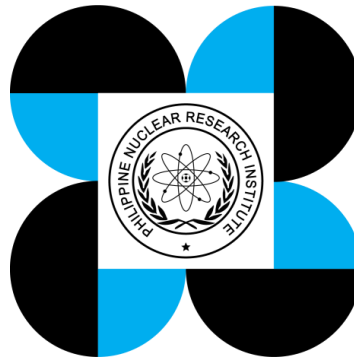


Nuclear Fuel Cycle and Radioactive Waste Management in the Philippines: Status and Way Forward



Regional Workshop on the Development of National
Strategies and Regulatory Requirements for Spent Fuel
Management

September 11-15, 2023 | Beijing, China



Philippine Research Reactor 1



PNRI Radioactive Waste Management Facility

Upcoming activities

- Environmental Impact Assessment (EIA) to comply with the requirements of Code of PNRI Regulations Part 28: Licensing Requirements for Predisposal Management of Radioactive Waste Facilities and Activities.
- Safety Case and Safety Assessment for the renewal of the authorization which will expire in July 2024.



BATAAN NUCLEAR POWER PLANT

Southeast Asia's first fully-constructed nuclear power plant

3 exact operating models for more than 30 years – Korea, Slovenia, and Brazil



BATAAN NUCLEAR POWER PLANT



COST

US \$ 2.3 Billion



NOT 1 WATT PRODUCED

Completed but closed nearly 35 years ago, mainly due to "safety reasons"



SAFETY ISSUE

Situated close to (or on) a "dormant" volcano and a fault – the recurring reason given why the plant was **mothballed**.



COST OF MAINTENANCE

US \$ 1 Million/year





Creation of the Nuclear Energy Program Inter-Agency Committee

Executive Order No. 116, s. 2020

Signed by former president Rodrigo Duterte on **24 July 2020**,

“Directing a Study for the Adoption of a National Position on Nuclear Energy Program, Constituting a Nuclear Energy Program Inter-Agency Committee, and for Other Purposes”



NEP Inter-agency Committee

Subcommittees (SC)

- SC 1: Management, Policies, Financing, and Procurement
- SC 2: Nuclear Security, Safety, Safeguards and Radiation Protection
- SC 3: Legal and Regulatory
- SC 4: Human Resource and Stakeholder Involvement
- SC 5: Siting, Environment, and Emergency Plan
- **SC 6: Nuclear Fuel Cycle and Radioactive Waste Management**



BUILDING A NATIONAL POSITION



- On **December 18, 2020**, the NEP-IAC submitted a comprehensive report to the President and the Proposed Executive Order adopting a **National Position for a Nuclear Energy Program**
- On **February 28, 2022**, President Rodrigo Duterte signed **Executive Order 164** that outlines the government's position for the **inclusion of nuclear energy in the Philippines' energy mix**, taking into account economic, political, social, and environmental objectives.



MALACAÑAN PALACE
MANILA

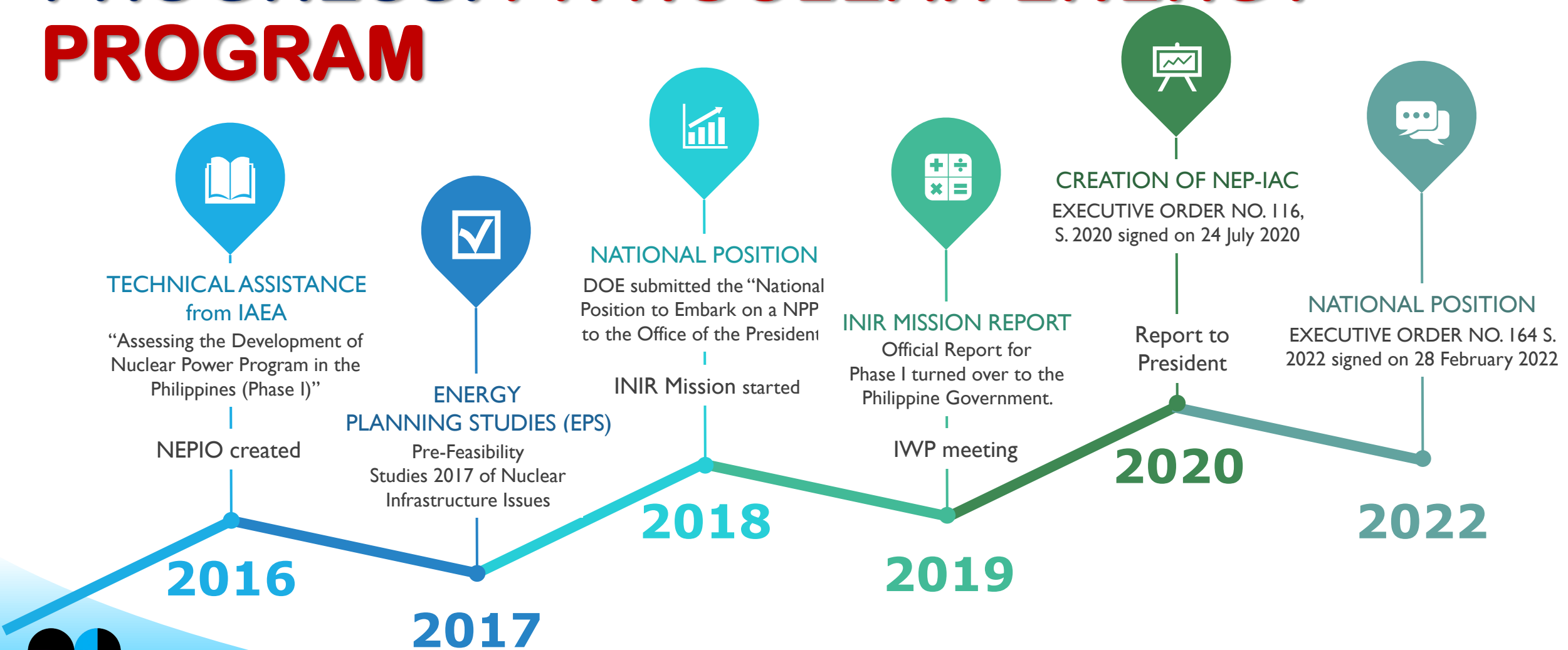
BY THE PRESIDENT OF THE PHILIPPINES

EXECUTIVE ORDER NO. 164

ADOPTING A NATIONAL POSITION FOR A NUCLEAR ENERGY
PROGRAM, AND FOR OTHER PURPOSES



PROGRESS: PH NUCLEAR ENERGY PROGRAM



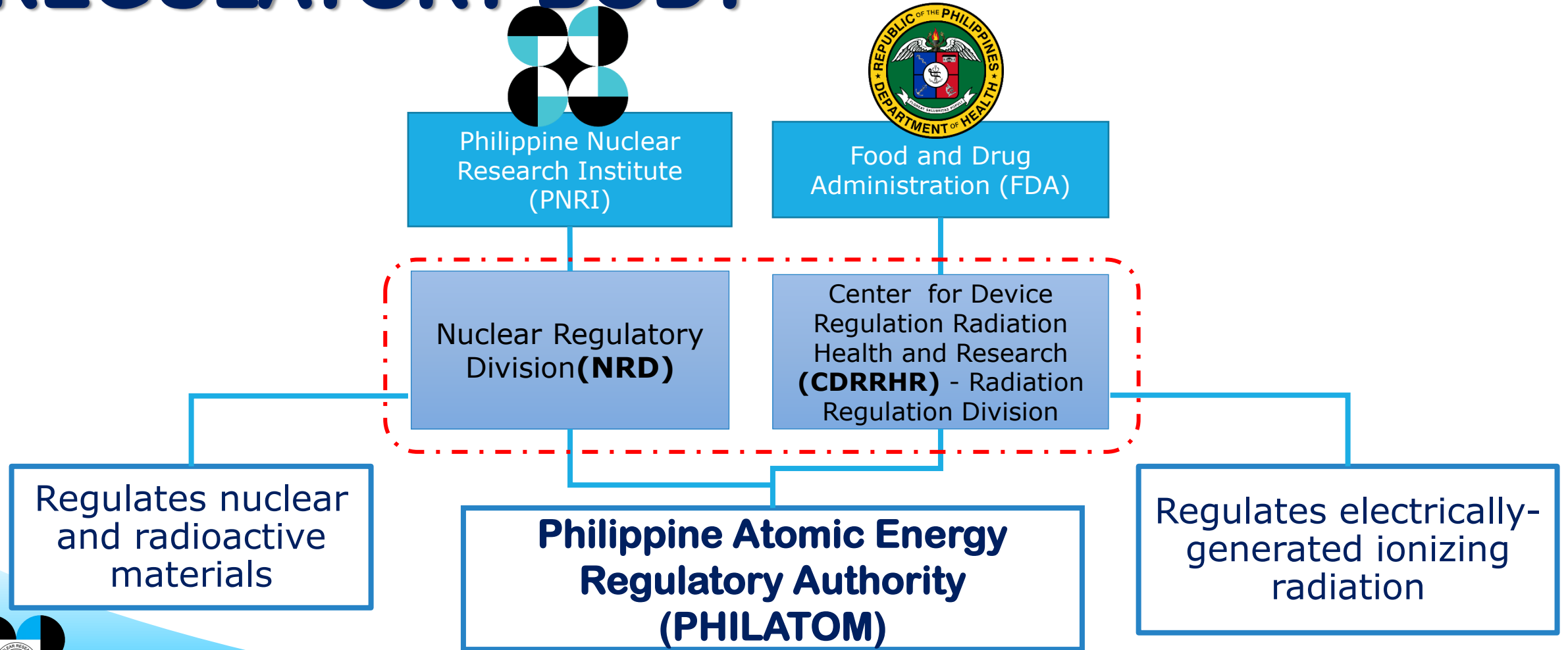
NUCLEAR ENERGY IN THE CURRENT ADMINISTRATION



On **August 9, 2022**, the **House of Representatives** created a special committee that will tackle policies and programs relating to the production, utilization, and conservation of nuclear energy... the **Special Committee on Nuclear Energy**



CREATION OF INDEPENDENT REGULATORY BODY



NUCLEAR FUEL CYCLE

2022
to
2023

- Front End – will not develop capability
- Fuel Source – reliable and responsible foreign supplier
- Back End - Review options for spent fuel and radioactive waste management

- Provide recommendation for purchasing first reactor core, including its fuel requirements and estimation¹
- Estimate capacity of on-site spent fuel storage and identify strategy for spent fuel storage, transport and disposal
- Develop plans to implement storage strategy, transport capabilities, and funding arrangements
- Provide recommendation on long term strategy on purchasing/developing fuel cycle capabilities¹

¹DOST Project Proposal (GIA)

RADIOACTIVE WASTE MANAGEMENT

- Review options for spent fuel and operational waste management from nuclear power plant
- Support in the Ratification of Joint Convention on the Safety of Radioactive Waste Management and Safety of Spent Fuel Management (*in collab with SC3*)

- Perform waste forecasting for 2500 MW - different combination of reactor designs (PWR/SMR)¹
- Conduct technology selection for management of radioactive waste¹
- Provide recommendation on the location for the Low and Intermediate Level Waste Disposal Repository – establish criteria, site selection, and site evaluation¹ (*in collab with SC5*)
- Support in creating the Radioactive Waste Management Act² (*in collab with SC3*)
- Support in developing the National Policy and Strategy for spent fuel and radioactive waste management² (*in collab with SC3*)
- Support in establishing the RWM Organization and enhancing existing facilities to receive LILW once the NPP start its operation

¹DOST Project Proposal (GIA)

²IAEA Technical Cooperation Project

2028-32
OBJECTIVE

Inclusion of
Nuclear Energy in
the Generation
Mix

2024
to
2028-32

National Workshop on Nuclear Fuel Cycle and Radioactive Waste Management

Objectives:

- To provide **awareness** and **engage** stakeholders on nuclear fuel cycle and radioactive waste management infrastructure.
- To expand and diversify respondents by including **relevant stakeholders and experts**.
- To systematically determine the **most suitable strategy** for the spent fuel and radioactive waste management using criteria that is appropriate to the local situation of the Philippines.

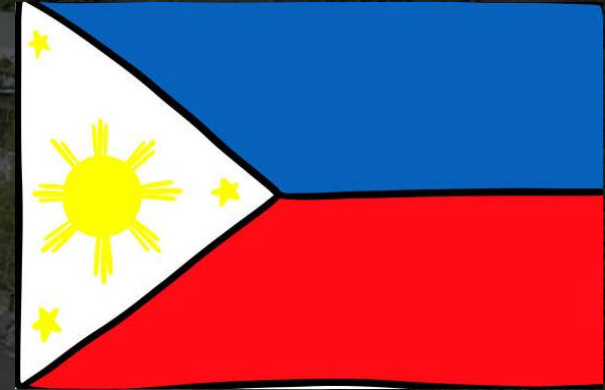
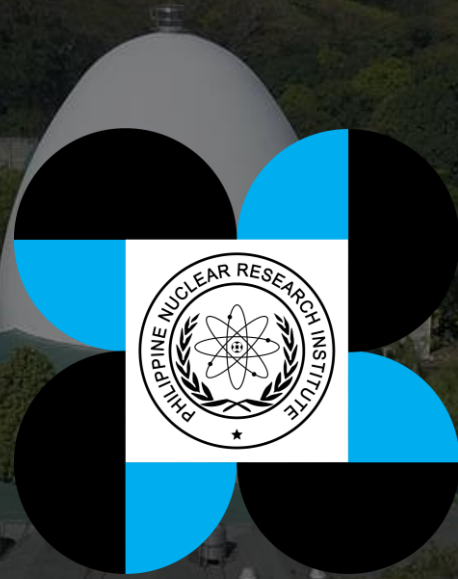


Way forward

- Provide support for the **Ratification of the Joint Convention** on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste
- Provide support in the drafting of the **Radioactive Waste Management Act**
- Provide support in the development of a **National Policy and Strategy for Spent Fuel and Radioactive Waste Management**
- Provide **recommendation for the reactor technology** to be adopted
- Perform **waste forecasting** to estimate the waste generation
- Conduct **technology selection** for the predisposal and disposal management of radioactive waste
- Provide recommendation on the **site** of the LILW disposal facility



PHILIPPINE NUCLEAR RESEARCH INSTITUTE



Thank you for listening!