

Vietnam Is Moving Ahead with Nuclear



Dr. Tran Huu Phat

Dr. Phat is the Former Chairman of the Vietnam Atomic Energy Commission (VAEC) and is now the Chairman of its Council of Science, Technology, and Training. This interview was conducted recently via e-mail between Dr. Phat and Marjorie Mazel Hecht.

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Question: Vietnam has a very impressive nuclear program, and I think the progress you have made in planning for two to four 1,000-megawatt nuclear reactors by 2020 should be very encouraging for other developing countries. What stage are you in now, and when do you expect to start construction?

Phat: The Investment Project of Ninh

Thuan Nuclear Power Plants was approved by the Vietnam National Assembly at the 6th Session Meeting held in Hanoi from 20 Oct.20-Nov. 26, 2009. According to a schedule proposed by the utility owner, Vietnam Electricity (EVN), the construction of the first unit among four units could be started by 2014-2015.

Question: Your nuclear program has proceeded very systematically, looking at projected growth and electricity supply for the entire country, and seeing that a shortage could arise by about 2015.

As I understand it, the plan is to meet this by importing electricity, coal, and gas, and by developing nuclear as an indigenous energy resource, to reduce energy dependence on other countries. How did you arrive at the balance of your power supply choices?

Phat: In order to meet the national electricity demand in the future, Vietnam has to choose a harmonious solution, which consists of energy saving, optimal exploitation of indigenous primary energy resources (including small hydro power and renewables) coal, electricity imports, and nuclear power.

Question: What percentage of your power do you plan to be produced by nuclear by the year 2050?

Phat: It is expected that by the year 2030, about 15-20 percent of Vietnam's electricity needs will be supplied by nuclear power.

Question: How will you meet the manpower requirements for building and operating nuclear reactors? Are you recruiting and training engineers and technicians?

Phat: Manpower is currently a big problem of Vietnam while starting the nuclear project. The Ministry of Education and Training has completed the National Long-Term Program for training manpower to meet the demand of the first nuclear project. In addition, we also are considering policies and measures to attract and recruit overseas Vietnamese and foreign

Headquarters of the Vietnam Atomic Energy Commission in Hanoi. ▶



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▼ The site of the planned first nuclear power plant in Ninh Thuan province, where construction is expected to start in 2014. The reactor type will be a "third or third-plus generation" conventional reactor, according to Dr. Phat. The first two plants in the project are expected to cost 200 trillion dong (about \$11.2 billion).



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Vietnam has a long-term manpower training program to meet the needs for staffing its ambitious nuclear program. Here, the opening ceremony of the second nuclear power training course for engineers in Hanoi, May 2007.

experts in the fields concerned.

Question: What about the regulatory and safety infrastructure?

Phat: Our regulatory and safety infrastructure is in a state of being improved step by step in order to fulfill the requirements of the nuclear program. Namely, in coming years we will pay great attention to the development and improvement of the state management system and national legal framework. All of these works are implemented within the Atomic Energy Law, which was adopted on June 3, 2008, by the National Assembly and came into force on January 1, 2009.

Question: Can you say something about the international nuclear collaboration that you are engaging in?

Phat: International cooperation plays a very significant role and is considered as an important resource for ensuring safe and effective operation of the first nuclear power plants in Vietnam. At present, Vietnam is a Member State of the IAEA (International Atomic Energy Agency), Regional Cooperation Agreement (RCA) and the Forum for Nuclear Cooperation in Asia (FNCA), and has signed intergovernmental agreements on the peaceful use of nuclear energy with India, Korea, China, Russia, and Argentina.

In the meanwhile, we also have close relations with Japan, France, Korea, and Russia in the field of nuclear power. Recently, nuclear cooperation between Vietnam and the U.S.A. has been estab-

lished. Vietnam joined many important international conventions and agreements such as the NPT (Non-Proliferation Treaty), CTBT (Comprehensive Test Ban Treaty), the Nuclear Safeguards Agreement, and so on.

Question: Have you selected a reactor type?

Phat: The Investment Project for the Ninh Thuan Nuclear Power Plant recommended that the reactor types which we should choose are those belonging to the third and third-plus generation. However, the final decision will be confirmed either by the Finance Secretary or bid.

Question: What about the IAEA cooper-

ation you've received in nuclear. I know that the IAEA's program has been helpful in using radioisotopes to breed new rice strains.

Phat: As a Member State, Vietnam has been receiving the assistance of the IAEA in various areas, fruitfully contributing to the research and development of atomic energy in the country. Medicine and agriculture are two domains that have benefited very much from this assistance.

For the cycle 2009-2011, the IAEA has provided us with three technical assistance projects related to nuclear power, namely VIE/4/015, Developing Nuclear Power Infrastructure; VIE/9/011, Improving the Capacity for the Site Characterization and Evaluation of New Nuclear Installation; and VIE/9/013, Strengthening the Technical Capacity of the Radiation and Nuclear Safety Regulatory Body. These proved to be very significant to setting up the nuclear power program in Vietnam.

Question: Vietnam's population is now about 85 million, heading toward 98 million by 2020. From what I've read, 90 percent of the population supports nuclear power, which is very good! What kind of educational programs has the Atomic Energy Commission carried out?

Phat: I am not able to determine the exact percentage of those Vietnamese who support nuclear power, because so far we have not conducted any national level survey on this issue. But I can confirm that most Vietnamese people agree with the approval of the National Assembly on nuclear project.



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Bilateral cooperation is a central part of Vietnam's nuclear program. Here, a Japanese delegation at a 2009 seminar of the Vietnam Agency for Radiation and Nuclear Safety.



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The opening ceremony of Vietnam's International Exhibition on Nuclear Power in 2008.

In order to attain the present success, since early 1996 with the aid of various foreign companies from Japan (Toshiba, Hitachi, Mitsubishi), Korea (Kepco), Canada (AECL), France (EDF, Areva), Russia (Rosatom), and China (CGNPC), a great number of international seminars on nuclear power have been held in Hanoi. There, hundreds of nuclear scientists gathered from all the countries.

In parallel, we organized many nuclear power exhibitions around the country, in particular, in Ninh Thuan province where the first nuclear power plants are to be sited. The participation at these exhibitions of the well-known companies from Japan, Korea, France, Russia, China, and India were very significant and highly appreciated.

The public education activities are continuously conducted under many other forms such as mass media, publication of documents and booklets on nuclear power, organizing the visits of high-ranking officials to nuclear power plants in Japan, Korea, France, and the U.S.A., etc.

In close cooperation with our Japanese partners (JAIF, Toshiba) and the Technology University in Hanoi, the VAEC organized many training courses for those key people from the elec-

tricity utility, EVN, who will directly join the Ninh Thuan Nuclear Project. Inside VAEC we also have established a training center focussing on radiation protection and other topics related to nuclear safety.

Question: Nuclear research began in Vietnam in the Atoms for Peace days, and you had one of the first Triga research reactors, built by General Atomics in Dalat, which began operating in 1963 at 250 kW. But then the war came. In 1980, the Russians restored the Dalat research reactor, and uprated it to 500 kW. The 1960s were a time of great optimism, especially for nuclear. It is good to see that that optimism has survived in Vietnam. Did some of your nuclear staff get their start on the Triga reactor?

Phat: Yes, several of our staff, who got their start at the Triga reactor, have stayed in Dalat and worked for that reactor until their retirement. However, most of our staff, who participated in the restoration and successful restart of the uprated Dalat reactor, have graduated from universities of Vietnam and former socialist countries.

Question: When was the Vietnam Atomic Energy Commission established?

Phat: The Vietnam Atomic Energy Commission (VAEC) was established by the Government on April 26, 1976. This is a research and development institute, which at present belongs to the Ministry of Science and Technology (MOST). Its functions are determined as conducting fundamental and applied research, technology development in the field of atomic energy; assisting the state management of atomic energy; and also providing technical support on nuclear safety and radiation protection.

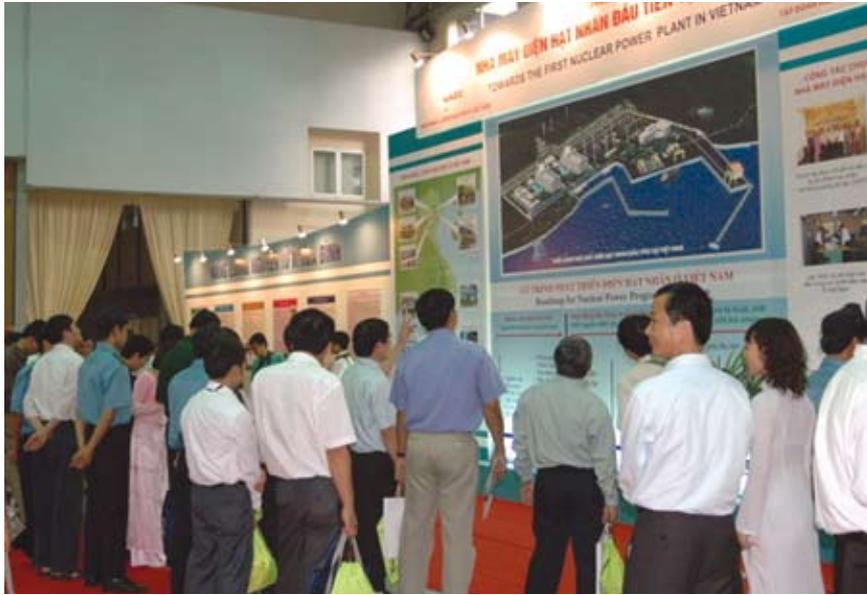
Question: What kind of activities now go on at the Dalat reactor?

Phat: The Dalat reactor with 500 kilowatts of power is now used for limited purposes: nuclear research, development of some techniques, training scientific personnel, radioisotope production, and technical services.



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Poster for the Vietnam Nuclear Power 2008 exhibit.



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The 2008 nuclear exhibit attracted international suppliers and crowds of Vietnamese.

cated a Eurasian Land-Bridge, using advanced rail technologies, from the east coast of China to Rotterdam, with many side links, water projects, and industrial development centers, including nuclear, along the way...

Nuclear power is essential if we are to develop the entire world population, and raise living standards. So I think that what Vietnam is doing will be a real inspiration to those countries that aspire to go nuclear, but are not as advanced as Vietnam, and I would like to get news of your nuclear program to other countries.

Phat: Thank you for your encouraging comments. I would like to mention that the Ninh Thuan Nuclear Power Project is only the first one of the National Long-Term Nuclear Program. However, it plays the crucial role for the whole nuclear program. In this respect we must do the best for its success.

Question: Will you build another research reactor to keep up with the development of the nuclear program?

Phat: At present the New Research Reactor Project has been studied by VAEC and will be submitted to the Government as soon as possible.

Question: The spirit of your “Doi Moi Policy”—innovation—is a very optimistic view, looking ahead to provide for the advancement of the entire country using the most advanced technologies. Are there other projects besides nuclear that come under the Doi Moi Policy?

Phat: The Doi Moi Policy has opened up a new period for Vietnam since 1986 with rapid economy development. Today Vietnam has become an equal member of many international and regional organizations, and as well has close relations with most nations in the world.

The nuclear power project is only one among many other national programs that the Government deals with in the process of industrializing and modernizing the country.

Question: The political organization I am a part of, the Lyndon LaRouche movement, has campaigned for many years for development programs and a just economic order. LaRouche and his wife, Helga Zepp-LaRouche, have advo-



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◀ The Second International Nuclear Power Exhibition in 2006 in Hanoi drew 6,600 Vietnamese visitors, including 200 Parliament members, with exhibits from five countries.

▼ Attendees at the 2007 nuclear power training course for the Electricity Corporation of Vietnam, which took place in Hanoi at the Electric Power University, in cooperation with Japan.



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