

VIETNAM ATOMIC ENERGY COMMISSION

**Scientific
council**

**DEPARTMENT OF
ADMINISTRATION AND
PERSONNEL**

**DEPARTMENT OF
INTERNATIONAL
CO-OPERATION**

**DEPARTMENT OF
PLANING AND R&D
MANAGEMENT**

**Institute for
Nuclear
Science and
Technique
(in Hanoi)**

**Institute for
Technology of
adioactive and
Rare Elements
(in Hanoi)**

**Nuclear
Research
Institute
(in Dalat)**

**Center for
nuclear
technique (in
Ho Chi Minh
City)**

**Center for
research and
development
of radiation
technology
(in Ho Chi
Minh City)**

REMARKABLE EVENTS ON NUCLEAR ACTIVITIES IN VIET NAM

- ❖ The Draft *Strategy for utilization of atomic energy for peace in Viet Nam* is completed and submitted to the MOST for consideration.
- ❖ The report of *Pre-FS on the first construction of NPP in Viet Nam* is completed and submitted to the MOI for consideration.
- ❖ The *First Draft Atomic Energy Law of Viet Nam* was completed in May 2004 and is being reviewed by concerned representatives from another Ministries and Branches.
- ❖ The *Vietnam Atomic Energy Association* has been established by the decision of Vietnam Government.

Eleven Projects in 8 FNCA's Fields

1. Utilization of Research Reactor

Radioisotope production

Application of Neutron Activation Analysis

Neutron beam Application and Research Reactor Operation

2. Application of Radioisotopes and Radiation for Agriculture

- *Mutation Breeding of drought resistant soybeans and sorghum*
- *Bio-fertilizer*

3. Application of Radioisotopes and Radiation for Medical Use

4. Industrial Application

- *Low energy accelerator application*

5. Radioactive Waste Management

6. Nuclear Safety Culture

- *Nuclear Safety Culture for Research Reactor*

7. Human Resources Development

8. Public Information of Nuclear Energy

Utilization Of Research Reactor

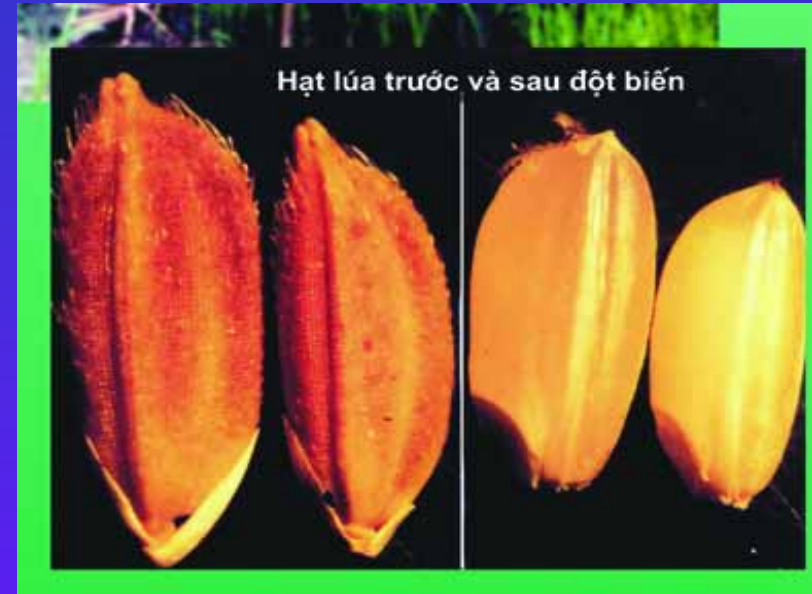
- **Radioisotope Production:** Procedures and relevant ^{99m}Tc generator design in the preparation of polymer zirconium compound (PZC) based ^{99m}Tc generators were successfully set-up
- **Neutron Activation Analysis:** *The air pollution study, The QA/QC and The development and application of k_0 -NAA*
- **Neutron Beam Utilisation (Neutron Scattering):** Natural rubber thermoplastic elastomer (NR-TPE) and copolymers have been prepared mainly by radiation cross-linking and grafting methods
- **Safe Operation and Maintenance of Research Reactors:** Core management, Ageing management, and Study on modification of reactor systems



Tủ hút trong dây chuyền sản xuất đồng vị và được chất phóng xạ

Application of Radioisotopes and Radiation for Agricultural Use

- Some promising rice varieties and lines such as DT36, DT37, DT21, Tamthom mutant, CM6, CM1 have been successfully created by mutation method
- Physical mapping technologies have been applied to analyse the inheritance of aromatic genes from aromatic varieties and to identify allelic relationships of aromatic genes to the collected aromatic rice varieties.
- Some desired soybean varieties have been successfully selected by atomic nuclear energy application like DT90 which was certified as national variety from 2002
- Mutant peanut varieties of DT332, S9 have been selected



Bio-fertilizer Sub-Project

The FNCA project on Bio-Fertilizer has been attributed in improve the production and application of bio-fertilizer through utilization of nuclear techniques in Vietnam



**Demonstration of Bio-fertilizer
for peanut in Vietnam**

Application of Radioisotopes and Radiation for Medical Use

- The Program of Concurrent Weekly Cisplatin and Radiotherapy for Advanced Cervical Cancer has been being conducted at National Cancer Institute (K Hospital) in Hanoi and Oncology Hospital in Ho Chi Minh City. There are eight patients being treated under the program.
- The Protocol of concurrent chemo-radiotherapy of nasopharyngeal carcinoma is initiated and implemented at the two hospitals.



Bảo dưỡng máy xạ trị Co-60 tại Bệnh viện K

Public Information of Nuclear Energy

- Four exhibitions on Peaceful Uses of Nuclear Power from 2001 to 2003 and one international exhibition on Nuclear Power Technology in 2004 were held in Vietnam.



Lễ khai mạc triển lãm sử dụng Năng lượng nguyên tử vì mục đích hoà bình tại Tp. Hồ Chí Minh, 5/2003



- Ministerial conference of FNCA countries was held in November 2004 in Vietnam .
- The FNCA PI Project Leaders Meeting was held in Vietnam in 2003. During the meeting, two seminars on the role of nuclear energy for energy security and environmental protection, and nuclear application in industry were held.
- The VAEC actively participated in Vietnam Technology and Equipment Market organized every year by MOST to introduce and publicize the application of nuclear energy.



Joint Survey of Understanding and Interest in Radiation among high school students was conducted to know at which level Vietnamese young generations understand the application and usefulness of radioisotopes and radiation



VAEC opened a showroom on the application of nuclear energy for the general public

Vietnam Atomic Energy Commission (VAEC) has a good cooperation with Mass Media such as Vietnam Television (VTV), the Voice of Vietnam, and some national prestigious newspapers to publicize the application of nuclear science and technology.



Radioactive Waste Management

A survey for radioactive level of 5 heavy mineral sands processing enterprises was conducted. Based on survey results, radiation protection measures at these enterprises have been recommended.

The amount of TENORM accumulated at Phung facility since 1991 was treated, packed into 200 litre drums and kept in a newly-built interim storage facility



Nuclear Safety Culture

The sixth FNCA workshop on Nuclear Safety Culture was held in Dalat, Vietnam, 14-17 January 2003.



Two national workshops were conducted about the recent status on safety culture implementation in the world, the FNCA activities on safety culture, the relationship between national culture and nuclear safety culture, the human factor in nuclear technology implementation, and the basic conception on securing safety for installation of nuclear power plant in Vietnam .

Human Resource Development

- ❖ Survey of Basic Data on Human Resources Development (HRD) in nuclear field in Vietnam has been completed and sent to Japan for further evaluation.
- ❖ Two national training courses per year on radiation protection and measurement were organized with the assistance of Japanese experts.



Hội thảo khoa học về phát triển nguồn nhân lực



Khánh thành Trung tâm Đào tạo về an toàn bức xạ tại Hà Nội
Do Viện NLNT Nhật Bản giúp đỡ



Lớp huấn luyện về an toàn bức xạ tại Hà Nội



Lễ trao học bổng của Viện NLNTVN cho Sinh viên ngành công nghệ hạt nhân

Industrial Application

- Vietnam actively participated in the FNCA Project on Application of Electron Accelerator.
- A workshop on the application of radiation processing in industry in Vietnam held in November 2003 in Ho Chi Minh City.
- Two research projects on the modification of agricultural and medical materials by EB machine have been conducted.



Khảo sát dịch chuyển sa bồi các vùng cửa sông, ven biển



Dây chuyền thiết bị chiếu xạ TP. Hồ Chí Minh

**Thank you
for your attention**