

THE PRIME MINISTER

Decision No. 265/QĐ-TTg of March 5, 2012, approving the Scheme on building research and development and technical assistance capacity for atomic energy development and utilization and safety and security assurance

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Pursuant to the December 25, 2001 Law on Organization of the Government;

Pursuant to the June 3, 2008 Law on Atomic Energy;

Pursuant to the Prime Minister's Decision No. 01/2006/QĐ-TTg of January 3, 2006, approving the strategy for peaceful utilization of atomic energy through 2020;

Pursuant to the Prime Minister's Decision No. 957/QĐ-TTg of June 24, 2010, approving the master plan on peaceful development and utilization of atomic energy through 2020;

At the proposal of the Minister of Science and Technology,

DECIDES:

Article 1. To approve the Scheme on building research and development and technical assistance capacity for atomic energy development and utilization and safety and

security assurance, with the following principal contents:

I. CONTENTS OF THE SCHEME

1. Elaborating a program on scientific research and technological development in the field of atomic energy

a/ Objectives

- To improve national scientific and technological potential in the field of atomic energy, especially building highly qualified human resources for science and technology, including many specialists of international level.

- To support the absorption, mastering, transfer and development of technologies in the fields of radiation and radioisotope application, nuclear power, radiation and environmental safety, nuclear safety and radiation diseases according to the roadmaps set in detailed master plans on development of radiation and radioisotope applications in various socio-economic sectors, and the Orientations for planning nuclear power development through 2030.

- To create many technologies, products and technical services in the field of atomic energy utilization, which are commercializable and capable of boosting the formation of a nuclear technology industry.

b/ Contents

- To conduct application-oriented basic researches in the fields of nuclear physics, nuclear reactor physics, new-generation reactor

technology, accelerated physics, radiochemistry, radiobiology, nuclear medicine, effects of interaction of radiation with matter, and radiation diseases.

- To research into the nuclear reactor technology and relevant equipment of nuclear power plants which are transferred into Vietnam, step by step absorb, master and transfer nuclear power plant design, manufacture, construction, installation, operation and maintenance technologies.

- To research into and develop technologies to produce uranium from domestic ores, manufacture UO_2 ceramic pellets from imported enriched UO_2 powder; manufacture nuclear fuels, and treat radioactive material and manage spent nuclear fuels.

- To research into and develop techniques for inspecting and assuring the quality of nuclear power plants and their equipment; radiation and nuclear safety; radioactivity observation and environmental impact assessment; and radiation and nuclear incident response.

- To research into and develop radiation and radioisotope application techniques and technologies in medicine, agriculture, industry, and natural resources and environment.

- To research into and manufacture a number of preparations and materials with radiation technologies; radiation devices, radiation detection and measurement devices, automated nuclear control equipment and accelerators for import substitution so as to serve and boost the

application of radiation and radioisotopes in various socio-economic sectors.

tasks

During 2011-2015:

- To formulate and implement research schemes and projects to serve the training of human resources in atomic energy; to support and boost radiation and radioisotope application; to build radiation disease research capacity; to increase capacity in assessing and selecting nuclear power and nuclear fuel technologies and technologies for radioactive waste treatment, nuclear power plant construction and installation, and nuclear power project management; to handle and process rare radioactive ores; to inspect and assure the quality of nuclear power plants and their equipment; to build technical capacity in radiation and nuclear safety and environmental impact assessment so as to facilitate the construction of the first nuclear power plant.

- To increase technical capacity and human resources for radiation application research institutions of ministries and sectors and nuclear power research and development and technical assistance institutions.

- To boost international cooperation in research and development activities, thereby training human resources in science and technology for atomic energy research and development agencies.

During 2016-2020

- To formulate and implement research schemes and projects to serve the transfer of

radiation and radioisotope application technologies in various socio-economic sectors, and the creation of import substitutes and radiation disease diagnosis and treatment technologies; to absorb nuclear power technologies and technologies for nuclear fuel manufacture, radioactive waste treatment, spent nuclear fuel management, nuclear power plant construction and installation, and nuclear power project management; to mine radioactive ores for commercial purposes; and to render technical assistance for the operation of the first nuclear power plant.

- To strengthen physical and technical foundations and human resources for nuclear power research and development and technical assistance institutions.

- To expand international relations, research cooperation and technology transfer with nuclear power plant construction partners, thereby training human resources in science and technology and develop a contingent of highly qualified atomic energy specialists.

During 2021-2030

To continue implementing research schemes and investment projects to increase technical capacity and train personnel for the implementation of the Orientations for planning nuclear power development through 2030 and detailed master plans on development of radiation applications in various socio-economic sectors.

2. Developing the Vietnam Atomic Energy Institute (VAEI)

a/ Objectives

To build and develop VAEI up to the regional advanced level, acting as:

- A hi-tech research and development agency in the field of atomic energy, functioning to promote radiation application, develop nuclear power and train human resources.

- An independent national technical assistance agency in charge of quality inspection and assurance, safety and security assurance and environmental protection for nuclear power development.

b/ Tasks

- To develop modern radiation application research directions so as to effectively implement and transfer radiation and radioisotope application technologies in various socio-economic sectors, aiming to create high-quality import substitution products and assuring the competitive production and business as well as export of a number of basic products.

- To form and develop application-oriented basic research directions in nuclear science.

- To build and develop capacity for absorbing, mastering and developing reactor technologies and facilities of nuclear islands in nuclear power plants and technologies for handling and processing radioactive ores and rare elements, nuclear fuel and reactor materials; and for management of radioactive wastes and spent nuclear fuels.

- To build and develop technical assistance

capacity to inspect and assure the quality of nuclear power plants and their equipment and to assure nuclear and radiation safety and radioactive source security; radiation and nuclear measurement standards; radioactivity observation and environmental impact assessment; and radiation and nuclear incident response techniques up to international standards, thus meeting the requirements on the national nuclear power technical assistance agency.

- To build capacity for training human resources in atomic energy to meet development requirements of VAEI and related organizations.

- To develop a system of science and technology businesses operating in the field of radiation application and nuclear power technical services.

c/ Organizational development

- Regarding nuclear power technologies and application-oriented basic researches: To build a nuclear science and technology center which will absorb nuclear power technologies and conduct high-level atomic energy researches and, at the same time, act as the focal point in future cooperation with other countries in nuclear power technologies.

- Regarding technical assistance: To develop the Institute for Nuclear Science and Technology into a technical assistance agency in charge of safety and security assurance and environmental protection for nuclear power development; to develop the Center for Nondestructive Evaluation into a technical

assistance agency in charge of inspection and assurance of the quality of nuclear power plants and their equipment.

- Regarding radiation application: To build 4 radiation application institutes in Hanoi, Ho Chi Minh City, Da Nang and Da Lat to serve the implementation of detailed master plans on development of radiation applications in various socio-economic sectors in different regions in the country.

- Regarding human resource training: To develop the Nuclear Training Center in Hanoi into an institution to train human resources in atomic energy for VAEI and related agencies.

- Regarding technology transfer and services: To develop the Technology Application and Development Company and form science and technology businesses to transfer technologies and carry out production and service activities in the field of radiation application, supply radiation and nuclear equipment and radioactive sources, design reactors, supply nuclear fuels, handle and process radioactive ores and rare earth, and manage radioactive wastes and spent nuclear fuels.

d/ Implementation roadmap

During 2011-2015:

- To implement the project to build a nuclear science and technology center under the Inter-Governmental Agreement between the Socialist Republic of Vietnam and the Russian Federation on the construction of a nuclear power plant in the Vietnamese territory.

- To formulate and implement an investment project to build radiation application institutes in Hanoi, Da Nang and Ho Chi Minh City.

- To enhance technical assistance capacity, meeting the requirements of inspection and assurance of the quality of nuclear power plants and their equipment and appraisal, analysis and assessment of nuclear safety and radioactivity-related environmental impact assessment in the stage of nuclear power plant site and design approval and construction licensing; to manage the operation of the Vietnam-Asian Nuclear Safety Network (Vietnam-ANSN); to render technical assistance for the implementation of the Convention on Nuclear Safety, the Convention on Early Notification of a Nuclear Accident and other relevant treaties.

- To implement the master plan on the national environmental radioactivity observation and warning network and formulate and implement an investment project to build an operational center, regional stations and a national data center within the framework of the Comprehensive Nuclear Test Ban Treaty (CTBT).

- To formulate and implement an investment project to build a nuclear training center with the task of doctoral and master's training, advanced training and training and grant of certificates under the Law on Atomic Energy.

- To implement plans on training human resources to meet development requirements of VAEI, giving priority to human resources in technology assessment and selection; inspection and assurance of the quality of nuclear power

plants and their equipment; appraisal, analysis and assessment of nuclear safety and radioactivity-related environmental impact assessment in the stage of nuclear power plant site and design approval and construction licensing.

- To set up some science and technology businesses operating in the field of radiation application and providing technical services related to nuclear fuels and radioactive waste management.

During 2016-2020:

- To complete the construction of the Nuclear Science and Technology Center and put it into operation to serve nuclear power technology research and development activities. The center will have a new high-capacity research reactor and a synchronous laboratory for researching into nuclear power plant designs, nuclear fuel designs, radioactive waste treatment and reactor materials, and modern laboratories on atomic energy utilization in the fields of materials science, biotechnology and medicine.

- To further invest in radiation application institutes in Hanoi, Da Nang, Da Lat and Ho Chi Minh City up to advanced levels.

- To enhance technical assistance capacity, meeting the requirement of inspection and assurance of the quality of nuclear power plants and their equipment; analysis, appraisal and assessment of nuclear and radiation safety; radiation measurement standards; equipment appraisal and calibration; environmental impact assessment, and radiation and nuclear incident response, in preparation for the safe operation

of the first nuclear power plant.

- To complete the construction of an environmental radioactivity observation and warning administration center and regional stations and put them into operation so as to effectively manage the operation of the national environmental radioactivity observation and warning network.

- To complete investment in the nuclear training center to reach an advanced level and be capable of performing assigned training functions and tasks. To continue implementing plans on training human resources to meet development requirements of VAEI as well as the demand for highly qualified human resources in atomic energy research, development and utilization as well as safety and security assurance, prioritizing those who are specialized in absorbing nuclear power technologies transferred to Vietnam and conduct appraisal for the grant of nuclear power plant operation licenses.

- To expand and develop science and technology businesses which can create a number of radiation and radioisotope application products, technologies and equipment for the domestic market and export; to import nuclear fuels and prepare capacity for absorbing nuclear fuel manufacture technologies, searching and exploring a site for the construction of the national radioactive waste storage establishment and step by step approaching nuclear power plant designs.

During 2021-2030:

- To increase capacity in researching into

nuclear reactor designs, nuclear island equipment as well as the capacity of the national low- and medium-activity radioactive waste burial and storage establishment so as to be able to join foreign partners in designing the other nuclear power plants in the country.

- To build a system of synchronous and modern laboratories on radioactive waste treatment and research into the management of long-lived and high-activity radioactive waste.

- To increase capacity in researching into technologies to produce nuclear fuels from imported enriched uranium, serving the import of a nuclear fuel production chain into Vietnam.

- To increase technical assistance and human resource training capacity to meet the requirements set down in the Orientations for planning nuclear power development through 2030 and detailed master plans on development and application of radiation in various socio-economic sectors.

- To increase the capacity of science and technology businesses to turn out radiation and radioisotope application products, technologies and equipment for the domestic market and export; design nuclear power plants; produce nuclear fuels and build a national radioactive waste storage establishment.

3. Building a first-aid and treatment system for radiation diseases

a/ Objectives

To build a system of grassroots, regional and central radiation disease treatment establishments, which are ready to provide on-

site first-aid and basic treatment to radiation victims.

b/ Tasks

- To study the effects of radiation on humans and the environment; to conduct radiation-related life science research, radiation safety research and medical research in response to radiation-related emergencies.

- To build physical and technical foundations and develop human resources for radiation disease diagnosis and treatment.

- To organize a first-aid system in response to radiation and nuclear incidents.

- To participate in exercising radiation and nuclear incident response plans.

- To train nuclear facilities' health staff in radiation medicine and first-aid in case of radiation and nuclear incidents.

c/ Implementation roadmap

During 2011-2015: To increase research and development capacity and conduct researches in radiation disease diagnosis and treatment. To formulate an investment project to establish and build a Central Radiation Medicine Institute which will conduct scientific research and, at the same time, act as the national radiation disease diagnosis and treatment establishment and render support to lower-level medical establishments when necessary.

During 2016-2020: To implement the investment project on building the Central Radiation Medicine Institute. To procure radiation disease diagnosis and treatment equipment for the Central Radiation Medicine

Institute and Ninh Thuan General Hospital to meet the requirements set by countries transferring nuclear power technologies to Vietnam.

During 2021-2030: To procure radiation disease diagnosis and treatment equipment for provincial-level general hospitals in conformity with the Orientations for planning nuclear power development through 2030.

II. IMPLEMENTATION SOLUTIONS

1. Mechanisms and policies

a/ To complete the formulation and promulgation of a system of mechanisms, policies and legal documents on science and technology development, occupation-based preferential allowances for employees of atomic energy research and development and technical assistance institutions, and radiation disease diagnosis and treatment establishments.

b/ Research institutes, universities, businesses, scientists and technologists, businessmen, organizations and individuals engaged in atomic energy science and technology development activities will be entitled to the highest incentives regarding loans, credit, tax, land use rights, demand stimulation policies and other relevant policies according to current state regulations.

2. Investment and finance

a/ To increase and diversify investment capital sources for the effective and timely implementation of the scheme.

b/ To use state budget funds as follows:

- State budget development investment capital and foreign assistance shall be used for investment in non-business science and technology, health and training units involving in the scheme implementation.

- Annual non-business funding sources: Non-business science and technology funding sources shall be used for the performance of science and technology tasks and implementation of science and technology programs on atomic energy; non-business education and training funding sources shall be used for training human resources in atomic energy; and non-business healthcare funding sources shall be used for the operation of the radiation disease emergency and treatment system.

3. Human resources

a/ To recruit and train sufficient human resources to meet development requirements of VAEI, paying special attention to human resources for nuclear power research and development and technical assistance.

b/ To attach importance on the employment of highly qualified specialists who are Vietnamese or overseas Vietnamese and international specialists in atomic energy training.

c/ To concentrate on setting up leading research groups and training highly qualified specialists and technicians.

4. International cooperation

a/ To expand and intensify bilateral and

multilateral cooperation with foreign countries, organizations and individuals in the field of atomic energy.

b/ To take the initiative in elaborating and implementing programs and projects on international cooperation, especially with countries with an advanced nuclear industry so as to make use of their assistance in terms of experiences, intellectual and financial resources and investment so as to develop atomic energy science and technology in a fast, strong and sustainable manner in Vietnam.

c/ To combine international cooperation in building nuclear power plants with nuclear power research coordination, technology transfer and human resource training.

III. ORGANIZATION OF IMPLEMENTATION

1. The Ministry of Science and Technology shall:

a/ Assume the prime responsibility for, and coordinate with related ministries and sectors in, approving a list of schemes and projects under the program on scientific research and technological development in the field of atomic energy for every year and every 5-year period; to select through contests or appoint scheme and project managers; evaluate and check the program implementation results; transfer and apply technologies created by the program; and annually report the program implementation results to the Prime Minister.

b/ Set up an inter-sectoral executive board

to organize the implementation of the program on scientific research and technological development in the field of atomic energy. The board will be headed by the Minister of Science and Technology who will decide on the board's composition, working regulation and assisting office.

c/ Assume the prime responsibility for, and coordinate with related ministries, sectors and localities in, approving investment projects on building research and development capacity for related research and training institutions.

d/ Assume the prime responsibility for, and coordinate with related ministries and sectors in, formulating mechanisms, policies and legal documents for science and technology development in the field of atomic energy.

e/ Approve, and direct the implementation of, the investment project to build technical assistance capacity in the inspection and assurance of the quality of nuclear power plants and their plants; equipment, safety and security assurance and environmental protection for nuclear power development during 2011-2015 and 2016-2020, in conformity with the requirements set down in the Orientations for planning nuclear power development by 2030.

f/ Assume the prime responsibility for formulating and submitting to the Prime Minister for approval and for implementing the investment project to build a nuclear science and technology center.

g/ Assume the prime responsibility for, and coordinate with related ministries and sectors

in, submitting to the Prime Minister for approval special treatment mechanisms and policies for atomic energy research and development and technical assistance agencies.

h/ Assume the prime responsibility for, and coordinate with the Ministry of Home Affairs in, approving VAEI's payroll.

2. The Ministry of Industry and Trade shall:

a/ Propose a list of research schemes and projects on application of radiation and radioisotopes in industries and technological sectors and on nuclear power.

b/ Direct investors of nuclear power plant projects in incorporating research and human resource training contents into nuclear power plant building contracts signed with foreign partners.

3. The Ministry of Health shall:

a/ Assume the prime responsibility for, and coordinate with the Ministry of National Defense and the Ministry of Science and Technology in, studying and formulating a project to establish and build the Central Radiation Medicine Institute.

b/ Assume the prime responsibility for, and coordinate with related provincial-level People's Committees in, approving projects to establish and build radiation disease diagnosis and treatment departments under provincial-level general hospitals of localities where nuclear power plants are expected to be built.

c/ Formulate a list of schemes and projects on research and application of radiation and

radioisotopes in medicine.

4. The Ministry of Education and Training shall assume the prime responsibility for, and coordinate with the Ministry of Science and Technology and related ministries and sectors in, training human resources to meet the demands of atomic energy research and development and technical assistance agencies.

5. The Ministry of Finance shall assume the prime responsibility for, and coordinate with the Ministry of Planning and Investment, the Ministry of Science and Technology and the Ministry of Health in, allocating annual funds for the implementation of the Scheme's contents according to the law on the state budget.

6. Related ministries, sectors, localities, organizations and individuals shall propose radiation and radioisotope application and research schemes and projects under the program on scientific research and technological development in the field of atomic energy.

Article 2. This Decision takes effect on the date of its signing.

Article 3. Ministers, heads of ministerial-level agencies, heads of government-attached agencies and chairpersons of provincial-level People's Committees shall implement this Decision.-

For the Prime Minister
Deputy Prime Minister
NGUYEN THIEN NHAN