Republic of the Philippines
Department of Science and Technology
PHILIPPINE NUCLEAR RESEARCH INSTITUTE
Commonwealth Avenue, Diliman, Quezon City

APPLICATION FOR A LICENSE OF PARTICLE ACCELERATOR FACILITY FOR THE PRODUCTION OF RADIONUCLIDE

INSTRUCTIONS: To complete this application, refer to Part 21 of the Code of PNRI Regulations and the corresponding Regulatory Guide for the Preparation of Application for a License of a Particle Accelerator Facilities for the Production of Radionuclide. Submit duplicate copies of the completed application form, with the specified application/license fee, and all required attachments, to the Nuclear Regulatory Division, Philippine Nuclear Research Institute, Commonwealth Avenue, Diliman, Quezon City.

I. This is an application for: (Check appropriate box)

- ☐ A. NEW LICENSE
- ☐ B. AMENDMENT TO LICENSE NO. _____
- ☐ C. RENEWAL OF LICENSE NO. _____

II. Type of License:

- ☐ A. PROVISIONAL PERMIT
- ☐ B. LICENSE TO CONSTRUCT
- ☐ C. LICENSE TO OPERATE

I. GENERAL INFORMATION

1.0 NAME AND MAILING ADDRESS OF APPLICANT.

Institution/Firm _____

Address _____

Director/Chairman of the Institution _____

Telephone & Fax Nos. _____

E-mail Address _____

2.0 PERSON TO BE CONTACTED ABOUT THIS APPLICATION.

Name _____

Position/Title _____

Address _____

Tel/Fax Number/E-mail Address _____

3.0 TYPES OF AUTHORIZATION AND GENERAL REQUIREMENTS

4.0 LOCATION AND TECHNICAL SPECIFICATION OF THE PARTICLE ACCELEARTOR FACILITY.

4.1 Location of Facility

Building _____ Room _____

Street _____

City _____ Province _____

Telephone and Fax Number _____

Attachment 1:

Particle Accelerator Facility Layout

		Attached	Remarks
4.1.1	Layout of the facility	☐	_____
4.1.2	Rooms/areas	☐	_____
4.1.3	Description of shielding design	☐	_____
4.1.4	Description of ventilation system	☐	_____

Attachment 2:

Laboratory Facility Layout

		Attached	Remarks
4.1.5	Layout of the facility	☐	_____
4.1.6	Rooms/areas	☐	_____
4.1.7	Description of shielding design	☐	_____
4.1.8	Description of ventilation system	☐	_____

4.2 Technical Specifications of the Particle Accelerator.

Manufacturer _____ Installation Date _____

Model Name _____ Serial Number _____

Types of Beam _____

Maximum Energy and Current _____

Maximum Particle Velocity/Acceleration _____

Accelerator Targets – for each accelerator target provide the following information:

Target Chamber				Maximum Beam Current (uA)	Bombardment Time (Min.)	Maximum EOB activity (GBq)
Part No.	Nuclear Reaction	Product	Material			

Attachment 3:
Information regarding the equipment (e.g., brochure) ☐ Attached ☐ NA Remarks_____

4.3. Facility and Equipment Description.

4.3.1 QA/QC Instrumentation

Type of Equipment	Manufacturer	Model	Serial Number	Supplier/ Distributor

4.3.2 Dose Calibrator and/or Other Equipment Used to Measure Dosages of Radionuclides

Type of Equipment	Manufacturer	Model	Serial Number	Supplier/ Distributor	Date of Last Calibration	Organization to Perform Calibration

4.3.3 Personnel Monitoring Instruments

a. Personnel Monitoring Badge

Type	Quantity	Type of Radiation Detected	Type of Monitoring	Frequency of Change	Name and Address of Supplier(s)

b. Direct Reading Dosimeters

Type	Quantity	Range	Date of Last Calibration	Name and Address of Supplier
Pocket Dosimeter				
Others				

4.3.4 Radiation Instruments

Type of Instrument	Manufacturer/ Distributor	Model	Serial Number	Sensitivity Range (mSv/hr)	Date of Last Calibration	Organization to Perform Calibration

Attachment 4:
Calibration Certificates of Radiation Survey Instruments ☐ Attached ☐ NA Remarks_____

5.0 PROOF OF LEGAL STATUS.

SEC Registration Number _____

Business Permit Number _____

Attachment 5:
Proof of applicant's incorporation, registration or charter (SEC registration or equivalent) ☐ Attached ☐ NA Remarks_____

For public institutions, specify the enabling legislation (Act):

_____

6.0 RADIONUCLIDE(S) PRODUCED AND PURPOSE(S) OF USE.

6.1 Radionuclide produced using the particle accelerator

Radionuclide (Element/Mass Number)	Max. Amount at Any One Time	Max. Total Activity in One Year

6.2 Radioactive Sources (e.g., Check Sources)

Radioactive Source (Element-Mass Number)	Manufacturer/Distributor	Model/Serial Number	Number of Units (Quantity)	Max. Amount to be Possessed at Any One Time (MBq)	Purpose of Use

Attachment 6:
Calibration Certificates of Radioactive Sources ☐ Attached ☐ NA Remarks_____

7.0 RADIATION WORKERS AND THEIR TRAINING AND EXPERIENCES

Pls. refer to Attachment A to C

Worker	Name	Trainings	Experiences
Radiation Safety Officer (RSO)			
Assistant RSO			
Authorized Operator			
Authorized Technical Staff			

8.0 SAFETY ANALYSIS REPORT (SAR)

Attachment 7:

1. INTRODUCTION

1.1 General Description ☐ Attached ☐ NA Remarks_____
1.2 Identification of Owner, Agents and Contractors ☐ Attached ☐ NA Remarks_____
1.3 Use of the Facility ☐ Attached ☐ NA Remarks_____

2. SITE SUITABILITY

2.1 Description of the Location of the Facility ☐ Attached ☐ NA Remarks_____
2.2 Description of Surroundings and Access Roads ☐ Attached ☐ NA Remarks_____

3. TECHNICAL SPECIFICATIONS OF THE ACCELERATOR

3.1 Particles Accelerated ☐ Attached ☐ NA Remarks_____
3.2 Acceleration System ☐ Attached ☐ NA Remarks_____
3.3 Beam Transport System ☐ Attached ☐ NA Remarks_____
3.4 Target-Irradiation Course ☐ Attached ☐ NA Remarks_____

4. FACILITY DESIGN

4.1	Facility Plans and Drawing	☐ Attached	☐ NA	Remarks_____
4.2	Classification of Adjacent Areas	☐ Attached	☐ NA	Remarks_____
4.3	Fire Protection System	☐ Attached	☐ NA	Remarks_____
4.4	Ventilation and Cooling Systems	☐ Attached	☐ NA	Remarks_____

5. ANALYSES OF RADIATION HAZARDS AND SAFETY FEATURES

5.1	Radiation	☐ Attached	☐ NA	Remarks_____
5.2	Radioactivity	☐ Attached	☐ NA	Remarks_____
5.3	Designation of Controlled Areas	☐ Attached	☐ NA	Remarks_____
5.4	Shielding Design and Calculations	☐ Attached	☐ NA	Remarks_____
5.5	Radiation Warning System	☐ Attached	☐ NA	Remarks_____
5.6	Radiation Damage to Components	☐ Attached	☐ NA	Remarks_____
5.7	Handling and Confinement of Radioactive Materials	☐ Attached	☐ NA	Remarks_____
5.8	Environmental Releases	☐ Attached	☐ NA	Remarks_____

6. NON-RADIATION HAZARDS

6.1	Description of any hazard associated with the operation of the accelerator other than radiation hazards	☐ Attached	☐ NA	Remarks_____

7. CONSTRUCTION REPORT

7.1	Construction Report	☐ Attached	☐ NA	Remarks_____

8. COMMISSIONING

8.1	Commissioning Plan	☐ Attached	☐ NA	Remarks_____
8.2	Commissioning Report	☐ Attached	☐ NA	Remarks_____

9.0 RADIATION SAFETY PROGRAM

9.1	Organization, Duties and Responsibilities of the Radiation Safety Committee	☐ Attached	☐ NA	Remarks_____
9.2	Designation of a Qualified Radiation Safety Officer (RSO) and Assistant RSO	☐ Attached	☐ NA	Remarks_____
9.3	Duties and Responsibilities of the RSO	☐ Attached	☐ NA	Remarks_____
9.4	Model ALARA Program	☐ Attached	☐ NA	Remarks_____
9.5	Personnel Monitoring Program	☐ Attached	☐ NA	Remarks_____
9.6	Training/Refresher Program	☐ Attached	☐ NA	Remarks_____
9.7	Procedure for Keeping Records of Radionuclide Produced	☐ Attached	☐ NA	Remarks_____

9.8 Quality Assurance Program	☐ Attached	☐ NA	Remarks_____
9.9 Procedure for Radiation Surveys (dose rate and contamination monitoring)	☐ Attached	☐ NA	Remarks_____
9.10. Model Procedure for Performing Testing of Fumehood	☐ Attached	☐ NA	Remarks_____
9.11 Calibration of Survey Instruments and Other Devices	☐ Attached	☐ NA	Remarks_____
9.12 Radioactive Waste Management	☐ Attached	☐ NA	Remarks_____
9.13 Operating Procedure	☐ Attached	☐ NA	Remarks_____
9.14 Emergency Plan including Conduct of Drill	☐ Attached	☐ NA	Remarks_____
9.15 Transport of Radioactive Materials			
9.16 Decommissioning Plan			
9.17 Recordkeeping	☐ Attached	☐ NA	Remarks_____

10.0 SECURITY OF PARTICLE ACCELERATOR FACILITY

10.1 Security Plan ☐ Attached ☐ NA Remarks_____

11.0 APPLICATION AND LICENSE FEES

APPLICATION FEE PhP_____
Official Receipt Number _____
Date _____

LICENSE FEE PhP_____
Official Receipt Number _____
Date _____

12.0 CERTIFICATION:

The applicant understands that all statements and representations made in this application are binding upon us. Further, the applicant and any official executing this certification on behalf of the applicant certify that this application is prepared in conformity with the applicable requirements in the Code of PNRI Regulations and that all information contained herein is true and correct to the best of our knowledge and belief.

_____
Signature of Certifying Official

_____
Typed or Printed Name of Certifying Official

_____
Title/Position of Certifying Official

_____
Date

13. ACKNOWLEDGEMENT

{Republic of the Philippines}
{ }

Before me, a Notary Public for and in the above jurisdiction, personally appeared the following persons:

Name _____ CTC No. _____ Date/Place Issued _____
Name _____ CTC No. _____ Date/Place Issued _____

both known to me to be the same persons who executed the foregoing application and all attachments, and acknowledged to me the same to be their free and voluntary act and deed.

_____
Notary Public

Doc. No. _____
Page No. _____
Book No. _____
Series of _____

Republic of the Philippines
Department of Science and Technology
PHILIPPINE NUCLEAR RESEARCH INSTITUTE
Commonwealth Avenue, Diliman, Quezon City

ATTACHMENT A

TRAINING AND EXPERIENCE OF PROPOSED RADIATION SAFETY OFFICER (RSO) AND ASSISTANT RSO

NAME: _____
NAME OF COMPANY: _____
EDUCATIONAL DEGREE: _____

1" x 1" ID Photo

1. TRAINING IN RADIATION SAFETY
(Enclose certificates of training and use additional sheets if necessary.)

Field of Training	Location of Training	Date of Training	Duration of Training (Hours)		
			Lecture	Laboratory	On-the-Job
a. Radiation Physics and Instrumentation					
b. Radiation Safety					
c. Mathematics Pertaining to the Use and Measurement of Radioactivity					
d. Security of Radioactive Sources/Facility					
e. Nuclear Regulations and Licensing					

2. EXPERIENCE WITH OPERATION AND USE OF PARTICLE ACCELERATOR

Specification (Brand Name, Model/Serial Numbers)	**Radioisotopes Produced** (Element & Mass No.)	**Where Experience Was Gained**	**Duration of Experience**	**Type of Use**

3. CERTIFICATES OF RELEVANT TRAININGS/EXPERIENCES (Submit certificates of relevant trainings & experience.)

Title of Training	Place of Training	Date of Training

I CERTIFY THAT THE INFORMATION GIVEN ABOVE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

_____
Signature of Proposed RSO/ARSO

Date: _____

Republic of the Philippines
Department of Science and Technology
PHILIPPINE NUCLEAR RESEARCH INSTITUTE
Commonwealth Avenue, Diliman, Quezon City

ATTACHMENT B

TRAINING AND EXPERIENCE OF PROPOSED AUTHORIZED OPERATORS

NAME: _____
NAME OF COMPANY: _____
EDUCATIONAL DEGREE: _____

1" x 1" ID PHOTO

1. TRAINING IN RADIATION SAFETY
(Enclose certificates of training and use additional sheets if necessary.)

Field of Training	Location of Training	Date of Training	Duration of Training (Hours)		
			Lecture	Laboratory	On-the-Job
a. Radiation Physics					
b. Radiation Safety					
c. Radiation Detection instrumentation					
d. Radiation Protection					
e. Security of Radioactive Sources/Facility					
f. Nuclear Regulations and Licensing					

2. EXPERIENCE IN THE OPERATION AND USE OF PARTICLE ACCELERATOR

Specifications (Brand Name, Model/Serial Numbers)	**Radioisotopes Produced** (Element & Mass No.)	**Max. Activity Produced** (Bq)	**Where Experience was Gained**	**Duration of Experience** (Months)

3. CERTIFICATES OF RELEVANT TRAININGS/EXPERIENCES (Submit certificates of relevant trainings & experience.)

Title of Training	Place of Training	Date of Training

I CERTIFY THAT THE INFORMATION GIVEN ABOVE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

_____
Signature of Proposed Authorized Operator

Date: _____

Republic of the Philippines
Department of Science and Technology
PHILIPPINE NUCLEAR RESEARCH INSTITUTE
Commonwealth Avenue, Diliman, Quezon City

ATTACHMENT C

TRAINING AND EXPERIENCE OF PROPOSED AUTHORIZED TECHNICAL STAFF

NAME: _____
NAME OF COMPANY: _____
EDUCATIONAL DEGREE: _____

1" x 1" ID PHOTO

1. TRAINING IN RADIATION SAFETY
(Enclose certificates of training and use additional sheets if necessary.)

Field of Training	Location of Training	Date of Training	Duration of Training (Hours)		
			Lecture	Laboratory	On-the-Job
a. Radiation Physics and Instrumentation					
b. Radiation Safety					
c. Radiation Detection & Measurement					
d. Security of Radioactive Sources/Facility					
e. Nuclear Regulations and Licensing					

2. EXPERIENCE IN QUALIY CONTROL, MANUFACTURE AND DISPENSE OF RADIOISOTOPE (List laboratory facilities and equipment)

Specifications (Brand Name, Model/Serial Numbers)	**Radioisotopes Produced** (Element & Mass No.)	**Max. Activity Produced** (Bq)	**Where Experience was Gained**	**Duration of Experience** (Months)

3. CERTIFICATES OF RELEVANT TRAININGS/EXPERIENCES (Submit certificates of relevant trainings & experience.)

Title of Training	Place of Training	Date of Training

I CERTIFY THAT THE INFORMATION GIVEN ABOVE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

Signature of Proposed Authorized Operator

Date: _____