Activities of Nuclear Instrumentation Lab at DAE

(1)Current Activities of Nuclear Instrumentation Lab

Nuclear Instrumentation Laboratory is running under Department of Atomic Energy. This Lab has been involved with IAEA/TC programme (MYA/0/007) and MYA/4/009. The current project is running under MYA/0/0009("Establishing an Information Communication Technology (ICT) based National Training Centre for Nuclear Instrumentation."

NI Lab has been established with 8 staff in Natmauk, DAE, Yangon, Myanmar. As a current situation, refurbishments, repair and maintenances of nuclear Instruments which are offer from Laboratories under DAE and other government departments. Moreover, carrying out research work for the development of nuclear technology and experimental projects for nuclear application fields in order to provide the departmental requirements.

In addition, the staff are studying , teaching and distributing the technical knowledge from training course supported by IAEA to technician and nuclear technological students in nuclear application fields. Current Activity in NI-Lab at DAE is as shown in Block Diagram.

(2) Main Objectives of NI Lab

-To enhance the manpower capability/ capacity in the Nuclear Instrument Laboratory.

-To train the staff on advanced technology as applied in modern nuclear instruments.

-To implement the plan for the refurbishment, repair and maintenance of nuclear instruments.

-To carry out research work for the development of nuclear technology in the country.

-To coordinate with other Government Departments and private sector for their nuclear technology application.

-To distribute technical knowledge for servicing the nuclear instruments and to train for Master of Engineering students in the field of repair and maintenance of nuclear instruments as follow as microcontroller/ processor based on nuclear instrumentation field.

(3)Repaired & Maintained of Instruments at NI Lab.

The staffs from NI Lab with the guidance of IAEA agency expert have done repair & maintenance work of the nuclear instrument and computer peripherial devices. The following repaired and maintained of instruments are from other laboratories and institution under DAE such as Radiation Protection Lab, Radiation Application Lab, X-Ray Lab & TLD section.

Repaired items of Computer Accessories & Devices

(1)Computer Monitor - 9 -nos

(2)System Unit		-	18	-nos
(3)Printer(Laser-1+Dotmatrix-3)		-	4	-nos
(4)Scannar	-	1	-no	
(5)UPS		-	4	-nos

Repaired items of Nuclear Instruments

(1)	Monitor-4	-	5	-nos
(2)	ROTEM	-	2	-nos
(3)	GPS	-	1	-no
(4)	Alert-4		- 2	-nos
(5)	Noninvasive X-ray Test Device	-	2	-nos
(6)	NERO X-ray Analyzer	-	1	-no
(7)	Low level α,β, counting System (Canberra-2404)		- 1	-no
(8)	Scintillometer (SPP-2NF)		- 1	-no
(9)	EEL Smoke Stain Reflectometer		- 1	-no
(10)	Beta Counter (Beckman)(YGH) Monitor+Printer	-	1	-no
(11)	Multiscan	-	1	-no
(12)	Amplifier(Tennelec)		- 2	-nos
(13)	NIM BIN module	-	1	-no

(14)	HVPS(Tennlec-908+Canberra)	-	2	-nos
(15)	TLD Irradiator (Bicorn 2210)	-	1	-no
(16)	LVPS(Jordanvalley)	-	1	-no
(17)	Oscilloscope (Tektronix)TDS-350	-	1	-no
(18)	Gamma Chamber(5000A, India)	-	1	-no

Refurbishments items of Nuclear Instruments

(1)	GM-counter Training Kit (K2645)	-	10	-nos
(2)	HV Transformer (input 9V-out 100-150V)	-	4	-nos
(3)	HVPS (for Nis)(=700V)	-	3	-nos
(4)	LVPS(1-30V,3A)	-	7	-nos
(5)	Amplifier	-	2	-nos
(6)	Linear PS (1,2-30V,1.5A)	-	8	-nos
(7)	Step down DC-DC converter (45V-2.2V)	-	10	-nos
(8)	Step up DC-DC converter(6V-36V)	-	7	-nos
(9)	Portable GM counter	-	1	-no
(10)	Laboratory used Scintillation Counting System	-	1	-no

(4)Current Research Work Plan for NI Lab

The Current research work in NI Lab are as follow:

(1) Portable GM counter with LCD display
(2) Laboratory used Nuclear Counting System
(3) PC based GM counter

(4) Laboratory used Scintillation Counting system

(5) Printed Circuit Board Design for Nuclear Instruments.

(5)Future Plan for NI Lab

Train the staff based on nuclear counting system to get hand on experience on job training programmes which are supported by IAEA expert for repair and maintenance of the complicated nuclear instrument such as X-Ray, XRF and TLD. Moreover, Technical Cooperation (TC) programme "Establishment of National ICT based Training Centre for Nuclear Instrumentation" is on-going project MYA/0/009 in order to support distance Learning for qualified staff and service in all aspect of maintenance, troubleshooting Nuclear Instruments and research in radiation application fields for our department and other institutions . In addition to establish an Medium Term ICT Tele Centre at DAE in order to upgrade and enhance the capacity of our Nuclear Instrumentation Lab.

(6)Conclusion

NI Lab is established with 8-staff at DAE. To get qualified staff, continuous learning nuclear electronic practically and theoretically are very important for Nuclear Instrumentation Lab. They have little experiences in technical knowledge for servicing the Nuclear Instruments & other related equipments. The staff of laboratory need to be trained more detail on the common use nuclear counting system such as α, β(or) γ counting system. The other Laboratories under DAE such as Radiation Protection Lab, Radiation Application Lab & X Ray Lab request to repair and maintenance of their equipments and instruments. The problems are poor in practical knowledge, lack of some equipments, some spare parts and components accessories which cannot be bought in our local markets. Some old aged machines cannot be worked and maintained systematically with local services. So, the staff need to

be trained the guidance of IAEA agency expert to get hand on experience on job training.

In addition, Quality Control and Quality Management (QC/QM) for nuclear instruments is need for upgrading the capacity of our lab as well as enhancing the role of the Department of Atomic Energy.