

**REGIONAL WORKSHOP ON COMMUNICATION AND CONSULTATION
REGARDING ISSUES RELATED TO RADIOACTIVE WASTE MANAGEMENT
(Thailand, 25th – 28th October 2022)**

**Communication and Radioactive Waste Management
in Vietnam**

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1. The situation of radioactive waste management in Vietnam
2. Public Information & Communication Activities
3. The organisations involved in the aspects of communication and consultation?
4. The main challenges Vietnam face when dealing with RWM?
5. What is planned to address them?
6. Conclusions

1. The situation of RWM in Vietnam

▶ Generating of Radioactive Wastes

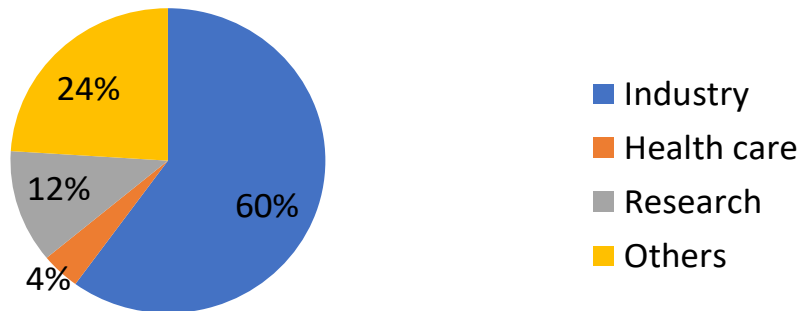
The majority of radioactive waste are arising from:

- The activity of nuclear research reactor, the production and the use of radioisotopes;
- Uranium waste created in the uranium processing;
- Radioactive waste contained radioactive elements after monazite treatment;
- Radioactive waste from research and education activities
- The remaining of radioactive waste comes from radioactive sources used and disused in research, industry and medical profession;

1. The situation of RWM in Vietnam

Viet Nam supports the rights and responsibilities of states in the peaceful use of nuclear energy, with particular emphasis on ensuring nuclear safety and security.

Distribution of Radioactive Sources



❖ Radioactive Sources (as of September 2020)

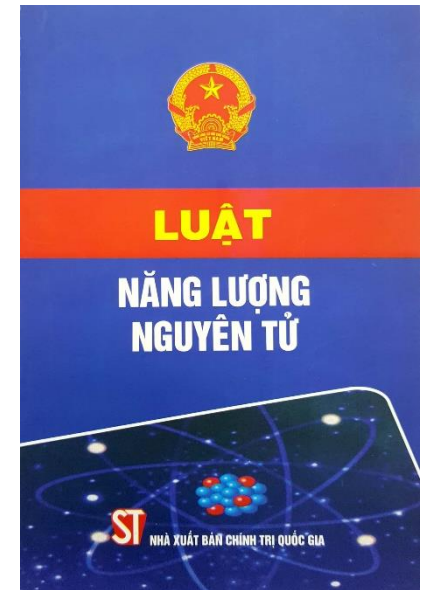
- 3.707 radioactive sources are in use (4% in health care, 60% in industry, 12% in research and 24% in other applications);
- ~ 1.300 radioactive sources are being kept in storage;
- In addition, there are 909 sources of Ir-192 and 913 used radioactive sources that have been conditioned;
- Sources of category 1: 68 sources are in use, 9 sources are being kept in storage.

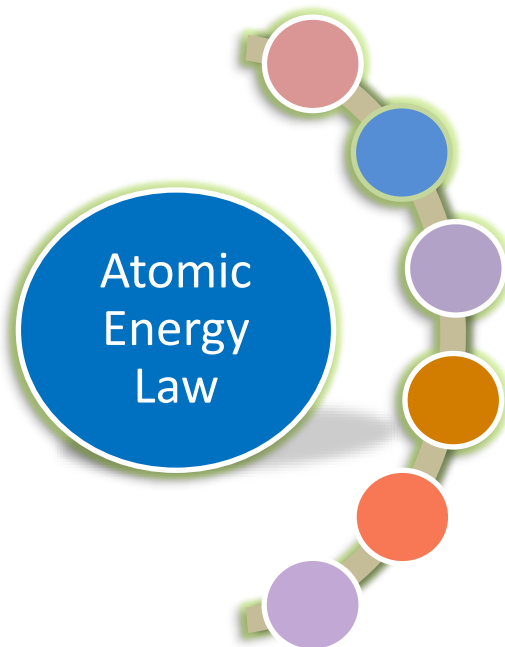
1. The situation of RWM in Vietnam

RWM Policy

On the basis of atomic law, the government of the Socialist Republic of Viet Nam set the policy about the peaceful use of atomic energy and radioactive waste management as following:

- Radioactive waste must be controlled and safety managed in accordance with internationally agreed principles.
- Radioactive wastes need to be classified and then treated by suitable methods before conditioning and disposal
- Minimization of radioactive waste generation.





General Regulations

- Decree No. 7/2010/ND-CP dated Jan 25, 2010 detailing the **implementation of some provisions in Atomic Energy Law**;
- Decree 107/2013/ND-CP date Sept 20, 2013 on **sanctioning of administrative violations** in the field of atomic energy;
 - Circular No. 08/2010/TT-BKHCHN dated July 22, 2010 on **Guiding on declaration and Licensing** of Radiation jobs and radiation worker's certificates;
 - Circular No. 287/2016/TT-BTC dated Nov 15, 2016 on **Fees and charges** in atomic energy field;
 - Circular 19/2010/TT-BKHCHN dated 28/12/2010 on **inspection** in atomic energy field;
- Circular No. 31/2007/TT-BKHCHN dated Dec 31, 2007 on **working and resting time** for radiation workers.

1. The situation of RWM in Vietnam

► **RWM facilities in Vietnam:**

- The system for RWM at the Dalat Nuclear Research Institute (DNRI), in the South of Vietnam

The main radwaste producer in Vietnam is DNRI. Storage of radioactive waste from the reactor operation and research activities of the Institute and disused radioactive sources of facilities/companies

- The radioactive waste facilities at Phung, Hanoi

In this facilities, all radioactive waste from ITRRE and other Institute in the North of Vietnam are collected, classified, treated and stored in interim storage.

Da Lat Research Reactor

- **1976:** Establishment of the Dalat Nuclear Research Institute (NRI), based on the Research Reactor (RR) which was built and started operation in 1963 (TRIGA Mark II reactor, US)
- **1979 - 1983:** reinstalled and commissioned (500 kW, Russia), Establishment of National Atomic Energy Institute (VINATOM now)
- **1984:** Operation of Dalat Nuclear Research Reactor (DNRR)
- **In 2006-2007:** I&C change; and core conversion from HEU to LEU (partly) in the framework of RERTR Program.
- **In 2011:** Full conversion
- **7/2013:** Repatriated spent HEU



- In 1982, when Dalat reactor was reconstructed, one new combined technology system for low level radwaste management was constructed. The existing system consists of three main parts:
 - ✓ Liquid radioactive waste treatment station
 - ✓ Station for conditioning solid RadWaste
 - ✓ Interim storage in the site of reactor

The radioactive waste facilities at Phung, Hanoi (ITRRE)



In general, the amount of radioactive wastes in Vietnam are small, they mainly are arising from radioisotope applications, the laboratories of uranium processing and the operation of research reactor.

2. Public Information & Communication Activities

Exhibition on Peaceful Utilization of Atomic Energy



Hanoi Nuclear Power Expo



Hanoi Nuclear Power Expo

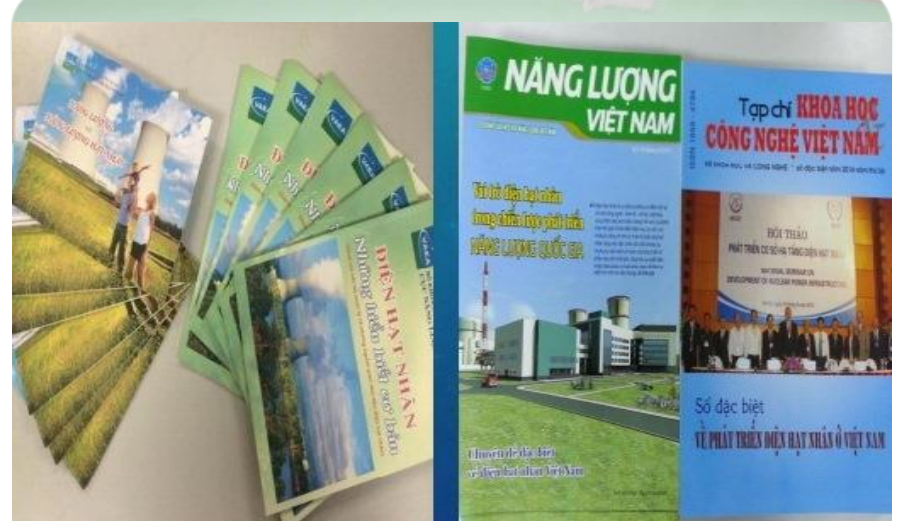
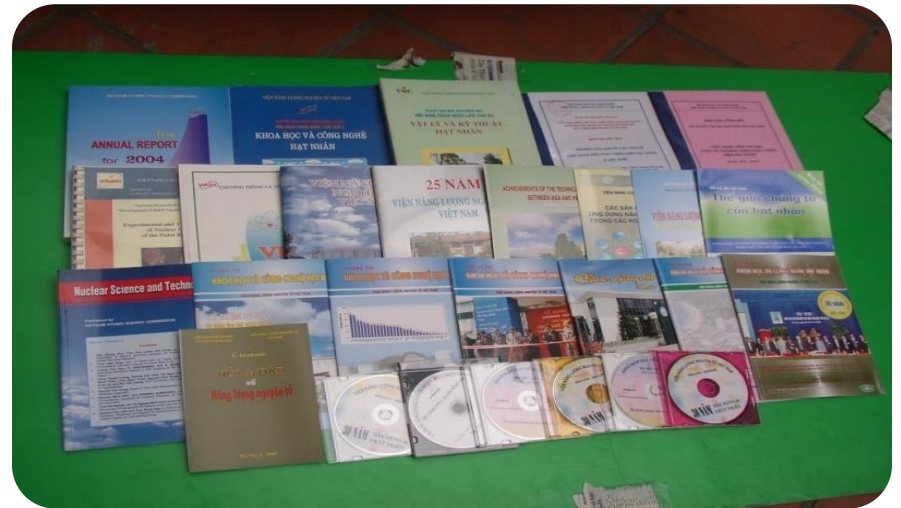


Cooperation with media

- Providing information to media (press release, press conference,...)
- Inviting reporters to participate in the Workshops, Training courses, facility tours,...
- Media training for spokespersons



Publications on atomic energy



Websites



Conferences, workshops

➤ **National Nuclear Regulatory Conference (VARANS)**

Held every two years. This is a big event of VARANS to inform and consult with its stakeholders.

The 3rd National Nuclear Regulatory Conference takes place in 7/2018 with 400 domestic and international delegates.

➤ **National Conference on Nuclear Science and Technology (VINATOM)**

Held every two years. Objective: Presentation and exchanging information of the new results and achievements on scientific researches, technological applications, education and training in the field of atomic energy.

The 12rd National Conference on Nuclear Science and Technology took place in 2017 with 400 domestic and international delegates (2 plenary sessions and 6 sessions on specific issues).

Conferences, workshops

- **Workshops on information and dissemination on radiation and nuclear safety (VARANS)**

Target groups: local state management agencies (DOSTs), radiation facilities, especially facilities using radioactive sources

- **Workshops on stakeholder involvement and PI for Utilization of Atomic Energy (VAEA)**

Target groups: relevant national organizations and ministries, local authorities, local residents, media, students,...

Information Centre on Nuclear Energy

- Opened in 2012, funded by Russia.
- Located at Hanoi University of Science and Technology
- Exhibition room, 3D projection room, dosimeters, reactor models, touch screen,...



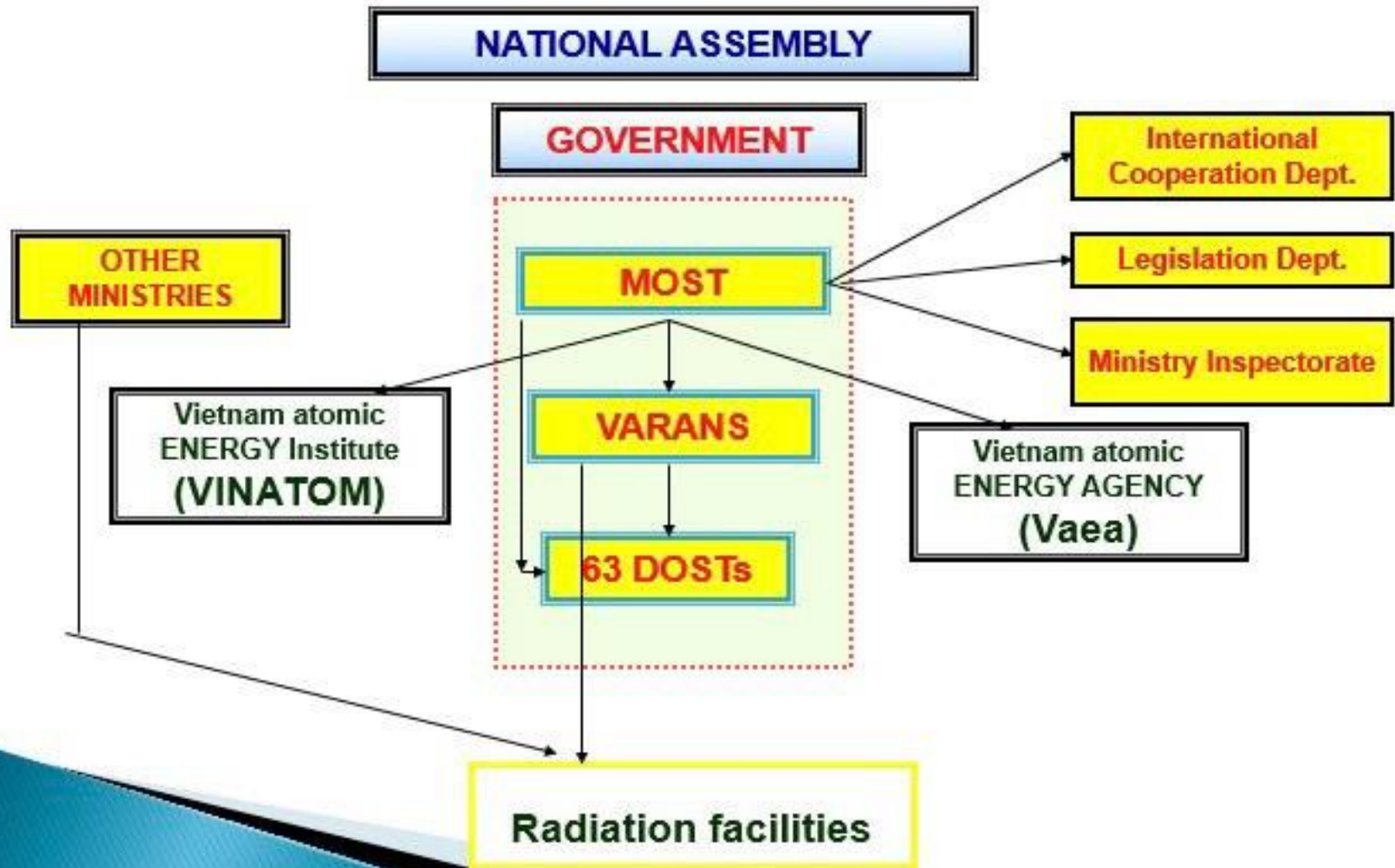
Information Centre on Nuclear Energy

- Audience: students, pupils, researchers, scientists, reporters, public,...



4. The organisations involved in the aspects of communication and consultation

State Management System



National Situation – Organizational Structure in Atomic Energy Filed

MOST shall take responsibility for the unified state management in the field of atomic energy

Under MOST:

VARANS: Regulatory body for Safety, Security and Safeguards

VINATOM: R&D institute

VAEA: R&D management

Vietnam Atomic Energy Institute



Ministry of Science and Technology (MOST)

Vietnam Atomic Energy Agency (VAEA)

Vietnam Atomic Energy Institute (VINATOM)

Vietnam Agency for Radiation and Nuclear Safety (VARANS)

Dept. of International Cooperation

Scientific Council

Dept. of Planning & R&D Management

Administration Office

Nuclear Training Center (NTC, Hanoi)

Hanoi Irradiation Center (HIC, Hanoi)

Institute for Technology of Radioactive and Rare Elements (ITRRE, Hanoi)

Institute for Nuclear Science and Technology (INST, Hanoi)

Nuclear Research Institute (NRI, Dalat)

Center for Application of nuclear techniques in industry (CANTI, Dalat)

Center for Nuclear Technique (CNT, HCMC)

Research and Development Center for Radiation Technology (VINAGAMMA, HCMC)

Center for Non-destructive evaluation (NDE, Hanoi)

VARANS is an agency under the Ministry of Science and Technology (MOST) with the duty of assisting the Minister in the State management on radiation and nuclear safety & control. Being a regulatory body, VARANS has the following responsibilities related to radioactive waste management:

1. To develop regulations on radioactive waste management.
2. To perform the State management of radioactive wastes.
3. To participate in the execution of the International Treaties and other international agreements on radiation and nuclear safety.

4. The main challenges Vietnam face when dealing with RWM



- Currently, radioactive waste and used radioactive sources are stored at many locations across the country. These facilities are not designed with long-term radioactive waste management.
- Such storage is not in accordance with international standards, especially under the General Convention on Safety of spent fuel management and safety of radioactive waste management to which Vietnam has acceded (2013) under which the country must have a national storage or landfill facility with regulatory management requirements to reduce risk.
- The absence of a national radioactive waste storage facility has forced radioactive waste facilities to store this waste under limited safety and security conditions.

4. The main challenges Vietnam face when dealing with RWM



- Building such a storage facility would be very expensive and its management could take hundreds of years.
- Siting for national radioactive waste storage facility.
- Residents
- Public experts in RWM.

Decision No.2376/QĐ-TTG dated 28. Dec 2010 on Approval of the Planning Orientation on Storage and Disposal Sites for Radioactive Waste up to 2030, with vision to 2050

Main contents:

Method of radioactive waste storage:

- The State (Vietnam) manage uniformly radioactive waste and invests in construction of the national repository for storing and disposal of radioactive waste.
- The sites of radioactive waste storage and disposal should ensure the safety for residents and environment.
- Low and intermediate level wastes (>100days half life and <30 years half life) transported to the national repository for near surface disposal.
- High level waste and used sources with high radioactive and long half-life must be stored in the national repository.
- Spent nuclear fuel shall be stored in the cooling pool of the NPP for 30-50 years waiting for further treatment depending on the development level of nuclear science and technology in the world and national policy for RWM

Decision No.2376/QĐ-TTG dated 28. Dec 2010 on Approval of the Planning Orientation on Storage and Disposal Sites for Radioactive Waste up to 2030, with vision to 2050

Main contents:

Implementation schedule:

- Phase 2020-2030: Operation of the national repository for low and intermediate level waste; Focusing on management of the spent and unused high level radioactive sources at the national repository.
- Orientation from 2030-2050: Operation of national repository for low and medium level waste, spent radioactive sources; Planning policy on handling spent nuclear fuel, researching to investigate the permanent disposal sites for nuclear waste and spent high activity radioactive sources in stable geological layers that is considered to be an appropriate

5. Plans

- Enhancing communication skills.
- Developing communication plans involved stakeholders.

6. Conclusions

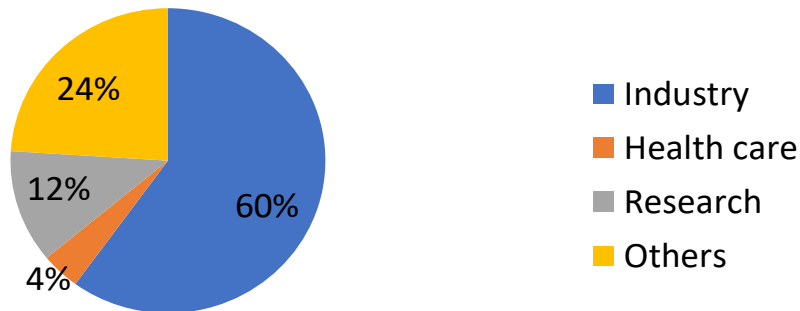
- Vietnam has issued legal documents and regulations to manage radioactive sources;
- Legal documents and regulations in the field of atomic energy are still incomplete and have shortcomings;
- Radiation safety and nuclear security at some facilities using radioactive sources have not been adequately paid attention, creating the risk of loss of radioactive sources and nuclear materials
- Vietnam does not have a national facility for managing centrally disused radioactive sources making difficulties for regulatory agencies;
- Vietnam needs to build a national facility for storing and managing disused radioactive sources to ensure safety and security in the field of atomic energy.
- The guidelines of IAEA and experience of countries on the construction, management and operation of disused radioactive source storage facilities should be studied.

Thank you for your attention!

1. Peaceful use of nuclear energy in Viet Nam

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Distribution of Radioactive Sources



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