

THE PRIME MINISTER

Decision No. 899/QĐ-TTg of June 10, 2011, approving the detailed plan on development and application of radiation in meteorology, hydrology, geology, mineralogy and environmental protection through 2020

THE PRIME MINISTER

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 application of atomic energy for peaceful purposes through 2020;

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

At the proposal of the Minister of Natural Resources and Environment,

DECIDES:

Article 1. To approve the detailed plan on development and application of radiation in meteorology, hydrology, geology, mineralogy and environmental protection through 2020, with the following principal contents:

1. GUIDING VIEWPOINTS

1. To step up the development and application of radiation in meteorology, hydrology, geology,

mineralogy and environmental protection in order to raise the effectiveness of the state management of basic survey, natural resource management and environmental protection.

2. To develop and apply radiation in meteorology, hydrology, geology, mineralogy and environmental protection in a comprehensive manner in terms of technology, equipment, human resources and safety assurance measures; at the same time, to closely link and combine the development and application of radiation in these sectors with other sciences and technologies in order to tap their advantages and achieve high application effectiveness.

3. The State invests in and encourages organizations and individuals to invest in the development and wide application of radiation techniques; and focuses on consolidating physical foundations, renewing technologies and training human resources for research, development and application of radiation and assuring radiation safety in the field of natural resources and environment.

II. OBJECTIVES

1. General objectives

To develop physical foundations and raise capability for application of radiation in hydro-meteorological research; survey, exploration and assessment of natural resources; and environmental protection, up to the level of advanced countries in the region; to contribute to raising effectiveness of basic survey, natural resource management and environmental protection to serve socio-economic

development; to achieve the objectives and fulfill the tasks set out in the strategy for and the master plan on development and application of atomic energy for peaceful purposes through 2020.

2. Specific objectives

a/ By 2015:

- To build up basically complete physical foundations and train specialized personnel in radiation and isotope techniques for the units of the Ministry of Natural Resources and Environment according to their assigned functions and tasks, covering:

+ Building laboratories and training specialized personnel in isotope techniques for paleo-climatological and neo-meteorological research, contributing to raising the quality of forecasts.

+ Building laboratories and training personnel in isotope techniques for hydro-meteorological research and water resource survey and assessment in the northern and southern regions.

+ Building new and upgrading existing laboratories and training personnel in nuclear techniques in geological survey and exploration, mineral search and analysis of geological samples, in order to raise geological divisions geological research, mineral exploration and search capabilities.

+ Upgrading laboratories and training personnel for the Vietnam Environment Administration in isotope techniques and analysis by nuclear techniques, in order to raise its environmental observation and analysis capability and serve environmental observation

and pollution control work.

- To organize research and application of isotope and nuclear techniques in the following areas:

+ Hydro-meteorology: Initially applying isotope techniques in meteorological (both paleo-climatological and neo-meteorological) research to serve weather, natural disaster and climate change forecasts; applying isotope techniques in hydrological research and survey of erosion and deposition in river beds, reservoirs, hydropower dams and ports.

+ Water resources: Applying nuclear geophysical techniques in survey and assessment of reserves and quality of water sources in key economic regions, major urban centers and geographical areas with urgent needs.

+ Geology and mineralogy: Developing and applying radiation measurement and nuclear analysis techniques in research, additional survey and clarification of the geological composition and structure; identifying zones vulnerable to geological catastrophes or with an geological environment unfavorable for building major works, urban centers and residential quarters; discovering, searching and exploring minerals, geothermal sources, mineral water and hot water sources.

+ Environment: Completing the set of 1:200,000-scale natural radioactive environment maps for major urban centers and residential quarters; applying nuclear analysis and isotope techniques in identifying polluted areas and degrees of pollution and areas of pervasive pollution caused by the use of chemicals in industrial and agricultural

production and pollution from solid waste landfills; and completing feasibility studies on and experimental treatment with radiation techniques of environmental pollution caused by gaseous and liquid wastes.

b/ By 2020:

- To complete and upgrade laboratories and train personnel in isotope and nuclear analysis techniques in meteorology, hydrology, geology, mineralogy and environment up to the standards applied in advanced countries in the region.

- To identify groups of practically effective isotope and nuclear analysis methods and techniques and related equipment and technological systems for investing in the development and application of these methods and techniques in research, survey and assessment of natural resources and environment, satisfying the following criteria:

+ Widely applying isotope techniques in practical hydro-meteorological research and observation, and soil erosion and deposition researches.

+ Applying isotope techniques in most of the tasks of survey and assessment of water resources performed nationwide.

+ Widely applying radiation measurement and nuclear analysis techniques in geological research and survey; scaling the possibility of occurrence of geological catastrophes and assessing the geological environment unfavorable for building major works in important areas up to requirements; discovering, exploring and surveying minerals and searching for geothermal, mineral water and hot water sources.

+ Completing the set of 1:200,000-scale natural radioactive environment maps for the whole national territory; widely applying nuclear analysis and isotope techniques in environmental pollution observation and control; widely applying radiation techniques in the treatment of environmental pollution in major industrial parks and sources of pollutants nationwide.

III. MAJOR TASKS

1. To enhance technical capability and train human resources to meet the needs for application of radiation in research, survey, exploration and assessment of natural resources and environment

a/ To build new and upgrade existing physical foundations and train human resources in isotope and nuclear techniques in research, survey, exploration and assessment of natural resources and environment, including:

- Building one isotope laboratory for paleo-climatological research, simulation of the climate in geologically past times in the Earth and forecast of developments of modern meteorology; building physical foundations and renewing equipment and devices for application of nuclear techniques in hydrometeorological observation.

- Building two isotope laboratories (one in the North and one in the South) for the survey, discovery and assessment of water resources.

- Building one laboratory for application of nuclear techniques with special-use and modern machines and equipment in analysis and identification of geo-tectonic age and analysis

of geological samples; consolidating physical foundations and renewing equipment and devices used in geological survey and assessment and mineral search and exploration; equipping systems of mobile machines and equipment for on-site geological assessment and mineral search and exploration.

- Building one isotope laboratory in combination with building new and upgrading existing observation centers for surveillance and control of environmental pollution, including marine environmental pollution.

- Training highly qualified personnel to manage and effectively operate new physical foundations and equipment.

b/ To receive new and modern isotope technologies and techniques and nuclear techniques, and train personnel to quickly analyze samples of large quantities with a high sensitivity and accuracy, meeting requirements of survey, research and assessment of natural resources and environment.

2. To step up the application of radiation to research, survey, exploration and assessment of natural resources and environment.

a/ To apply isotope techniques in meteorological research into cloud formation, climate and weather changes in order to raise the quality of forecasts;

b/ To apply isotope techniques in research into soil erosion and deposition in river basins, irrigation and hydropower reservoir beds and ports, meeting socio-economic development requirements; to study and find water leaks in dikes and dams, sources and volume of water flowing into mineral mines and foundations of

construction works;

c/ To apply isotope techniques in quantitative water resource research and forecast with high accuracy, covering:

- Subgrade composition, changes in water isotope constituents and isotopes of elements soluble in natural water sources, identification of age, origins, hydraulic relations, reserves and water balance of water sources, including mineral and hot water.

- Identification of origins of water-soluble compounds, movement and mechanism of spread of materials in aeration zones and saturated zones.

- Movement of the salty-fresh boundary in water-bearing beds, identification of origins and mechanism of spread of pollutants in groundwater sources.

d/ To research and develop combined modern geological and nuclear geophysical methods to be widely applied in:

- Geological, tectonic, paleo-geographical, paleo-biological and geo-environmental research and survey.

- Research of geographical catastrophes, discovery and observation of various types of catastrophes caused by contemporary geological movements such as soil erosion, landslide and active ruptures; land subsidence and cracks, and determination of positions and areas of zones highly vulnerable to land subsidence and slide; assessment of critical zones for key regions.

- Geological survey, mineral exploration and search; application of advanced nuclear techniques in analysis of geological samples.

e/ To research and apply radiation

technology to treatment of exhaust gases from thermal power plants, persistent organic substances in wastewater and land and residual dioxin in the environment in Vietnam, and extermination of germs and harmful microbes:

f/ To apply techniques of measuring natural gamma radiation and radon and methods of analyzing the environmental radioactivity in determining natural radiation intensity and assessing annual total radiation dose equivalent in service of the survey and research of radioactivity in the natural environment;

g/ To apply isotope and nuclear analysis techniques in researching and observing the spread of pollutants into the environment surrounding waste landfills, industrial parks, chemical and plant protection drug warehouses, mineral exploiting and processing establishments using toxic and hazardous chemicals, etc.; to discover and observe sources of surface water pollutants in river basins and sea areas, so as to devise solutions for preventing and controlling pollution both on the ground and in the sea.

IV. SOLUTIONS

1. Regarding investment:

a/ The State intensifies state budget investments in procuring sufficient equipment and upgrading physical foundations for the units of the Ministry of Natural Resources and Environment for promoting research and transfer of applied radiation technologies in service of basic survey and state management of natural resources and environment;

b/ Ensuring budget funds for the tasks of research and application of radiation techniques

in meteorology, hydrology, geology, mineralogy and environmental protection;

c/ Promoting the utilization and diversification of funding sources and effective raising of investment capital from different economic sectors for developing the application of radiation and nuclear techniques in the field of natural resources and environment.

2. Regarding science and technology:

a/ Receiving advanced and modern technologies and equipment; replacing old and obsolete technologies and equipment in order to raise the efficiency of research and application of radiation and nuclear techniques and technologies in meteorology, hydrology, geology, mineralogy and environmental protection;

b/ Giving priority to state- and ministerial-level scientific and technological projects on application of radiation and nuclear techniques in geological survey and assessment, mineral exploration, discovery and assessment of groundwater sources, meteorological research, identification of sources of environmental pollutants, and research, development and application of nuclear techniques for combined sea and island development;

c/ Assuring radiation safety for humans and the environment under regulations in the research, development and management of spent radioactive sources and radioactive wastes, adhering to the principles of assuring and controlling the quality of radiation research and application activities.

3. Regarding human resource training and development:

a/ Intensifying human resource training and development. Attaching importance to training highly qualified workers and experts in application of radiation in meteorology, hydrology, geology, mineralogy and environmental protection;

b/ Organizing human resource training and development through practical activities of scientific and technological projects on application of radiation in meteorology, hydrology, geology, mineralogy and environmental protection, in conformity with the approved objectives, contents and tasks. Prioritizing the training of technicians for units directly performing professional tasks.

c/ Combining training with research and transfer of modern technologies and techniques in the practical application of radiation at units.

4. Regarding international cooperation:

a/ Expanding and intensifying international cooperation with foreign countries, territories, organizations and individuals with advanced scientific and technological levels in order to receive technologies and train human resources under international cooperation programs and projects on application of radiation in meteorology, hydrology, geology, mineralogy and environmental protection;

b/ Closely and regularly cooperating with the International Atomic Energy Agency (IAEA) in researching and developing technical applications, training human resources and transferring technologies under IAEA's programs on technical cooperation and training for developing countries;

c/ Enhancing coordination and information

exchange within the framework of multilateral cooperation mechanisms and treaties in order to raise the capability to observe, warn and respond to impacts of climate change, environmental pollution or transboundary radiation incidents.

5. Regarding mechanisms and policies:

a/ Organizations and individuals that research and apply radiation and nuclear techniques in the sector of natural resources and environment are entitled to the State's incentives and supports under regulations on preferential treatment of highly qualified experts and workers in the field of atomic energy; --

b/ The State considers providing budget supports for scientific and technological institutions investing in building infrastructure and procuring equipment of laboratories; and for establishments applying radiation and nuclear techniques in the sector of natural resources and environment under approved investment projects.

V. ORGANIZATION OF IMPLEMENTATION

1. The Ministry of Natural Resources and Environment shall assume the prime responsibility for, and coordinate with related ministries and sectors, provincial-level People's Committees in, organizing the implementation of this plan; organize the performance of the

tasks of researching and applying radiation in areas under its management; periodically review and report the implementation to the Prime Minister.

2. The Ministry of Science and Technology shall perform the state management of assurance of radiation safety for activities in the field of atomic energy; monitor and review the implementation of detailed plans for specific fields based on the objectives and tasks of the master plan on development and application of atomic energy for peaceful purposes through 2020.

3. The Ministry of Planning and Investment and the Ministry of Finance shall allocate investment resources for the implementation of this plan under the Law on the State Budget.

4. Provincial-level People's Committees shall coordinate with and assist ministries and sectors in implementing this plan in their respective localities.

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

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

For the Prime Minister
Deputy Prime Minister
HOANG TRUNG HAI