Kamalvandi: Safeguards Agreement ignores post-war circumstances

Iran holds 'firm legal position'

INTERVIEW

Iran's nuclear dossier, from its inception, was transformed into one of the epicenters of political and nontechnical decisions, actions, and outlooks. This trajectory, over several past decades, engendered labyrinthine conditions both for the nation and for entities overseeing nuclear activities. Iran, throughout all the years it was exposed to sundry threats, resolutions, sanctions, and bombardments, endeavored to evince to the global community that its nuclear program never veered toward militarization and atomic armament production, nor will it. Yet, it requires nuclear energy — like any other country — as one of the paramount avenues for fulfilling diverse needs, and since it attained the capability to meet these needs indigenously by relying on internal prowess, it shall not capitulate to Western excessive demands and egocentrism.

Six months after the bombardment of Iran's nuclear facilities by America and the Israeli regime, an interview transpired with Behrouz Kamalvandi, spokesperson and deputy for international, legal, and parliamentary affairs of the Atomic Energy Organization of Iran (AEOI) concerning the organization's latest activities on one hand, and the nuclear dossier's recent evolutions on the other; the translation of a portion thereof follows below.

The illustration shows US special envoy Steve Witkoff (bottom-L), Head of the Atomic Energy Organization of Iran (AEOI) Mohammad Eslami (top-C), and US Secretary of State Marco Rubio (bottom-R) among various other photos, including undamaged Iranian nuclear sites and US military equipment.
● 731

Behrouz Kamalvandi

The Atomic Energy Organization of Iran (AEOI) bears responsibilities vis-à-vis the nation's needs, especially in energy and particularly in the electricity domains. As you are well aware, one of the organization's salient duties entails furnishing part of the nation's needs via nuclear power plants. So, please elucidate the organization's actions and programs, given the nation's relatively harsh electricity conditions, in this realm.

KAMALVANDI: You raised a very good question. The nuclear industry is an industry that, in all dimensions of our lives, whether directly or indirectly, possesses a role and its presence is palpable. For example, the field of nuclear medicine is predominantly related to diagnostic, therapeutic, and palliative issues, as well as the production of radiopharmaceuticals, which are well known to everyone. However, if we desire to examine all the dimensions associated with the nuclear industry, they usually divide it in the world into two sectors of "energy" and "non-energy" issues.

In the energy sector, the principal subject returns to nuclear reactors and the production of atomic electricity, which today has acquired immense significance throughout the world. For instance, the United States, which possesses the greatest number of nuclear power plants (approximately 100 power plants), decided to increase this number to approximately 400 power plants; that is, nearly fourfold. In fact, most countries of the world pursue an augmentation of the capacity of their nuclear power plants. Beyond this, the subject of small modular reactors is also raised, which, for diverse reasons including safety, technical, legal, and economic considerations, has attracted attention and compelled the world to move toward this direction with haste.

The importance of nuclear energy derives from the fact that the electricity generated by it possesses exceedingly high compatibility with the environment. One of the objectives of the Paris Agreement is to see the volume of carbon emissions reach zero and energy production produce no pollution by 2050. It is correct that in the domain of renewable energies, such as solar and wind, considerable resources exist; however, these resources are not considered "base load," and one cannot perpetually trust and rely upon them because in the absence of sunlight or wind, the production of electricity also ceases. Nuclear energy is not of this nature and is sustainably available at all times.

Therefore, a country like Iran, which possesses a very good capacity in the nuclear field, in conditions in which the world hastens to increase its nuclear power plant capacity, must be at the forefront of this path. Three recognized models exist in the International Atomic Energy Agency (IAEA), which are software tools, and with the input of data, they calculate the required volume of nuclear electricity for a country. These three models include Message, WASP, and Leap. According to our evaluation, one model proposes 8%, another 10%, and the third 12%. The average of these numbers indicates that the share of nuclear electricity in the country ought to be approximately 10%. This volume assists in strengthening the country's energy security and in supplying reliable and stable electricity without blackouts. It also diversifies the country's energy basket to resolve the problem of the electrical shortage that currently exists.

In other words, if the nominal capacity of the country's power plants is approximately 80,000 to 100,000 megawatts, it means that at present, we must possess between 8,000 and 10,000 megawatts of atomic electricity. We currently possess only approximately 1,000 megawatts, and a deficiency of nearly 9,000 megawatts exists that must be compensated. This subject has been projected in the 20-year plan so that we reach a capacity of 20,000 megawatts.

The Atomic Energy Organization has, in the fields of agriculture and the production of pharmaceutical products, also programmed extensive actions and programs. Please elaborate regarding the objectives of these programs and the latest actions in this field.

In the non-energy sector, three principal domains exist; first, the domain of human health, which includes nuclear medicine, and is familiar to everyone. Many times, radiopharmaceuticals have been utilized for diagnosis and treatment. Second, the field of agriculture, which begins at the stage of seed production and enables seed improvement. Especially because our country is located in an arid region, it requires the creation of adaptation against drought. Nature, as designed by God, arranges this adaptation in the long term and across decades or even centuries; that is, it may take a long time for a seed to adapt itself to environmental conditions. We can, through nuclear technology, accomplish this prolonged process in several months; that is, we can produce a seed that appears as if environmental messages have reached it and as if it is aware that it confronts water scarcity and must prepare for such conditions.

For example, at present, we have the "Kian" rice seed, which previously was harvested at approximately 2 tons per hectare and has now reached more than 8 tons; that is, it has increased fourfold and possesses high tolerance against drought. At a further stage and during the growth period of the product, such as the dates of the country's South, pests exist that can be eliminated not through chemical fertilizers and toxins, but through nuclear irradiation, without creating risk for humans or the product. The use of chemical pesticides causes harmful substances to remain in the product and creates health problems for humans, but the irradiation method possesses no such effects.

Furthermore, after the harvest of the product, this technology can also be utilized. For example, the codling moth is a pest that destroys approximately one-third of the product, but with nuclear methods, it can be controlled. Or, for example, the aflatoxin toxin, which becomes problematic for Rafsanjan county's pistachios, is eliminated through irradiation.

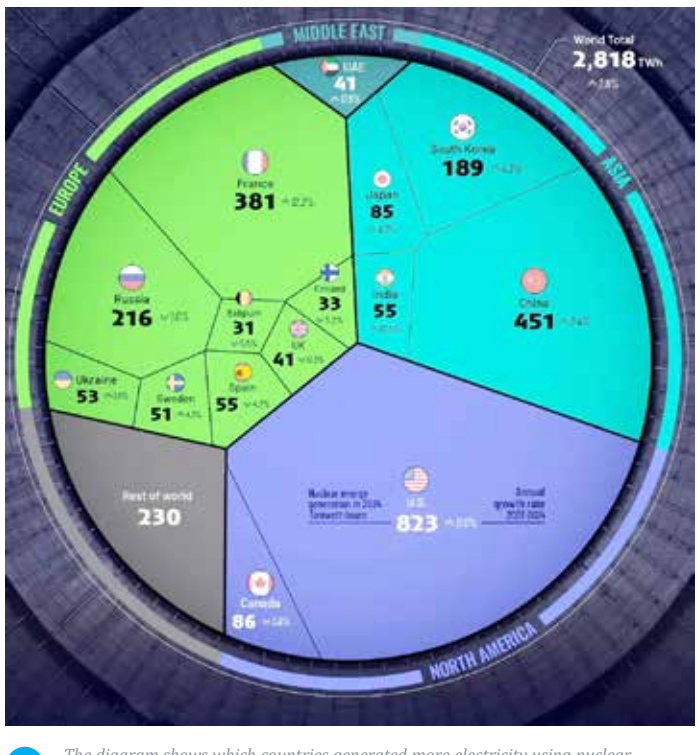
In the domain of product warehousing, irradiation increases storage duration and reduces spoilage. At present, the wastage of the country's agricultural products is not small; with an annual production of approximately 140 million tons of product, between 20% to 30% of it is lost in various processes. These nuclear methods can considerably reduce this damage.

The AEOI, for many years, has borne an important role in maintaining a portion of public health through the production of radiopharmaceuticals. What exactly is its role? What programs has the organization envisioned to increase the country's capacity in this field?

At present, the country's situation in this domain is very favorable. We produce approximately 73 types of radiopharmaceuticals, of which five or six are entirely nationally produced and have been exceedingly effective in the treatment of cancers. As you know, the country is confronting a cancer surge, and at present, we possess approximately 350,000 to 400,000 cancer patients. These patients require the utilization of radiative and irradiation methods, which can, independently or in combination with chemical treatments, produce effective outcomes.

In the industrial domain as well, there is practically no industry that does not require nuclear equipment. From the steel and petrochemical industries to refineries and even the cement industry, all require diagnostic equipment such as heat measurement, densitometry, and level measurement, which cannot be performed by conventional tools and are possible with nuclear equipment. For example, the precise measurement of the temperature of a furnace with 2,000 degrees is performed through this method. Also, in the domain of groundwater condition detection, aquifer depth, and similar methods, nuclear technology possesses extensive applications.

In the environment as well, significant issues such as microplastics are raised. The oceans, because of the entry of large volumes of



The diagram shows which countries generated more electricity using nuclear reactors in 2025.
● ENERGY INSTITUTE

> In other domains as well, extensive applications exist, such as in the military sector — of course not nuclear weaponry, but in the domain of defense capacity. One example is submarines that operate with nuclear fuel and possess long-term underwater endurance. The higher the enrichment of atomic fuel, the shorter the interval required for its replacement. At present, France and the United States possess submarines whose fuel is replaced once every 30 to 40 years.