
1989	29
Last Replenishment:	Current Activity: (kCi)
1996	72
Source Storage:	Source Rack :
Wet	Other: 8 independent source racks
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Batch	

Operating licence:
1989, by
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	5-7	56	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	25-	13	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B	1-	80	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?	
NO	
Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	ECB
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
Other - IDAS	Other - IDAS

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Additional Co-60 loading.
Decommissioning plans:	information not available

PORTUGAL

Portugal: ITN - NUCLEAR AND TECHNOLOGICAL INSTITUTE: UTR - RADIATION TECHNOLOGIES UNIT

Organization:

Organization:	Type:
ITN - Nuclear and Technological Institute	GOVERNMENT
Postal Address:	
Estrada Nacional no. 10,Sacavem, 2686-953, Portugal (POR)	
Region:	Number of Irradiation Units:
Europe	1
Phone:	Fax:
351/21/9946000	351/21/9550117
Email:	Website :
seccd@itn.pt	http://www.itn.pt
Head:	Date of Response:
Jose Carvalho Soares, Professor	2002 / 1 / 15

Irradiation Unit:

Unit:	IAEA support:
UTR - Radiation Technologies Unit	NO
Postal Address:	
Estrada Nacional no. 10, Sacavem, 2686-953, Portugal (POR)	
Region:	Contact:
Europe	Luis Miguel Mota Ferreira
Manager:	Contact Email:
Luis Miguel Mota Ferreira	ferreira@itn.pt

Manufacturer:	Type of Irradiator:
Techsnabexport Co. Ltd., Moscow	planar
Commissioning year:	Personnel:
1988	3
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	
Initial installation:	Initial Activity: (kCi)
1988	300
Last Replenishment:	Current Activity: (kCi)
	56
Source Storage:	Source Rack :
Dry	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Other:	

Operating licence:
, by Com. de Proteccao Contra as Radiacoes Ionizantes
Licence for:
sterilization of disposable medical devices.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	27-	30	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	B	10-	32	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	25-	7	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B	10-	44	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	21-29	83	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO, CEN

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
industrial facility with transfer dosimeters	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	every batch
Traceable to:	Traceable to:
RISO	RISO

Heard about IDAS :	NO
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

ROMANIA

Romania: "HORIA HULUBEI" NAT. INST. FOR PHYSICS & NUCL. ENG: IRASM

Organization:

Organization:	Type:
"Horia Hulubei" Nat. Inst. for Physics & Nucl. Eng	GOVERNMENT
Postal Address:	
Atomistilor 407, POB MG-6,Bucharest - Magurele, 76900, Romania (ROM)	
Region:	Number of Irradiation Units:
Europe	1
Phone:	Fax:
40/1/4042300	40/1/4231701
Email:	Website :
matrod@ifin.nipne.ro	http://www.nipne.ro
Head:	Date of Response:
Dr. Gheorghe Mateescu, General Director	2001 / 9 / 17

Irradiation Unit:

Unit:	IAEA support:
IRASM	YES: ROM/8/011
Postal Address:	
Atomistilor 407, POB MG-6, Bucharest - Magurele, 76900, Romania (ROM)	
Region:	Contact:
Europe	Corneliu Catalin Ponta
Manager:	Contact Email:
Corneliu Catalin Ponta	cponta@ifin.nipne.ro

Manufacturer:	Type of Irradiator:
Institute of Isotopes, Hungary	tote box
Commissioning year:	Personnel:
2000	9
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	2000
Initial installation:	Initial Activity: (kCi)
2000	100
Last Replenishment:	Current Activity: (kCi)
	88
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
2000, by Romanian Nuclear Regulatory Body
Licence for:
multipurpose
Special Requirements:
operating licence for 2 years, up to 300 kCi

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: NRAC (Romanian QA programme initially developed for Nuclear Power Plant)

Reference Dosimetry System:	**Routine** Dosimetry System:
ECB	ECB
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
RISO	National lab

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: Depends on promotion stage; the current licence is up to 300 kCi.

Decommissioning plans: Sources will be returned to manufacturer (Hungary) after 15 years working time - mentioned in the tripartite contract (IAEA - Institute of Isotopes Budapest - IFIN-HH Bucharest)

SAUDI ARABIA

Saudi Arabia: ALSHIFA MEDICAL SYRINGE MFG CO. LTD.: ALSHIFA IRRADIATION SERVICES

Organization:

Organization:	Type:
Alshifa Medical Syringe Mfg Co. Ltd.	PRIVATE
Postal Address:	
1st Industrial Area, POB 7917,Dammam, 31472, Saudi Arabia (SAU)	
Region:	Number of Irradiation Units:
West Asia	1
Phone:	Fax:
966/3/8474284	966/3/8474033
Email:	Website :
alshifa@alshifa.com	http://www.alshifa.com
Head:	Date of Response:
Fahad Sunaid Al Sunaid, General Manager	2001 / 9 / 4

Irradiation Unit:

Unit:	IAEA support:
Alshifa Irradiation Services	NO
Postal Address:	
1st Industrial Area, POB 7917, Dammam, 31472, Saudi Arabia (SAU)	
Region:	Contact:
West Asia	Mohammed Farhat Chaudhry
Manager:	Contact Email:
Mohammed Farhat Chaudhry	farhat@alshifa.com

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	tote box
Commissioning year:	Personnel:
1982	5
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	750
Initial installation:	Initial Activity: (kCi)
1982	180
Last Replenishment:	Current Activity: (kCi)
1996	110
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
1982, by King Abdulaziz City of Science & Techn., Riyadh
Licence for:
sterilization of medical products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	20-	8500	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	20-	100	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 11137 (1995), BSEN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
Ceric Cerous	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
quarterly	quarterly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	quarterly
Traceable to:	Traceable to:
Nordion	Nordion

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	planning for food irradiation
Decommissioning plans:	information not available

SERBIA & MONTENEGRO

Serbia & Montenegro: INSTITUTE OF NUCLEAR SCIENCES VINCA: IAEA-NR 84124

Organization:

Organization:	Type:
Institute of Nuclear Sciences Vinca	GOVERNMENT
Postal Address:	
Mike Petrovica - Alasa, POB 522,Belgrade, 11001, Serbia & Montenegro	
Region:	Number of Irradiation Units:
Europe	1
Phone:	Fax:
381/11/438906	381/11/3442420
Email:	Website :
	http://www.vin.bg.ac.yu
Head:	Date of Response:
Dr. Kruno Subotic, Director General	2002 / 6 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 84124	YES: YUG/025/74
Postal Address:	
Mike Petrovica - Alasa, POB 522, Belgrade, 11001, Serbia & Montenegro	
Region:	Contact:
Europe	Eng. Miroljub Arandjelovic
Manager:	Contact Email:
Eng. Miroljub Arandjelovic	radunit@yahoo.com

Manufacturer:	Type of Irradiator:
CEA Grenoble, France	Product overlap
Commissioning year:	Personnel:
1978	8
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1000
Initial installation:	Initial Activity: (kCi)
1978	200
Last Replenishment:	Current Activity: (kCi)
1998	136
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1978, by Ministry of Health of Republic of Serbia
Licence for:
industrial sterilization of medical supplies, pharmaceuticals, food and additives.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	1600	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	25-	40	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	5-10	280	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	25-	40	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	25-	2000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 11137

Reference Dosimetry System:	**Routine** Dosimetry System:
ECB	ECB
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
daily	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
every batch	information not available
Traceable to:	Traceable to:
RISO	RISO

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Upgrading technical functioning, process control and radiation safety.
Decommissioning plans:	information not available

SOUTH AFRICA

South Africa: HIGH ENERGY PROCESSING CAPE (PTY) LTD.: HEPRO CAPE (PTY) LTD.

Organization:

Organization:	Type:
High Energy Processing Cape (Pty) Ltd.	PRIVATE
Postal Address:	
6 Ferrule Avenue, Montague Gardens,Cape Town, 7472, South Africa (SAF)	
Region:	Number of Irradiation Units:
Africa	1
Phone:	Fax:
27/21/5512440	27/21/5511766
Email:	Website :
hepro@iafrica.com; cherin_hepro@iafrica.com	http://www.
Head:	Date of Response:
Cherin Balt, Managing Director	2002 / 5 / 24

Irradiation Unit:

Unit:	IAEA support:
Hepro Cape (Pty) Ltd.	NO
Postal Address:	
Postnet Suite #124, Private Bag X 7, Chempet, Cape Town, 7442, South Africa (SAF)	
Region:	Contact:
Africa	Cherin Balt
Manager:	Contact Email:
Cherin Balt	cherin_hepro@iafrica.com

Manufacturer:	Type of Irradiator:
Hepro (Pty) Ltd.	BP1
Commissioning year:	Personnel:
1986	20
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	0
Initial installation:	Initial Activity: (kCi)
1985	190
Last Replenishment:	Current Activity: (kCi)
2001	470
Source Storage:	Source Rack :
Wet	Other: square
Source Hoisting :	Product Movement :
Pneumatic	On pallets
Operating Mode :	
Batch	

Operating licence:
1986, by Dpt. of Health, Directorate of Radiation Control
Licence for:
all gamma radiation processing
Special Requirements:
Check on reference sources every half year.

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	9-25	1000 [conv.]	300
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	2-10	5714.3 [conv.]	4000
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C	0.15-1	357.1 [conv.]	250
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
D	A	1-25	50 [conv.]	50
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
D	B	6-	150	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	15-25	100 [conv.]	50
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001 (2000)

Reference Dosimetry System:	**Routine** Dosimetry System:
PMMA	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
monthly	monthly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	NO
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Renewing control systems.
Decommissioning plans:	information not available

South Africa: GAMMASTER SOUTH AFRICA (PTY) LTD.: IAEA-NR 74113

Organization:

Organization: Gammaster South Africa (Pty) Ltd.	Type: PRIVATE
Postal Address: No. 5 Waterpas Road,Kempton Park, 1620, South Africa (SAF)	
Region: Africa	Number of Irradiation Units: 1
Phone: 27/11/9748851	Fax: 27/11/9748986
Email: g.von.ketelhodt@gammaster.co.za	Website : http://www.gammaster.com
Head: Guenter von Ketelhodt, Managing Director	Date of Response: 2002 / 5 / 2

Irradiation Unit:

Unit: IAEA-NR 74113	IAEA support: NO
Postal Address: No. 5 Waterpas Road, Kempton Park, 1620, South Africa (SAF)	
Region: Africa	Contact: Nigel Laing
Manager: Nigel Laing	Contact Email: n.laing@gammaster.co.za

Manufacturer: MDS Nordion Inc.	Type of Irradiator: J 8900 and IR 113
Commissioning year: 1982	Personnel: 25
Radionuclide: Cobalt-60	Design Capacity: (kCi) 6000
Initial installation: 1982	Initial Activity: (kCi) 974
Last Replenishment: 2001	Current Activity: (kCi) 754
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence:
, by Dpt. of Health, Radiation Control
Licence for:
using Cobalt 60
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	10-25	6000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	2-16	37000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-25	5500	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
D	A	2-75	6000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	6-150	500	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B	2-16	950	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 13488, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	PLC upgrade.
Decommissioning plans:	information not available

South Africa: NTP (A BUSINESS DIVISION OF NECSA LTD.): STERISURE

Organization:

Organization: NTP (a business division of NECSA Ltd.)	Type: GOVERNMENT
Postal Address: POB 582,Pretoria, 0001, South Africa (SAF)	
Region: Africa	Number of Irradiation Units: 1
Phone: 27/12/3055963	Fax: 27/12/33055960
Email: radioisotopes@aec.co.za	Website : http://www.radioisotopes.co.za
Head: DG Robertson,	Date of Response: 2002 / 1 / 28

Irradiation Unit:

Unit: Sterisure	IAEA support: NO
Postal Address: POB 582, Pretoria, 0001, South Africa (SAF)	
Region: Africa	Contact: Roland von Gogh
Manager: Gerhard Wortmann	Contact Email: roland@aec.co.za

Manufacturer: MDS Nordion Inc.	Type of Irradiator: tote box
Commissioning year: 1971	Personnel: 3
Radionuclide: Cobalt-60	Design Capacity: (kCi) 0
Initial installation: 1971	Initial Activity: (kCi) 1000
Last Replenishment: 2001	Current Activity: (kCi) 240
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Electric	Product Movement : In totes
Operating Mode : Batch	

Operating licence:
1971, by National Nuclear Regulator
Licence for:
gamma irradiation of food and other products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	8-25		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002

Reference Dosimetry System:	**Routine** Dosimetry System:
PMMA	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	monthly
Traceable to:	Traceable to:
NPL	National lab

Heard about IDAS :	NO
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

SWEDEN

Sweden: GAMMASTER SWEDEN AB: IAEA-NR 78117

Organization:

Organization: Gammaster Sweden AB	Type: PRIVATE
Postal Address: Industrivaegen 9A,Skaerhamn, 47131, Sweden	
Region: Europe	Number of Irradiation Units: 1
Phone: 46/304/670465	Fax: 46/304/670656
Email: gamma@gammaster.se	Website : http://www.gammaster.com
Head: James O'Doherty, Managing Director	Date of Response: 2001 / 7 / 26

Irradiation Unit:

Unit: IAEA-NR 78117	IAEA support: NO
Postal Address: Industrivaegen 9A, Skaerhamn, 47131, Sweden	
Region: Europe	Contact: Mr. James O'Doherty
Manager: Mr. Bo Funkqrist	Contact Email: james@gammaster.se

Manufacturer: H.S. Marsh, U.K.	Type of Irradiator: information not available
Commissioning year: 1968	Personnel: 3
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation: 1968	Initial Activity: (kCi)
Last Replenishment: 1998	Current Activity: (kCi) 0
Source Storage: Dry	Source Rack : Rectangular
Source Hoisting :	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence: 1999, by Statens stralskyddsinstut
Licence for: commerical sterilization
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-45		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
information not available	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	yearly
Traceable to:	Traceable to:
	RISO

Heard about IDAS : NO
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: NO

Upgrading plans: information not available
Decommissioning plans: information not available

SWITZERLAND

Switzerland: STUDER AG, WERK HARD: IAEA-NR 77116

Organization:

Organization: STUDER AG, Werk Hard	Type: PRIVATE
Postal Address: Hogenweidstr. 2,Daeniken, 4658, Switzerland	
Region: Europe	Number of Irradiation Units: 1
Phone: 41/62/2889060	Fax: 41/62/2889070
Email: mail@studer-hard.ch	Website : http://www.studer-hard.ch
Head: Niklaus Studer, General Manager	Date of Response: 2001 / 8 / 1

Irradiation Unit:

Unit: IAEA-NR 77116	IAEA support: NO
Postal Address: Hogenweidstr. 2, Daeniken, 4658, Switzerland	
Region: Europe	Contact: H.J. Hartmann
Manager: H.J. Hartmann	Contact Email: mail@studer-hard.ch

Manufacturer: MDS Nordion Inc.	Type of Irradiator: Pallet conveyor
Commissioning year: 1991	Personnel: 7
Radionuclide: Cobalt-60	Design Capacity: (kCi) 4000
Initial installation: 1991	Initial Activity: (kCi) 400
Last Replenishment: 2001	Current Activity: (kCi) 2100
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence: 1991, by BAG
Licence for: gamma processing
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
A	A	-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002

Reference Dosimetry System:	**Routine** Dosimetry System:
Ceric Cerous	Ceric Cerous
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	yearly
Traceable to:	Traceable to:
NIST	Nordion

Heard about IDAS : YES
Participate in IDAS: YES
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: NO

Upgrading plans: information not available
Decommissioning plans: information not available

SYRIAN ARAB REPUBLIC

Syrian Arab Republic: ATOMIC ENERGY COMMISSION OF SYRIA: IAEA-NR 41118

Organization:

Organization: Atomic Energy Commission of Syria	Type: GOVERNMENT
Postal Address: POB 6091,Damascus, 6091, Syrian Arab Republic (SYR)	
Region: West Asia	Number of Irradiation Units: 1
Phone: 963/11/5426502	Fax: 963/11/6112289
Email: atomic@sy.net	Website : http://www.
Head: Prof. I. Othman, General Director	Date of Response: 2001 / 10 / 11

Irradiation Unit:

Unit: IAEA-NR 41118	IAEA support: YES: SYR/7/002
Postal Address: POB 6091, Damascus, 6091, Syrian Arab Republic (SYR)	
Region: West Asia	Contact: Haroun Alkassiri
Manager: Haroun Alkassiri	Contact Email: atomic@aec.org.sy

Manufacturer: Russia	Type of Irradiator: ROBO (I N K-7-4)
Commissioning year: 1994	Personnel: 10
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation: 1993	Initial Activity: (kCi) 115
Last Replenishment:	Current Activity: (kCi) 33
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Electric	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence: 1997, by Atomic Energy Commission of Syria
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	150	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	10-	36.1 [conv.]	25.3
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C	0.07-	295.7 [conv.]	207
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: National

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	ECB
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
half year	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
half year	half year
Traceable to:	Traceable to:
National lab	National lab

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

TAIWAN

Taiwan: INSTITUTE OF NUCLEAR ENERGY RESEARCH: IAEA-NR 81121

Organization:

Organization: Institute of Nuclear Energy Research	Type: GOVERNMENT
Postal Address: 1000 Wen-Hua Road,Chia-An Village, Lung-Tan, 325, Taiwan	
Region: East Asia and the Pacific	Number of Irradiation Units: 1
Phone: 886/3/4711400	Fax: 886/3/4713759
Email: pssong@iner.gov.tw	Website : http://www.iner.gov.tw/
Head: Shieh-Jun Wang, Director	Date of Response: 2001 / 8 / 17

Irradiation Unit:

Unit: IAEA-NR 81121	IAEA support: NO
Postal Address: 1000 Wen-Hua Road, Chia-An Village, Lung-Tan, 325, Taiwan	
Region: East Asia and the Pacific	Contact: Ping-Shen Song
Manager: Ping-Shen Song	Contact Email: pssong@iner.gov.tw

Manufacturer: Institute of Nuclear Energy Research, Taiwan	Type of Irradiator: Industrial Stationary
Commissioning year: 1982	Personnel: 9
Radionuclide: Cobalt-60	Design Capacity: (kCi) 1000
Initial installation: 1982	Initial Activity: (kCi) 600
Last Replenishment: 1999	Current Activity: (kCi) 580
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Electric	Product Movement : In carriers
Operating Mode : Batch	

Operating licence:
1982, by Atomic Energy Council, Taiwan
Licence for:

Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-	1400	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C	0.12-	3122	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	100-	314	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

Taiwan: CHINA BIOTECH CORPORATION: TAICHUNG PLANT

Organization:

Organization:	Type:
China Biotech Corporation	PRIVATE
Postal Address:	
10, 33rd Road, Taichung Industrial Park,Taichung, 407, Taiwan	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
886/4/23597515	886/4/23597080
Email:	Website :
cbc.biotech@msa.hinet.net	http://www.
Head:	Date of Response:
Wu-Teng Wang, President	/ /

Irradiation Unit:

Unit:	IAEA support:
Taichung Plant	NO
Postal Address:	
10, 33rd Road, Taichung Industrial Park, Taichung, 407, Taiwan	
Region:	Contact:
East Asia and the Pacific	Chih-Min Wang
Manager:	Contact Email:
Wu-Teng Wang	jefwang@msib.hinet.net

Manufacturer:	Type of Irradiator:
Steri Genics International, USA	Carrier type
Commissioning year:	Personnel:
1993	23
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	10000
Initial installation:	Initial Activity: (kCi)
1993	600
Last Replenishment:	Current Activity: (kCi)
2000	800
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1993, by Atomic Energy Council (Taiwan)
Licence for:
irradiation processing
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-50	13000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	B	1-30	10000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	80-150	550	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	yearly
Traceable to:	Traceable to:
NPL	NIST

Heard about IDAS :	NO
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

THAILAND

Thailand: GAMMASTER (THAILAND) LTD.: IAEA-NR 89128

Organization:

Organization:	Type:
GAMMASTER (THAILAND) Ltd.	PRIVATE
Postal Address:	
Bangpakong Industrial Park II, 700/465 Moo 7,T. Donhuaroh, A. Muang, Chonburi, 20000, Thailand (THA)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
66/38/458431	66/38/458435
Email:	Website :
info@gammaster.co.th	http://www.gammaster.com
Head:	Date of Response:
Yves Henon, Managing Director	2001 / 10 / 16

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 89128	NO
Postal Address:	
Bangpakong Industrial Park II, 700/465 Moo 7, T. Donhuaroh, A. Muang, Chonburi, 20000, Thailand (THA)	
Region:	Contact:
East Asia and the Pacific	Mr. Suwit Tunlayadechanont
Manager:	Contact Email:
Mr. Suwit Tunlayadechanont	suwit@gammaster.co.th

Manufacturer:	Type of Irradiator:
Gammaster	continuous pallet irradiator
Commissioning year:	Personnel:
2000	19
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	0
Initial installation:	Initial Activity: (kCi)
2000	727
Last Replenishment:	Current Activity: (kCi)
2000	1230
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	On pallets
Operating Mode :	
Continuous	

Operating licence:
2000, by Office of Atomic Energy for Peace
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-50		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
weekly	weekly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
every batch	every batch
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: Yearly source replenishments.
Decommissioning plans: information not available

Thailand: KENDALL-GAMMATRON CO. LTD.: IAEA-NR 90129

Organization:

Organization:	Type:
Kendall-Gammatron Co. Ltd.	PRIVATE
Postal Address:	
117 Moo 2, Petchkasem Road,Klongmai, Sampran, Nakornpathom, 73110, Thailand (THA)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
66/34/222792	66/34/324462
Email:	Website :
gammatron@gammatron.co.th	http://www.gammatron.co.th
Head:	Date of Response:
Mr. Denis O. Tight, Managing Director	2001 / 10 / 19

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 90129	NO
Postal Address:	
117 Moo 2, Petchkasem Road, Klongmai, Sampran, Nakornpathom, 73110, Thailand (THA)	
Region:	Contact:
East Asia and the Pacific	Mr. Tavit Lertritsumpun
Manager:	Contact Email:
Mr. Tavit Lertritsumpun	tavit@gammatron.co.th

Manufacturer:	Type of Irradiator:
H.S. Marsh, U.K.	4 tier, 8 pass
Commissioning year:	Personnel:
1984	8
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	500
Initial installation:	Initial Activity: (kCi)
1984	147
Last Replenishment:	Current Activity: (kCi)
2001	100
Source Storage:	Source Rack :
Dry	Rectangular
Source Hoisting :	Product Movement :
Hydraulic	In carriers
Operating Mode :	
Continuous	

Operating licence:
2001, by Office of Atomic Energy for Peace
Licence for:
sterilization of medical devices
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	16-37	2000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	never
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	yearly
Traceable to:	Traceable to:
	NPL

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

Thailand: OFFICE OF ATOMIC ENERGY FOR PEACE: IAEA-NR 92131

Organization:

Organization:	Type:
Office of Atomic Energy for Peace	GOVERNMENT
Postal Address:	
Vibhavadi Rangsit, Chatuchak,Bangkok, 10900, Thailand (THA)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
66/2/25790547	66/2/25613013
Email:	Website :
	http://www.oaep.go.th
Head:	Date of Response:
Mr. Kriangkorn Bejabutra, Secretary General	2002 / 1 / 30

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 92131	NO
Postal Address:	
Klong 5, Klong Luang, Pathumthani, 12120, Thailand (THA)	
Region:	Contact:
East Asia and the Pacific	Mr. Pravait Keawchoung
Manager:	Contact Email:
Mr. Pravait Keawchoung	pravait@hotmail.com

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	JS 8900
Commissioning year:	Personnel:
1996	15
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	3000
Initial installation:	Initial Activity: (kCi)
1989	450
Last Replenishment:	Current Activity: (kCi)
1996	205
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Continuous	

Operating licence:
1996, by O.A.E.P.
Licence for:
possession and utilization of radioactive material
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	D	2-4	42.9 [conv.]	30
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	D	5-8	85.7 [conv.]	60
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	D	5-10	1285.7 [conv.]	900
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	D	2-5	100 [conv.]	50
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by: an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	every batch
Traceable to:	Traceable to: National lab

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Approximately April 2002.
Decommissioning plans:	Approximately April 2002.

NETHERLANDS

Netherlands: GAMMASTER B.V.: IAEA-NR 68106

Organization:

Organization: Gammaster B.V.	Type: PRIVATE
Postal Address: Morsestraat 3,Ede, 6716 AH, The Netherlands	
Region: Europe	Number of Irradiation Units: 3
Phone: 31/318/637476	Fax: 31/318/639643
Email: info@gammaster.com	Website : http://www.gammaster.com
Head: P.M. Schroeder, Managing Director	Date of Response: 2001 / 8 / 21

Irradiation Unit:

Unit: IAEA-NR 68106	IAEA support: NO
Postal Address: Morsestraat 3, Ede, 6716 AH, The Netherlands	
Region: Europe	Contact: M. Schroeder
Manager: N. Kuin	Contact Email: m.schroeder@gammaster.opg.nl

Manufacturer: MDS Nordion Inc.	Type of Irradiator: JS 6500
Commissioning year: 1971	Personnel: 40
Radionuclide: Cobalt-60	Design Capacity: (kCi) 1000
Initial installation: 1971	Initial Activity: (kCi)
Last Replenishment: 2001	Current Activity: (kCi)
Source Storage: Wet	Source Rack : Other: FLAT
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence: 2001, by Ministry of Social Affairs + VROM, The Netherlands
Licence for: contract sterilization/irradiation services
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	0-30		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, ISO 14001, EN 46002, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
information not available	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	yearly
Traceable to:	Traceable to:
	NPL

Heard about IDAS : NO
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

Netherlands: GAMMASTER B.V.: IAEA-NR 68107

Organization:

Organization:	Type:
Gammaster B.V.	PRIVATE
Postal Address:	
Morsestraat 3,Ede, 6716 AH, The Netherlands	
Region:	Number of Irradiation Units:
Europe	3
Phone:	Fax:
31/318/637476	31/318/639643
Email:	Website :
info@gammaster.com	http://www.gammaster.com
Head:	Date of Response:
P.M. Schroeder, Managing Director	2001 / 8 / 21

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 68107	NO
Postal Address:	
Morsestraat 3, Ede, 6716 AH, The Netherlands	
Region:	Contact:
Europe	M. Schroeder
Manager:	Contact Email:
N. Kuin	m.schroeder@gammaster.opg.nl

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	JS 9000
Commissioning year:	Personnel:
1982	40
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1000
Initial installation:	Initial Activity: (kCi)
1982	0
Last Replenishment:	Current Activity: (kCi)
2001	0
Source Storage:	Source Rack :
Wet	Cylindrical
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Continuous	

Operating licence:
2001, by Ministry of Social Affairs + VROM, The Netherlands
Licence for:
contract sterilization/irradiation services
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	0-30		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, ISO 14001, EN 46002, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
information not available	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	yearly
Traceable to:	Traceable to:
	NPL

Heard about IDAS :	NO
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

Netherlands: GAMMASTER B.V.: IAEA-NR 68108

Organization:

Organization:	Type:
Gammaster B.V.	PRIVATE
Postal Address:	
Morsestraat 3,Ede, 6716 AH, The Netherlands	
Region:	Number of Irradiation Units:
Europe	3
Phone:	Fax:
31/318/637476	31/318/639643
Email:	Website :
info@gammaster.com	http://www.gammaster.com
Head:	Date of Response:
P.M. Schroeder, Managing Director	2001 / 8 / 21

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 68108	NO
Postal Address:	
Morsestraat 3, Ede, 6716 AH, The Netherlands	
Region:	Contact:
Europe	M. Schroeder
Manager:	Contact Email:
N. Groeneveld	m.schroeder@gammaster.opg.nl

Manufacturer:	Type of Irradiator:
Gammaster	GS 6000
Commissioning year:	Personnel:
1998	40
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1000
Initial installation:	Initial Activity: (kCi)
1998	0
Last Replenishment:	Current Activity: (kCi)
2001	0
Source Storage:	Source Rack :
Wet	Other: FLAT
Source Hoisting :	Product Movement :
Pneumatic	On pallets
Operating Mode :	
Continuous	

Operating licence:
1997, by Ministry of Social Affairs, VROM, VWS
Licence for:
contract sterilization/irradiation services
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	0-30		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, ISO 14001, EN 46002, EN 552

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
information not available	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	yearly
Traceable to:	Traceable to:
	NPL

Heard about IDAS :	NO
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

TURKEY

Turkey: TURKISH ATOMIC ENERGY AUTHORITY: ANTHAM, FOOD IRRADIATION & STERILIZATION DPT.

Organization:

Organization: Turkish Atomic Energy Authority	Type: GOVERNMENT
Postal Address: Eskisehir, Yolu 9 km,Ankara, 06530, Turkey (TUR)	
Region: Europe	Number of Irradiation Units: 1
Phone: 90/312/2871529	Fax: n/a
Email: gisb@taek.gov.tr	Website : http://www.taek.gov.tr
Head: Dr. Erdener Birol, President	Date of Response: 2002 / 1 / 8

Irradiation Unit:

Unit: ANTHAM, Food Irradiation & Sterilization Dpt.	IAEA support: YES:
Postal Address: Istanbul Yolu 30 km Kazan, Ankara, 06983, Turkey (TUR)	
Region: Europe	Contact: Galip Siyakus
Manager: Galip Siyakus	Contact Email: galips@taek.gov.tr

Manufacturer: Institute of Isotopes, Hungary	Type of Irradiator: SVST-Co 60-1
Commissioning year: 1993	Personnel: 14
Radionuclide: Cobalt-60	Design Capacity: (kCi) 1000
Initial installation: 1993	Initial Activity: (kCi) 101
Last Replenishment: 2001	Current Activity: (kCi) 235
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence:
1997, by Turkish Atomic Energy Authority, Min. of Health
Licence for:
radiation sterilization; food irradiation (under process)
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
A	A	25-	5000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
Fricke	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
in-house calibration facility	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
half year	half year
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: Developing a total quality system for the facility and accreditation of existing QC Laboratories of the Department are being planned.

Decommissioning plans: information not available

Turkey: GAMMA-PAK STERILIZASYON SAN VETIC A.S.: IAEA-NR 82122

Organization:

Organization:	Type:
Gamma-Pak Sterilizasyon San veTIC A.S.	PRIVATE
Postal Address:	
Ayazaga Koey Yolu Uezeri, Sueper Ates Tugla Fabrik,Yenilevent/ Istanbul, 80624, Turkey (TUR)	
Region:	Number of Irradiation Units:
Europe	1
Phone:	Fax:
90/282/7265790	90/282/7265178
Email:	Website :
gamma-pak@ixir.com	http://www.
Head:	Date of Response:
Memduh Ueretmen, Head of the Board	2001 / 8 / 7

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 82122	NO
Postal Address:	
Yuensa Yolu No. 4 Organize San. Boel., Cerkezkoey - Tekirdag, 59500, Turkey (TUR)	
Region:	Contact:
Europe	Dr. Hasan Alkan
Manager:	Contact Email:
Dr. Hasan Alkan	alkanh@ixir.com

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	JS 9600
Commissioning year:	Personnel:
1994	14
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	3000
Initial installation:	Initial Activity: (kCi)
1994	467
Last Replenishment:	Current Activity: (kCi)
1999	463
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
1996, by Turkish Atomic Energy Authority, Min. of Health
Licence for:
radiation sterilization
Special Requirements:
food irradiation under process

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-35	120000	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	125-150	700	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
Ceric Cerous	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
industrial facility with transfer dosimeters	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
half year	half year
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
every 2 years	half year
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

UKRAINE

Ukraine: GEMOPLAST: FACILITY "STERYLIZACHIYA-III"

Organization:

Organization:	Type:
Gemoplast	GOVERNMENT
Postal Address:	
Mayakovskogo 57,Bilgorod-Dnistrovsky of Odeska region, 67700, Ukraine (UKR)	
Region:	Number of Irradiation Units:
Europe	1
Phone:	Fax:
3800/4849/31562	3800/4849/31502
Email:	Website :
	http://www.
Head:	Date of Response:
Bogdan Podgornyy, General Director	2002 / 1 / 30

Irradiation Unit:

Unit:	IAEA support:
Facility "STERYLIZACHIYA-III"	NO
Postal Address:	
Mayakovskogo 57, Bilgorod-Dnistrovsky of Odeska region, 67700, Ukraine (UKR)	
Region:	Contact:
Europe	Igor Shilling
Manager:	Contact Email:
Igor Shilling	Tel.: +380-04849-31560

Manufacturer:	Type of Irradiator:
VNIIRT, Russia	Sterylizachiya-III
Commissioning year:	Personnel:
1976	18
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1100
Initial installation:	Initial Activity: (kCi)
1976	1100
Last Replenishment:	Current Activity: (kCi)
1991	540
Source Storage:	Source Rack :
Dry	Other: tube elements
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Batch	

Operating licence:
1991, by State Dpt. for Ecology & Nat. Resources for Odeska
Licence for:
radiation sterilization
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
information not available	information not available
Calibration irradiation performed by:	Calibration irradiation performed by:
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	information not available
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	information not available
Traceable to:	Traceable to:
	Other - Ukrainian State metrology system

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: NO

Upgrading plans: information not available
Decommissioning plans: information not available

UNITED KINGDOM

United Kingdom: ISOTRON PLC.: ISOTRON-BRADFORD

Organization:

Organization: ISOTRON PLC.	Type: PRIVATE
Postal Address: Moray Road,Swindon, SN2 8XS, United Kingdom	
Region: Europe	Number of Irradiation Units: 6
Phone: 44/1793/601000	Fax: 44/1793/601040
Email:	Website : http://www.isotron.co.uk
Head: Mr. John Barker, Managing Director	Date of Response: 2001 / 7 / 25

Irradiation Unit:

Unit: Isotron-Bradford	IAEA support: NO
Postal Address: Roydsdale Way, Bradford, BD4 6SE, United Kingdom	
Region: Europe	Contact: Mr. Malcolm Maddison
Manager: Mr. Malcolm Maddison	Contact Email: malcolmm@isotron.co.uk

Manufacturer: MDS Nordion Inc.	Type of Irradiator: tote irradiator
Commissioning year: 1970	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation: 1970	Initial Activity: (kCi)
Last Replenishment:	Current Activity: (kCi)
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence: 1970, by Department of Environment
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002

Reference Dosimetry System:	**Routine** Dosimetry System:
Dichromate	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	every batch
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

United Kingdom: ISOTRON PLC.: ISOTRON-DAVENTRY

Organization:

Organization: ISOTRON PLC.	Type: PRIVATE
Postal Address: Moray Road,Swindon, SN2 8XS, United Kingdom	
Region: Europe	Number of Irradiation Units: 6
Phone: 44/1793/601000	Fax: 44/1793/601040
Email:	Website : http://www.isotron.co.uk
Head: Mr. John Barker, Managing Director	Date of Response: 2001 / 7 / 25

Irradiation Unit:

Unit: Isotron-Daventry	IAEA support: NO
Postal Address: Brunel Close, Daventry, NN11 5RB, United Kingdom	
Region: Europe	Contact: Mr. Colin Barden
Manager: Mr. Colin Barden	Contact Email: colinb@isotron.co.uk

Manufacturer: MDS Nordion Inc.	Type of Irradiator: tote irradiator
Commissioning year: 1978	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation:	Initial Activity: (kCi)
Last Replenishment:	Current Activity: (kCi)
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence: 1978, by Department of Environment
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002

Reference Dosimetry System:	**Routine** Dosimetry System:
Dichromate	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	every batch
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

United Kingdom: ISOTRON PLC.: ISOTRON-MALAYSIA

Organization:

Organization: ISOTRON PLC.	Type: PRIVATE
Postal Address: Moray Road,Swindon, SN2 8XS, United Kingdom	
Region: Europe	Number of Irradiation Units: 6
Phone: 44/1793/601000	Fax: 44/1793/601040
Email:	Website : http://www.isotron.co.uk
Head: Mr. John Barker, Managing Director	Date of Response: 2001 / 7 / 25

Irradiation Unit:

Unit: Isotron-Malaysia	IAEA support: NO
Postal Address: Kuala Ketil Industrial Estate, Kuala Ketil, XX, Malaysia (MAL)	
Region: East Asia and the Pacific	Contact: Mr. Robin Kennedy
Manager: Mr. Robin Kennedy	Contact Email: robink@isotron.co.uk

Manufacturer: MDS Nordion Inc.	Type of Irradiator: tote irradiator
Commissioning year: 2001	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation:	Initial Activity: (kCi)
Last Replenishment:	Current Activity: (kCi)
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence: 2001, by Malaysian Atomic Energy Licensing Board
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002

Reference Dosimetry System:	**Routine** Dosimetry System:
Dichromate	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	every batch
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

United Kingdom: ISOTRON PLC.: ISOTRON-READING

Organization:

Organization: ISOTRON PLC.	Type: PRIVATE
Postal Address: Moray Road,Swindon, SN2 8XS, United Kingdom	
Region: Europe	Number of Irradiation Units: 6
Phone: 44/1793/601000	Fax: 44/1793/601040
Email:	Website : http://www.isotron.co.uk
Head: Mr. John Barker, Managing Director	Date of Response: 2001 / 7 / 25

Irradiation Unit:

Unit: Isotron-Reading	IAEA support: NO
Postal Address: Marcus Close, Reading, RG3 4EA, United Kingdom	
Region: Europe	Contact: Mr. Andy Dabal
Manager: Mr. Andy Dabal	Contact Email: andyd@isotron.co.uk

Manufacturer: H.S. Marsh, U.K.	Type of Irradiator: tote-carrier
Commissioning year: 1970	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation:	Initial Activity: (kCi)
Last Replenishment:	Current Activity: (kCi)
Source Storage: Dry	Source Rack : Rectangular
Source Hoisting : Hydraulic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence: 1968, by Department of Environment
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002

Reference Dosimetry System:	**Routine** Dosimetry System:
Dichromate	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	every batch
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

United Kingdom: ISOTRON PLC.: ISOTRON-SWINDON (BATCH)

Organization:

Organization: ISOTRON PLC.	Type: PRIVATE
Postal Address: Moray Road,Swindon, SN2 8XS, United Kingdom	
Region: Europe	Number of Irradiation Units: 6
Phone: 44/1793/601000	Fax: 44/1793/601040
Email:	Website : http://www.isotron.co.uk
Head: Mr. John Barker, Managing Director	Date of Response: 2001 / 7 / 25

Irradiation Unit:

Unit: Isotron-Swindon (Batch)	IAEA support: NO
Postal Address: Moray Road, Swindon, SN2 8XS, United Kingdom	
Region: Europe	Contact: Mr. Derek Haynes
Manager: Mr. Derek Haynes	Contact Email: derekh@isotron.co.uk

Manufacturer: Isotron	Type of Irradiator: Tote batch
Commissioning year: 1968	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation:	Initial Activity: (kCi)
Last Replenishment:	Current Activity: (kCi)
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Hydraulic	Product Movement : In totes
Operating Mode : Batch	

Operating licence: 1968, by Department of Environment
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002

Reference Dosimetry System:	**Routine** Dosimetry System:
Dichromate	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	every batch
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

United Kingdom: ISOTRON PLC.: ISOTRON-SWINDON (CONTINUOUS)

Organization:

Organization: ISOTRON PLC.	Type: PRIVATE
Postal Address: Moray Road,Swindon, SN2 8XS, United Kingdom	
Region: Europe	Number of Irradiation Units: 6
Phone: 44/1793/601000	Fax: 44/1793/601040
Email:	Website : http://www.isotron.co.uk
Head: Mr. John Barker, Managing Director	Date of Response: 2001 / 7 / 25

Irradiation Unit:

Unit: Isotron-Swindon (continuous)	IAEA support: NO
Postal Address: Moray Road, Swindon, SN2 8XS, United Kingdom	
Region: Europe	Contact: Mr. Derek Haynes
Manager: Mr. Derek Haynes	Contact Email: derekh@isotron.co.uk

Manufacturer: Isotron	Type of Irradiator: continuous pallet irradiator
Commissioning year: 1968	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi)
Initial installation:	Initial Activity: (kCi)
Last Replenishment:	Current Activity: (kCi)
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Hydraulic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence: 1968, by Department of Environment
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
A	A	25-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9002, EN 46002

Reference Dosimetry System:	**Routine** Dosimetry System:
Dichromate	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	monthly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	every batch
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: NO

Would accept IAEA fellows for training: NO
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

UNITED STATES OF AMERICA

United States of America: STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 17152

Organization:

Organization:	Type:
STERIS Corporation, STERIS Isomedix Services	PRIVATE
Postal Address:	
5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region:	Number of Irradiation Units:
North America	13
Phone:	Fax:
1/877/7837479	1/440/3927914
Email:	Website :
	http://www.steris.com
Head:	Date of Response:
Mr. Robert Moss, Vice President and General Manager	2001 / 10 / 8

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 17152	NO
Postal Address:	
7828 Nagle Avenue, Morton Grove, Illinois, 60053, United States of America	
Region:	Contact:
North America	Ms. Ruth Garcia
Manager:	Contact Email:
Ms. Ruth Garcia	ruth_garcia@steris.com

Manufacturer:	Type of Irradiator:
Unknown	ANSI/IAEA Category IV
Commissioning year:	Personnel:
1957	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	500
Initial installation:	Initial Activity: (kCi)
Last Replenishment:	Current Activity: (kCi)
2000	350
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	
Operating Mode :	
Batch	

Operating licence:
1974, by State of Illinois
Licence for:
processing of materials not deemed corrosive, flammable or explosive as defined in 10 CFR 36.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 17153

Organization:

Organization: STERIS Corporation, STERIS Isomedix Services	Type: PRIVATE
Postal Address: 5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region: North America	Number of Irradiation Units: 13
Phone: 1/877/7837479	Fax: 1/440/3927914
Email:	Website : http://www.steris.com
Head: Mr. Robert Moss, Vice President and General Manager	Date of Response: 2001 / 10 / 8

Irradiation Unit:

Unit: IAEA-NR 17153	IAEA support: NO
Postal Address: 1000 So. Sarah Place, Ontario, CA, 91761, United States of America	
Region: North America	Contact: Mr. Mike Au
Manager: Mr. Mike Au	Contact Email:

Manufacturer: MDS Nordion Inc.	Type of Irradiator: ANSI/IAEA Category IV
Commissioning year: 2000	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi) 4000
Initial installation: 2000	Initial Activity: (kCi) 1500
Last Replenishment:	Current Activity: (kCi) 1350
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence:
2000, by State of California
Licence for:
processing of materials not deemed corrosive, flammable or explosive as defined in 10 CFR 36.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 17154

Organization:

Organization: STERIS Corporation, STERIS Isomedix Services	Type: PRIVATE
Postal Address: 5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region: North America	Number of Irradiation Units: 13
Phone: 1/877/7837479	Fax: 1/440/3927914
Email:	Website : http://www.steris.com
Head: Mr. Robert Moss, Vice President and General Manager	Date of Response: 2001 / 10 / 8

Irradiation Unit:

Unit: IAEA-NR 17154	IAEA support: NO
Postal Address: 1000 So. Sarah Place, Ontario, CA, 91761, United States of America	
Region: North America	Contact: Mr. Mike Au
Manager: Mr. Mike Au	Contact Email:

Manufacturer: MDS Nordion Inc.	Type of Irradiator: ANSI/IAEA Category IV
Commissioning year: 2000	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi) 8000
Initial installation: 2001	Initial Activity: (kCi) 1500
Last Replenishment: 2001	Current Activity: (kCi) 2500
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence:
2000, by State of California
Licence for:
processing of materials not deemed corrosive, flammable or explosive as defined in 10 CFR 36.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 17155

Organization:

Organization: STERIS Corporation, STERIS Isomedix Services	Type: PRIVATE
Postal Address: 5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region: North America	Number of Irradiation Units: 13
Phone: 1/877/7837479	Fax: 1/440/3927914
Email:	Website : http://www.steris.com
Head: Mr. Robert Moss, Vice President and General Manager	Date of Response: 2001 / 10 / 8

Irradiation Unit:

Unit: IAEA-NR 17155	IAEA support: NO
Postal Address: 23 Elizabeth Drive, Chester, N.Y., 10918, United States of America	
Region: North America	Contact: Mr. Mark Thomas
Manager: Mr. Mark Thomas	Contact Email:

Manufacturer: MDS Nordion Inc.	Type of Irradiator: ANSI/IAEA Category IV
Commissioning year: 1993	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi) 6000
Initial installation: 1993	Initial Activity: (kCi) 1500
Last Replenishment: 2001	Current Activity: (kCi) 4500
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence:
1993, by State of New York
Licence for:
processing of materials not deemed corrosive, flammable or explosive as defined in 10 CFR 36.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 17156

Organization:

Organization: STERIS Corporation, STERIS Isomedix Services	Type: PRIVATE
Postal Address: 5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region: North America	Number of Irradiation Units: 13
Phone: 1/877/7837479	Fax: 1/440/3927914
Email:	Website : http://www.steris.com
Head: Mr. Robert Moss, Vice President and General Manager	Date of Response: 2001 / 10 / 8

Irradiation Unit:

Unit: IAEA-NR 17156	IAEA support: NO
Postal Address: Vista del Sl Industrial Park, 1435 Isomedix Place, El Paso, Texas, 79936, United States of America	
Region: North America	Contact: Mr. Victor Kach
Manager: Mr. Victor Kach	Contact Email: victor_kach@steris.com

Manufacturer: MDS Nordion Inc.	Type of Irradiator: ANSI/IAEA Category IV
Commissioning year: 1989	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi) 4000
Initial installation: 1989	Initial Activity: (kCi) 1500
Last Replenishment: 2000	Current Activity: (kCi) 4300
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence:
1989, by State of Texas
Licence for:
processing of materials not deemed corrosive, flammable or explosive as defined in 10 CFR 36.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: **STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 17157**

Organization:

Organization: STERIS Corporation, STERIS Isomedix Services	Type: PRIVATE
Postal Address: 5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region: North America	Number of Irradiation Units: 13
Phone: 1/877/7837479	Fax: 1/440/3927914
Email:	Website : http://www.steris.com
Head: Mr. Robert Moss, Vice President and General Manager	Date of Response: 2001 / 10 / 8

Irradiation Unit:

Unit: IAEA-NR 17157	IAEA support: NO
Postal Address: 2500 Commerce Drive, Libertyville, IL, 60048, United States of America	
Region: North America	Contact: Mr. Jerry Kriebel
Manager: Mr. Jerry Kriebel	Contact Email:

Manufacturer: MDS Nordion Inc.	Type of Irradiator: ANSI/IAEA Category IV
Commissioning year: 1999	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi) 6000
Initial installation: 1999	Initial Activity: (kCi) 1500
Last Replenishment: 2001	Current Activity: (kCi) 3600
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In totes
Operating Mode : Continuous	

Operating licence:
1999, by State of Illinois
Licence for:
processing of materials not deemed corrosive, flammable or explosive as defined in 10 CFR 36.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: **STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 17158**

Organization:

Organization:	Type:
STERIS Corporation, STERIS Isomedix Services	PRIVATE
Postal Address:	
5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region:	Number of Irradiation Units:
North America	13
Phone:	Fax:
1/877/7837479	1/440/3927914
Email:	Website :
	http://www.steris.com
Head:	Date of Response:
Mr. Robert Moss, Vice President and General Manager	2001 / 10 / 8

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 17158	NO
Postal Address:	
1800 Industrial Drive, Libertyville, IL, 60048, United States of America	
Region:	Contact:
North America	Mr. Mark Fraser
Manager:	Contact Email:
Mr. Mark Fraser	

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	ANSI/IAEA Category IV
Commissioning year:	Personnel:
1985	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	4000
Initial installation:	Initial Activity: (kCi)
1985	1500
Last Replenishment:	Current Activity: (kCi)
2001	3200
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Batch	

Operating licence:
1985, by State of Illinois
Licence for:
processing of materials not deemed corrosive, flammable or explosive as defined in 10 CFR 36.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: **STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 17159**

Organization:

Organization: STERIS Corporation, STERIS Isomedix Services	Type: PRIVATE
Postal Address: 5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region: North America	Number of Irradiation Units: 13
Phone: 1/877/7837479	Fax: 1/440/3927914
Email:	Website : http://www.steris.com
Head: Mr. Robert Moss, Vice President and General Manager	Date of Response: 2001 / 10 / 8

Irradiation Unit:

Unit: IAEA-NR 17159	IAEA support: NO
Postal Address: 9120 South 150 East, Sandy, Utah, 84070, United States of America	
Region: North America	Contact: Mr. Karl Hemmerich
Manager: Mr. Karl Hemmerich	Contact Email:

Manufacturer: MDS Nordion Inc.	Type of Irradiator: ANSI/IAEA Category IV
Commissioning year: 1985	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi) 4000
Initial installation: 1985	Initial Activity: (kCi) 1500
Last Replenishment: 2001	Current Activity: (kCi) 2000
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence:
1985, by State of Utah
Licence for:
processing of materials not deemed corrosive, flammable or explosive as defined in 10 CFR 36.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: **STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 17160**

Organization:

Organization:	Type:
STERIS Corporation, STERIS Isomedix Services	PRIVATE
Postal Address:	
5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region:	Number of Irradiation Units:
North America	13
Phone:	Fax:
1/877/7837479	1/440/3927914
Email:	Website :
	http://www.steris.com
Head:	Date of Response:
Mr. Robert Moss, Vice President and General Manager	2001 / 10 / 8

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 17160	NO
Postal Address:	
4405 Marketing Place, Groveport, Ohio, 43125, United States of America	
Region:	Contact:
North America	Mr. John Schweers
Manager:	Contact Email:
Mr. John Schweers	

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	ANSI/IAEA Category IV
Commissioning year:	Personnel:
1984	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	4000
Initial installation:	Initial Activity: (kCi)
1984	1500
Last Replenishment:	Current Activity: (kCi)
2001	3500
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Continuous	

Operating licence:
1999, by State of Ohio
Licence for:
processing of materials not deemed corrosive, flammable or explosive as defined in 10 CFR 36.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: **STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 17161**

Organization:

Organization:	Type:
STERIS Corporation, STERIS Isomedix Services	PRIVATE
Postal Address:	
5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region:	Number of Irradiation Units:
North America	13
Phone:	Fax:
1/877/7837479	1/440/3927914
Email:	Website :
	http://www.steris.com
Head:	Date of Response:
Mr. Robert Moss, Vice President and General Manager	2001 / 10 / 8

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 17161	NO
Postal Address:	
9 Apollo Drive, Whippany, N.J., 07981, United States of America	
Region:	Contact:
North America	Mr. Larry Winters
Manager:	Contact Email:
Mr. Larry Winters	

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	ANSI/IAEA Category IV
Commissioning year:	Personnel:
1984	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	4000
Initial installation:	Initial Activity: (kCi)
1984	1500
Last Replenishment:	Current Activity: (kCi)
2001	4200
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Batch	

Operating licence:
1984, by US NRC Region I
Licence for:
processing of materials not deemed corrosive, flammable or explosive as defined in 10 CFR 36.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: **STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 17162**

Organization:

Organization: STERIS Corporation, STERIS Isomedix Services	Type: PRIVATE
Postal Address: 5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region: North America	Number of Irradiation Units: 13
Phone: 1/877/7837479	Fax: 1/440/3927914
Email:	Website : http://www.steris.com
Head: Mr. Robert Moss, Vice President and General Manager	Date of Response: 2001 / 10 / 8

Irradiation Unit:

Unit: IAEA-NR 17162	IAEA support: NO
Postal Address: 435 Whitney Street, Northborough, MA, 01532, United States of America	
Region: North America	Contact: Mr. Jody Dean
Manager: Mr. Jody Dean	Contact Email:

Manufacturer: MDS Nordion Inc.	Type of Irradiator: ANSI/IAEA Category IV
Commissioning year: 1982	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi) 4000
Initial installation: 1982	Initial Activity: (kCi) 1500
Last Replenishment: 2000	Current Activity: (kCi) 2700
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement :
Operating Mode : Batch	

Operating licence:
2000, by State of Massachusetts
Licence for:
processing of materials not deemed corrosive, flammable or explosive as defined in 10 CFR 36.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: **STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 17163**

Organization:

Organization: STERIS Corporation, STERIS Isomedix Services	Type: PRIVATE
Postal Address: 5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region: North America	Number of Irradiation Units: 13
Phone: 1/877/7837479	Fax: 1/440/3927914
Email:	Website : http://www.steris.com
Head: Mr. Robert Moss, Vice President and General Manager	Date of Response: 2001 / 10 / 8

Irradiation Unit:

Unit: IAEA-NR 17163	IAEA support: NO
Postal Address: 2072 Southport Road, Spartanburg, S.C., 29306, United States of America	
Region: North America	Contact: Mr. Mike Clark
Manager: Mr. Mike Clark	Contact Email:

Manufacturer: MDS Nordion Inc.	Type of Irradiator: ANSI/IAEA Category IV
Commissioning year: 1978	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi) 4000
Initial installation: 1978	Initial Activity: (kCi) 1500
Last Replenishment: 2001	Current Activity: (kCi) 3000
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence:
1978, by State of South Carolina
Licence for:
processing of materials not deemed corrosive, flammable or explosive as defined in 10 CFR 36.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: **STERIS CORPORATION, STERIS ISOMEDIX SERVICES: IAEA-NR 1752**

Organization:

Organization: STERIS Corporation, STERIS Isomedix Services	Type: PRIVATE
Postal Address: 5960 Heisley Road,Mentor, Ohio, 44060, United States of America	
Region: North America	Number of Irradiation Units: 13
Phone: 1/877/7837479	Fax: 1/440/3927914
Email:	Website : http://www.steris.com
Head: Mr. Robert Moss, Vice President and General Manager	Date of Response: 2001 / 10 / 8

Irradiation Unit:

Unit: IAEA-NR 1752	IAEA support: NO
Postal Address: 184 Crown Court, Whitby, ON, L1N 7B1, Canada	
Region: North America	Contact: Mr. Dave Pearse
Manager: Mr. Dave Pearse	Contact Email:

Manufacturer: MDS Nordion Inc.	Type of Irradiator: ANSI/IAEA Category IV
Commissioning year: 1982	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi) 4000
Initial installation: 1982	Initial Activity: (kCi) 1500
Last Replenishment: 2001	Current Activity: (kCi) 3500
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Pneumatic	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence:
1982, by Canadian Nuclear Safety Commission
Licence for:
Processing of materials not deemed explosive or hazardous.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	15-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
G	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	A	3-40		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
C	A	10-35		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	A	3-20		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D	50-200		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO 9001

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	YES
Like to partecipate in IDAS:	NO
Would accept IAEA fellows for training:	NO
Would accept IAEA fellows for scientific visit:	NO
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64138

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64138	NO
Postal Address:	
10811 Withers Cove Park Drive, Charlotte, NC, 28273, United States of America	
Region:	Contact:
North America	James Ragan
Manager:	Contact Email:
James Ragan	jragan@iba-group.com

Manufacturer:	Type of Irradiator:
Steri Genics International, USA	Category IV
Commissioning year:	Personnel:
1994	0
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	14000
Initial installation:	Initial Activity: (kCi)
1994	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1994, by State of North Carolina
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64139

Organization:

Organization: Ion Beam Applications Inc.	Type: PRIVATE
Postal Address: 2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region: North America	Number of Irradiation Units: 15
Phone: 1/630/9281700	Fax: 1/630/9281701
Email:	Website : http://www.iba-worldwide.com
Head: Mark McLoughlin, President	Date of Response: 2001 / 11 / 14

Irradiation Unit:

Unit: IAEA-NR 64139	IAEA support: NO
Postal Address: 344 Bonnie Circle, Corona, CA, 91720, United States of America	
Region: North America	Contact: Steve Ellis
Manager: Steve Ellis	Contact Email: sellis@iba-group.com

Manufacturer: Steri Genics International, USA	Type of Irradiator: Category IV
Commissioning year: 1994	Personnel:
Radionuclide: Cobalt-60	Design Capacity: (kCi) 17000
Initial installation: 1994	Initial Activity: (kCi)
Last Replenishment:	Current Activity: (kCi)
Source Storage: Wet	Source Rack : Rectangular
Source Hoisting : Electric	Product Movement : In carriers
Operating Mode : Continuous	

Operating licence: 1994, by State of California
Licence for: irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64140

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64140	NO
Postal Address:	
3125 Wichita Court, Fort Worth, TX, 76140, United States of America	
Region:	Contact:
North America	Timothy Thompson
Manager:	Contact Email:
Timothy Thompson	tthompson@iba-group.com

Manufacturer:	Type of Irradiator:
Steri Genics International, USA	Category IV
Commissioning year:	Personnel:
1986	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	13000
Initial installation:	Initial Activity: (kCi)
1986	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1986, by State of Texas
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64141

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64141	NO
Postal Address:	
5900 Obata Way, Gilroy, CA, 95020, United States of America	
Region:	Contact:
North America	Patrick McCollough
Manager:	Contact Email:
Patrick McCollough	patrickm@gilroy.sterigenics.com

Manufacturer:	Type of Irradiator:
Steri Genics International, USA	Category IV
Commissioning year:	Personnel:
1999	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	3000
Initial installation:	Initial Activity: (kCi)
1999	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Cylindrical
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Continuous	

Operating licence:
1999, by State of California
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64142

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64142	NO
Postal Address:	
1003 Lakeside Drive, Gurnee, IL, 60031, United States of America	
Region:	Contact:
North America	Norman Pomerning
Manager:	Contact Email:
Norman Pomerning	normanp@iba-group.com

Manufacturer:	Type of Irradiator:
Steri Genics International, USA	Category IV
Commissioning year:	Personnel:
1996	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	9000
Initial installation:	Initial Activity: (kCi)
1996	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1996, by State of Illinois
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product: A	Process: A	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System: Alanine	**Routine** Dosimetry System: PMMA
Calibration irradiation performed by: an accredited calibration laboratory	Calibration irradiation performed by: industrial facility with transfer dosimeters
How often is the readout instrument calibrated? yearly	How often is the readout instrument calibrated? yearly
How often is dosimetry system calibrated? yearly	How often is dosimetry system calibrated? yearly
Traceable to: NIST	Traceable to: NIST

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64143

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64143	NO
Postal Address:	
1148 Porter Avenue, Haw River, NC, 27258, United States of America	
Region:	Contact:
North America	Randall Herrington
Manager:	Contact Email:
Randall Herrington	randallh@hawriver.sterigenics.com

Manufacturer:	Type of Irradiator:
Radiation Technology, Inc.	Category IV
Commissioning year:	Personnel:
1983	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	4000
Initial installation:	Initial Activity: (kCi)
1983	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	On pallets
Operating Mode :	
Continuous	

Operating licence:
1983, by State of North Carolina
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64144

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64144	NO
Postal Address:	
2311 Lincoln Avenue, Hayward, CA, 94545, United States of America	
Region:	Contact:
North America	Michael Bula
Manager:	Contact Email:
Michael Bula	michaelb@hayward.sterigenics.com

Manufacturer:	Type of Irradiator:
Steri Genics International, USA	Category IV
Commissioning year:	Personnel:
1997	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	2000
Initial installation:	Initial Activity: (kCi)
1997	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Batch	

Operating licence:
1997, by State of California
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64145

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64145	NO
Postal Address:	
108 Lake Denmark Road, Rockaway, NJ, 07866, United States of America	
Region:	Contact:
North America	Stanley Yap
Manager:	Contact Email:
Stanley Yap	stanleyy@rockaway.sterigenics.com

Manufacturer:	Type of Irradiator:
Radiation Technology, Inc.	Category IV
Commissioning year:	Personnel:
1970	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	3000
Initial installation:	Initial Activity: (kCi)
1970	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In carriers
Operating Mode :	
Batch	

Operating licence:
1970, by US Nuclear Regulatory Commission
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64146

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64146	NO
Postal Address:	
75 Tilbury Road, Salem, NJ, 08079, United States of America	
Region:	Contact:
North America	Stephen Ferraro
Manager:	Contact Email:
Stephen Ferraro	stephenf@salem.sterigenics.com

Manufacturer:	Type of Irradiator:
Radiation Technology, Inc.	Category IV
Commissioning year:	Personnel:
1986	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	4000
Initial installation:	Initial Activity: (kCi)
1986	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	On pallets
Operating Mode :	
Continuous	

Operating licence:
1986, by US Nuclear Regulatory Commission
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64147

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64147	NO
Postal Address:	
711 East Cooper Court, Schaumburg, IL, 60173, United States of America	
Region:	Contact:
North America	Norman Pomerning
Manager:	Contact Email:
Norman Pomerning	normanp@iba-group.com

Manufacturer:	Type of Irradiator:
Steri Genics International, USA	Category IV
Commissioning year:	Personnel:
1981	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	8000
Initial installation:	Initial Activity: (kCi)
1981	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1981, by US Nuclear Regulatory Commission
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
E	D			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64148

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64148	NO
Postal Address:	
210 Clyde Road, Somerset, NJ, 08873, United States of America	
Region:	Contact:
North America	Stanley Yap
Manager:	Contact Email:
Stanley Yap	stanleyy@rockaway.sterigenics.com

Manufacturer:	Type of Irradiator:
Steri Genics International, USA	Category IV
Commissioning year:	Personnel:
1999	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	3000
Initial installation:	Initial Activity: (kCi)
1999	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Batch	

Operating licence:
1999, by US Nuclear Regulatory Commission
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64149

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64149	NO
Postal Address:	
1401 Morgan Circle, Tustin, CA, 92780, United States of America	
Region:	Contact:
North America	Gary Abel
Manager:	Contact Email:
Gary Abel	garya@tustin.sterigenics.com

Manufacturer:	Type of Irradiator:
Steri Genics International, USA	Category IV
Commissioning year:	Personnel:
1979	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	8000
Initial installation:	Initial Activity: (kCi)
1979	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1979, by State of California
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64150

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64150	NO
Postal Address:	
1700 North Airport Road, West Memphis, AR, 72301, United States of America	
Region:	Contact:
North America	Patrick Hope
Manager:	Contact Email:
Patrick Hope	patrickh@westmemphis.sterigenics.com

Manufacturer:	Type of Irradiator:
Steri Genics International, USA	Category IV
Commissioning year:	Personnel:
2000	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	3000
Initial installation:	Initial Activity: (kCi)
2000	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
2000, by State of Arkansas
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	FWT-60
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NPL	NPL

Heard about IDAS : YES
Participate in IDAS: NO
Like to partecipate in IDAS: YES

Would accept IAEA fellows for training: YES
Would accept IAEA fellows for scientific visit: YES

Upgrading plans: information not available
Decommissioning plans: information not available

United States of America: ION BEAM APPLICATIONS INC.: IAEA-NR 64151

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 64151	NO
Postal Address:	
305 Enterprise Drive, Westerville, OH, 43081, United States of America	
Region:	Contact:
North America	Michael Hope
Manager:	Contact Email:
Michael Hope	michaelh@westerville.sterigenics.com

Manufacturer:	Type of Irradiator:
Steri Genics International, USA	Category IV
Commissioning year:	Personnel:
1984	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	5000
Initial installation:	Initial Activity: (kCi)
1984	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Electric	In carriers
Operating Mode :	
Continuous	

Operating licence:
1984, by US Nuclear Regulatory Commission
Licence for:
irradiation of products
Special Requirements:
currently licensed by State of Ohio

Processing Products:

Product: A	Process: A	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System: Alanine	**Routine** Dosimetry System: FWT-60
Calibration irradiation performed by: an accredited calibration laboratory	Calibration irradiation performed by: industrial facility with transfer dosimeters
How often is the readout instrument calibrated? yearly	How often is the readout instrument calibrated? yearly
How often is dosimetry system calibrated? yearly	How often is dosimetry system calibrated? yearly
Traceable to: NPL	Traceable to: NPL

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: ION BEAM APPLICATIONS INC.: NGS ENTERPRISES

Organization:

Organization:	Type:
Ion Beam Applications Inc.	PRIVATE
Postal Address:	
2015 Spring Road, Ste 650,Oakbrook, IL, 60523, United States of America	
Region:	Number of Irradiation Units:
North America	15
Phone:	Fax:
1/630/9281700	1/630/9281701
Email:	Website :
	http://www.iba-worldwide.com
Head:	Date of Response:
Mark McLoughlin, President	2001 / 11 / 14

Irradiation Unit:

Unit:	IAEA support:
NGS Enterprises	NO
Postal Address:	
Norte 7 S/N Esq. Av. Central, Tepeji del Rio de O. Edo. De Hidalgo, 42851, Mexico (MEX)	
Region:	Contact:
Latin America	Maria del Carmen Casar Lara
Manager:	Contact Email:
Cesar Moreno Garza	mcasar@iba-group.com

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	Category III and IV
Commissioning year:	Personnel:
1999	
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	5000
Initial installation:	Initial Activity: (kCi)
1999	
Last Replenishment:	Current Activity: (kCi)
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
1999, by Nucl. Safety & Safeguards National Council, Mexico
Licence for:
irradiation of products
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
B	C			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
F	B			
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: ISO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	industrial facility with transfer dosimeters
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

United States of America: FOOD TECHNOLOGY SERVICE, INC.: IAEA-NR 87126

Organization:

Organization:	Type:
Food Technology Service, Inc.	PRIVATE
Postal Address:	
502 Prairie Mine Road,Mulberry, Florida, 33860, United States of America	
Region:	Number of Irradiation Units:
North America	1
Phone:	Fax:
1/863/4250039	1/863/4255526
Email:	Website :
info@foodtechservice.com	http://www.foodtechservice.com
Head:	Date of Response:
Dr. Richard G. Hunter, President and CEO	/ /

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 87126	NO
Postal Address:	
502 Prairie Mine Road, Mulberry, Florida, 33860, United States of America	
Region:	Contact:
North America	Mr. Jim Jones
Manager:	Contact Email:
Mr. Jonathan Locke	jjones@foodtechservice.com

Manufacturer:	Type of Irradiator:
MDS Nordion Inc.	Carrier type
Commissioning year:	Personnel:
1992	12
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	4500
Initial installation:	Initial Activity: (kCi)
1991	3950
Last Replenishment:	Current Activity: (kCi)
2002	1300
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Hydraulic	In carriers
Operating Mode :	
Batch	

Operating licence:
1991, by Florida Department of Health
Licence for:
food, packaging materials, radiation sterilization of various medical supplies, fabric goods, documents and postal items.
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
A	A	-		
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m^3)	Amount/year: (t)

Quality Assurance Programm in use?
YES: Internal

Reference Dosimetry System:	**Routine** Dosimetry System:
Ceric Cerous	PMMA
Calibration irradiation performed by:	Calibration irradiation performed by:
an accredited calibration laboratory	in-house calibration facility
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
information not available	half year
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
information not available	every batch
Traceable to:	Traceable to:
NIST	NIST

Heard about IDAS :	NO
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	information not available
Decommissioning plans:	information not available

VIETNAM

Vietnam: RESEARCH AND DEVELOP. CENTER FOR RAD. TECHNOLOGY: IAEA-NR 69109

Organization:

Organization:	Type:
Research and Develop. Center for Rad. Technology	GOVERNMENT
Postal Address:	
Truong Tre Street, Linh Xuan Ward,Ho Chi Minh, XX, Vietnam (VIE)	
Region:	Number of Irradiation Units:
East Asia and the Pacific	1
Phone:	Fax:
84/8/8975922	84/8/8975921
Email:	Website :
vinagamma@hcm.fpt.vn; vinagamma@hcm.vnn.vn	http://www.vinagamma.com
Head:	Date of Response:
Tran Khac An, Director	2001 / 9 / 10

Irradiation Unit:

Unit:	IAEA support:
IAEA-NR 69109	YES: VIE/8/010
Postal Address:	
Truong Tre Street, Linh Xuan Ward, Ho Chi Minh, XX, Vietnam (VIE)	
Region:	Contact:
East Asia and the Pacific	Tran Khac An
Manager:	Contact Email:
Tran Khac An	vinagamma@hcm.fpt.vn; vinagamma@hcm.vnn.vn

Manufacturer:	Type of Irradiator:
Institute of Isotopes, Hungary	SVST Co-60/C
Commissioning year:	Personnel:
1999	22
Radionuclide:	Design Capacity: (kCi)
Cobalt-60	1000
Initial installation:	Initial Activity: (kCi)
1999	400
Last Replenishment:	Current Activity: (kCi)
	300
Source Storage:	Source Rack :
Wet	Rectangular
Source Hoisting :	Product Movement :
Pneumatic	In totes
Operating Mode :	
Continuous	

Operating licence:
1999, by Ministry of Science, Technology and Environment
Licence for:
Special Requirements:

Processing Products:

Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
A	A	25-	1800	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
B	B	9-	714.3 [conv.]	500
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
B	B	5-	5714.3 [conv.]	4000
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
C	B	9-	200	
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)
Product:	Process:	Dose Range: (kGy)	Amount/year: (m³)	Amount/year: (t)

Quality Assurance Programm in use?
NO

Reference Dosimetry System:	**Routine** Dosimetry System:
Alanine	ECB
Calibration irradiation performed by:	Calibration irradiation performed by:
industrial facility with transfer dosimeters	an accredited calibration laboratory
How often is the readout instrument calibrated?	How often is the readout instrument calibrated?
yearly	yearly
How often is dosimetry system calibrated?	How often is dosimetry system calibrated?
yearly	yearly
Traceable to:	Traceable to:
Other - JAERI	Other - Hungary

Heard about IDAS :	YES
Participate in IDAS:	NO
Like to partecipate in IDAS:	YES
Would accept IAEA fellows for training:	YES
Would accept IAEA fellows for scientific visit:	YES
Upgrading plans:	Speed-up of the goods transporation system in order to decrease irradiation time, cooling the irradiation room for irradiation of frozen foods.
Decommissioning plans:	information not available