NIGERIAN NUCLEAR REGULATORY AUTHORITY

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NNRA/AUT/-020

APPLICATION FOR AUTHORIZATION

Complete the Application form, the Table- List and Description of Radiation Sources (Page 2), provide details of your radiation safety programme in supplementary sheets following instructions as provided in pages 3-6 and return all together with the applicable fee to NNRA*

1. Name and Address of Applicant (the Legal Person)

Tel.
Fax
e-mail

2. Type of Application : New Authorization

Amendment of existing Authorization (No._____)
Renewal of existing Authorization (No._____)
Others specify_____

3. Purpose(s) for which the radiation source (s) are to be used

4. Address of Premises where the radiation sources will be used and/or stored

5. Occupation and nature of business carried out in the premises mentioned above (e.g. Industrial, Medical, Academic etc.)

6. Name and qualification of the Radiation Safety Officer (Include Tel. No.)

7. Name(s) and qualification Accredited Radiation Safety Adviser

8. Name and Address of Accredited Dosimetry Service Provider

SIGNATURE OF THE APPLICANT (The Legal Person)----------

NAME and POSITION (in bold capitals)----------Date----------

* *Revised Application Form 2005*

List and Description of Radiation Sources

Source Name[1]	Source Strength[2]	Source Form[3]	Manufacturer's Name and Address Date of Manufacture	Model	Serial Number	Standard[4]	Use of Source[5]	Type of Installation and Address of Use[6]

[1] For radioactive sources state the nuclide name and the atomic number (e.g. Co-60). For neutron and other accelerators state the target source
[2] For X-ray and other machines state the maximum kVp and mAs and timer if applicable, For radioactive sources use activity in GBq (1Ci = 37 GBq)
[3] State form of source (e.g. sealed, open, machine, neutron accelerator, LINAC, GIF, etc)
[4] State the certifying standard organization and number (e.g. ISO29299 or IEC, or SON…)
[5] State whether industrial, medical, educational, research etc.
[6] State whether the source is on fixed, temporary, mobile, permanent or detachable. State address of use for each source if different from that given in the form NNRA/AUTH/-020

SIGNATURE OF THE APPLICANT (The Legal Person)----------NAME (in bold capitals)----------Date----------

RADIATION SAFETY PROGRAMME

Provide the information below in separate sheets as an attachment to your application for authorization. This must be submitted in all cases of applications (new, amendment, renewal or modification of practice, structures and procedures).

Note that issuance of authorization would depend on proper documentation and assurance that you understand and have the capability to comply with regulatory requirements. The authorization process is usually completed after a pre-authorization inspection to the facility of the applicant to assess and verify submissions.

PART I FACILITIES AND EQUIPMENT

(a) Location of the Facility

Provide detailed information on the location of the facility for which authorization is needed.

(b) Layout of the Facility (Scale Plan)

Give a scale plan or sketch of the facility including the premises. The sketch should include location of the radiation source (e.g. storage facility or x-ray room) and the location where they are used if necessary. Indicate within the sketch your controlled and supervises areas. The plan should also show the purposes of all adjacent areas or rooms and indicate their distances from the source.

Give details of the construction materials including those of the ventilation systems and other outlets. In the case of unsealed sources, additional information on waste lines, laboratory facilities, surface finishing and ventilation shall be required.. For x-rays and other radiation producing machines give details in the sketches of all openings in the surrounding walls, conduits and ventilation ducts.

Indicate in your sketch points of maximum occupancy during operation adjacent to the facility. This may be needed for estimating dose rate and shielding efficiency.

Give an evaluation of the ground surface or other adverse natural or artificial conditions that may adversely affect the facility. (e.g. seismic history, strong wind, air crashes etc.)

(c) Safety Systems

Describe the overall safety systems, which will be used to ensure the safe operation of the equipment (e.g. the design features, defence in depth, shielding materials for cameras, source changers, filtration, collimation, etc). Give details of the safety systems for prevention of unauthorized access to equipment especially when activated.

(d) Shielding Assessment

Give an estimate of staff workload, patient workload, maximum setting and average machine workload and occupancy factors. Using these values show that the provided shielding is enough to reduce the dose from your source to one-tenth of the dose limit to workers and the public. Your evaluation should take care of scattering and effects of possible leakages. On the other hand, taking account of the shielding provided give the maximum dose rates in all areas of occupancy within and adjacent to the source during operation as determined or measured.

PART II RADIATION PROTECTION

(a) Organizational Structure

Describe your organizational and management control systems, including assignment of responsibilities and clear lines of authority related to radiation safety. Provide duties and responsibilities of the named Radiation Safety Officer (RSO).

List all members of staff that are classified as radiation workers and state their level of training and experience. Casual maintenance staff need not be included in this list.

(b) Radiation Protection Equipment

Give a list of all radiation monitoring equipment (e.g. survey meters, contamination meters, alarms, personal dosimeters etc.) available in your organization stating the following:

i) type

ii) model

iii) serial Number

iv) manufacturer's name and Address

v) calibration status (enclose calibration certificates)

List other radiation protection equipment (e.g. shielding gowns, gloves, etc).

(c) Personnel Monitoring and Safety

Provide your programme for monitoring your personnel, which should include:

i) type of radiation monitors used

ii) dosimetry service providers – attach your service agreement and schedules with the provider

iii) describe your policies for assigning radiation monitoring badges to workers, review of individual doses including reference levels and actions to be taken when values are exceeded

(d) Workplace Monitoring

Describe your monitoring policies and programs including methods, procedures and reference levels for:

i) classifying controlled and supervised areas.

ii) access control (ingress and egress as may be necessary)

iii) environmental and work place monitoring

(e) Training of Personnel

Describe your policies and programmes for insuring that radiation workers in your organization are properly trained and retrained especially in correct operating procedures and on how their actions may affect safety.

(f) Local Rules

Describe your policies for reviewing all personnel and workplace doses. State the reference levels (dose constraints) adopted by your organization and the actions you will take in case these doses are exceeded.

State how you will supervise your workers to ensure that all rules, procedures, protection measures and safety provisions are observed.

List all the warning signs that you have provided and their purposes. Indicate how you intend to transmit information to your workers and the public on the risk of exposures especially on

how you intend to inform pregnant or possibly pregnant and nursing women on the risk of exposure of embryos or infants

Describe your programme of health surveillance of the radiation workers based on general principles of occupational health and designed to assess the initial and continuing fitness of workers for their intended tasks.

(g) Quality Assurance

Describe the measurements you need to make to ensure that the radiation from your source meets all regulatory requirements (This should include leak test, beam alignment, optical congruency tests, source strength, energy tests, timer efficiency,

Describe your programme of periodic maintenance, testing and calibration for safety interlocks, dosimeters, proper functioning of machine parts in accordance with manufacturers' instructions (*Licensees must be ready to produce on demand all manufacturers' manuals and guides that should come with their equipment*).

Provide for the following systems of records

i) Personnel exposure records (including current and prior work histories)

ii) Patient's exposure parameters where applicable

iii) Records of dose to workers, area dose rate surveys and contamination levels

iv) Instrument test and calibration records

v) Records of leak test of source (s)

vi) Records of audits and reviews of radiation safety program

vii) Records of incidence, accident and investigations

viii) Records of equipment maintenance and repairs

ix) Records of facility modifications

x) Records of staff training including course contents

xi) Evidence of health surveillance including names of qualified practitioners

xii) Inventory of sources and source(s) movement (tracking) records

(All records are compulsory and users must be ready to produce on demand any of these records).

(h) Transportation of Radioactive Materials

If you will be involved in use of radioactive materials, describe your arrangements to ensure that the materials are transported according to set regulations. Give information on

i) package documentation and certification

ii) package receipt and transfer procedures

iii) details of shipping (including transport vehicle specifications) and transit arrangement outside site of use

(i) Waste Management

State and give evidence that you have made adequate arrangement to return sources to supplier when they are no longer in use.*(Note that is a pre-requisite for authorization of import of radioactive substances. So this arrangement must be made a priori.)*

(h) Emergency Procedure

Provide details of the procedures you will adopt to deal with emergencies (such as potential damage to sources, loss of safety control systems, loss of source shielding, accidental or overexposure to individuals, theft of sources, stuck sources, and other emergencies) including list of equipment for the emergency procedures.

Give details of how you will evaluate the hazards and other on-site and off-site consequences of emergencies

Give details of your contingency plans and how this will involve local emergency service providers (such as the police, security, fire fighters and medical services) and the NNRA (this should include contact phone numbers of the agencies)

In case of transportation off-site show how you will ensure that carriers are involved in your emergency plans.