



LEGISLATIVE RESEARCH SERVICE

QUICK NOTES

Second Regular Session, 19th Congress

Public Hearing of the Committee on Science and Technology joint with the Committees on Civil Service, Government Reorganization and Professional Regulation; Ways and Means; and Finance

Chairperson: Sen. Alan Peter S. Cayetano

1 December 2023, Friday, 1:30 P.M., Recto Room, Senate

Re: The following agenda –

PHIVOLCS Modernization

- **S. No. 2038— Sen. Juan Miguel “Migz” F. Zubiri, Sen. Joel Villanueva, and Sen. Francis “Chiz” Escudero**
- **S. No. 2152—Sen. Jinggoy Ejercito Estrada**
- **S. No. 2156—Sen. Ramon Bong Revilla Jr.**
- **S. No. 2164—Sen. Francis “Tol” Tolentino**

Comprehensive Atomic Regulation/Philippine Nuclear Regulation

- **S. No. 1194—Sen. Francis “Tol” Tolentino**
- **S. No. 1491—Sen. Ramon Bong Revilla Jr.**

Background: PHIVOLCS Modernization

- The Philippine Institute of Volcanology and Seismology (PHIVOLCS), a Department of Science and Technology (DOST) service institute, has the critical mandate of disaster mitigation, focusing on volcanic eruptions, earthquakes, tsunamis, and related geotectonic events.
- Given the Philippines' location in the active Pacific Ring of Fire with 24 active volcanoes, including Taal, Mayon, and Pinatubo, it is imperative that PHIVOLCS is well-equipped with modern facilities and a highly skilled workforce. However, PHIVOLCS faces the challenge of retaining its personnel due to attractive compensation packages offered by other countries and companies.
- The proposed measures aim to enhance PHIVOLCS' capabilities through equipment and facility upgrades, system improvements, better incentives for personnel, and the creation of additional positions to expand the pool of experts. Human resource

enhancements include a new salary scale, retention incentives, and an improved development program.

Highlights of the bills: Senate Bill Nos. 2308, 2152, 2156 and 2164

- The PHIVOLCS modernization encompasses various components, including upgrading physical resources and operational techniques, enhancing volcano monitoring networks, developing early-warning technologies for eruptions, and improving earthquake monitoring systems. It also focuses on long-term protection of built environments, forecasting large earthquakes and tsunami events, establishing a permanent PHIVOLCS building for real-time monitoring, enhancing research and development capabilities, strengthening public information and partnerships with local government units, and improving data and information dissemination services. Additionally, it aims to bolster the Human Resource Development Program (HRDP) and build expertise in volcanology and seismology.
- The HRDP component includes implementing a new salary scale for PHIVOLCS personnel, providing retention incentives, offering scholarships, and fostering regional and international cooperation programs.
- PHIVOLCS will collaborate with local government units for public intermediary functions, information dissemination, awareness campaigns, and technical reviews.
- The institutional modernization of PHIVOLCS will enhance public information, education, and advocacy on earthquake, tsunami, and volcano hazards and risks. This includes establishing a well-equipped learning/training center, implementing a knowledge management system, and employing a multi-channel and multi-directional communication strategy with standardized procedures.
- PHIVOLCS, in coordination with the Department of Budget and Management (DBM) and the National Economic and Development Authority (NEDA), will formulate and oversee the implementation of the PHIVOLCS Modernization Program for an initial three-year period.
- The PHIVOLCS Modernization Fund, with an initial amount of P5 billion, will be created exclusively for the program. This funding will include P2.5 billion released over two years from the National Government's share in the BCDA's gross income. Additionally, loans, grants, bequests, and donations from local and foreign sources will contribute to the funding pool.

Possible points of discussion

- Status and inventory of the current facilities, instruments and equipment of PHIVOLCS;
- PHIVOLCS' plantilla positions and pool of experts given the competitive demand from private companies and abroad; and
- The role of LGUs in information dissemination and awareness campaign.

Background: Comprehensive Atomic Regulation/Philippine Nuclear Regulation

- Senate Bill No. 1194 aligns with the objectives outlined in Executive Order No. 164, entitled: "Adopting a National Position for a Nuclear Energy Program, and for Other Purposes," issued in February 2022. This executive order, based on a comprehensive study and endorsed by the Nuclear Energy Program Interagency Committee (NEPIC), serves as the foundation for the proposed legislation. The bills seek to establish a regulatory framework governing the control, utilization, and application of nuclear energy. The proposed collective measure aims to address various aspects, including nuclear security and safeguards, public health and safety, and environmental protection.
- Senate Bill No. 1491 seeks to harness the potential benefits of peaceful atomic energy applications. These benefits include improving public health and medical practices, safeguarding the environment, adapting to climate change, ensuring food safety, increasing crop production, and fostering product innovation, among others.

Highlights of the bills: Senate Bill Nos. 1194 and 1491

- The bills aim to achieve the following objectives:
 - Establish a legal framework to protect public health, safety, and the environment from the harmful effects of ionizing radiation, as well as ensure the safety and security of radiation sources.
 - Create the Philippine Nuclear Regulatory Commission (PNRC) responsible for regulating the peaceful use of ionizing radiation, including the production, possession, use, import, transport, transfer, handling, and management of radioactive materials.
 - Develop and maintain a regulatory system that formulates and adopts regulations and guidelines for the safe and secure use of ionizing radiation.
 - Enable the Philippines to fulfill its obligations under international agreements related to nuclear non-proliferation, nuclear weapon-free zones, nuclear safety, and security, among others.
- The bills include scope, exemption, and exclusion clauses:
 - They apply to activities involving the peaceful use of atomic energy, radioactive materials, associated facilities, and radiation sources within the Philippines' jurisdiction.
 - They exclude activities exempted from regulatory control through established regulations by the Philippine Atomic Regulatory Commission.
 - They do not regulate sources of non-ionizing radiation.
- The use of atomic energy and ionizing radiation is limited to peaceful purposes, strictly prohibiting activities related to atomic explosives, radiological dispersal devices, or assisting others in such activities.

- The bills establish the Philippine Atomic Regulatory Commission (PARC) as the independent central atomic regulatory body with exclusive authority over safety, security, and safeguards concerning ionizing radiation sources, atomic materials, and radioactive materials, as well as radiation generating equipment.
- The regulatory powers of PARC include imposing minimum requirements to protect public health, safety, and the environment, ensuring the security of atomic and radioactive materials, preventing the proliferation of atomic weapons and atomic or radiological terrorism, and establishing regulations, rules, and orders in line with international standards and best practices. PARC also oversees the technical and financial qualifications of operators involved in atomic activities and ensures their financial protection for liability related to atomic and radiation damage.
- The proposed measures cover various aspects, including radiation protection, transport of atomic and radioactive materials, authorization of facilities and activities, emergency preparedness and response, import and export of atomic and radioactive materials, management of spent and radioactive waste, atomic safety, decommissioning, safeguards, and civil liability for atomic and radiation damage, among others.

Possible points of discussion

1. The advantages and disadvantages of nuclear energy. Its potential to provide a stable and substantial power supply, low greenhouse gas emissions, and a relatively small fuel requirement.
2. Social and public perception of nuclear plants/energy, particularly in the context of the Bataan Nuclear Power Plant. The historical factors, community attitudes, and the role of nuclear energy in the Philippines' energy mix that should be considered.
3. The potential health risks associated with nuclear energy, environmental impacts, and the budgetary implications of nuclear power plant construction, maintenance, and decommissioning.
4. Availability and expertise of professionals and experts in nuclear energy and related fields to provide insights into the country's capacity to safely operate and manage nuclear facilities.
5. Given the unique challenges of radioactive waste management, an assessment of the Philippines' track record in handling hazardous waste, as well as its plans and capabilities for managing radioactive waste, will be crucial.
6. The Philippines' readiness and capability to manage the risks associated with nuclear energy, including disaster preparedness, regulatory oversight, and infrastructure resilience.
7. Worst-case scenario of a nuclear energy malfunction, potential consequences of a nuclear accident, emergency response preparedness, and mitigation strategies to minimize harm to human health, the environment, and the economy. Is the Philippines ready to deal with all of these?