

**SPEECH ON**

**The Peaceful Use of Nuclear Technology  
and the Role of the IAEA**

**at**

**50th Annual Conference of the**

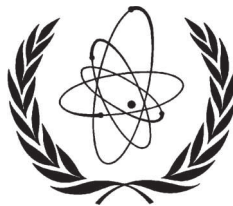
**JAPAN ATOMIC INDUSTRIAL FORUM**

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**INTERNATIONAL ATOMIC ENERGY AGENCY**

Good morning, Ladies and Gentlemen.

I am very pleased to speak at the 50th Annual Conference of the Japan Atomic Industrial Forum.

On behalf of the International Atomic Energy Agency, I congratulate you on the 50th anniversary of this important Conference.

The IAEA has been marking its 60th anniversary. From the 26 countries which had ratified the IAEA Statute when it entered into force in July 1957, we have grown to an organisation with 168 Member States that spans the globe.

Ladies and Gentlemen,

When I last addressed this distinguished Forum, in April 2015, I mentioned that I was finalising my *Report on the Fukushima Daiichi Accident*. It was published in August that year, along with five technical volumes by international experts. This was intended to enable all countries to learn the lessons from the accident so they can make their nuclear facilities safer. The IAEA Fukushima Daiichi Report is used by all countries as the key reference document related to the accident.

The Fukushima Daiichi accident was very serious and its effects are still being felt by many people in Japan. It was a powerful reminder that there can be no grounds for complacency about nuclear safety in any country. The IAEA helped all countries to learn the lessons from this accident and to act on them.

Since the accident, Japan – and other countries with nuclear power programmes – have taken vigorous steps to reassess all aspects of safety and to make necessary improvements.

I have visited many nuclear power plants all over the world and seen for myself that numerous additional safety features have been added. New nuclear power plants now under construction, many of which are known as *Generation 3 Plus*, have been designed with advanced safety features.

Some countries, including Japan, reformed their regulatory systems after the accident to better meet international standards. The need to maintain a robust safety culture is now universally recognised.

As I have often said, every country that uses nuclear technology has a responsibility to create a robust framework for safety and security. This is a national responsibility that cannot be outsourced. But effective international cooperation is also essential. The IAEA has a vital role to play in enabling countries to share experiences and best practices.

For example, the IAEA establishes and constantly updates Safety Standards. They are not legally binding, but are used voluntarily by almost all countries to protect people and the environment from harmful effects of ionizing radiation. The Agency sends peer review missions made up of top international experts to countries, at their request, to give professional advice on safety issues. The IAEA helps developing countries to enact nuclear laws, establish a regulatory framework, and train safety staff. As depository of the *Convention on Nuclear Safety*, we

hosted a major conference in Vienna in the last two weeks in which some 80 countries participated.

Ladies and Gentlemen,

The IAEA continues to assist Japan and Fukushima Prefecture.

IAEA teams which were sent just after the accident conducted measurements of radioactivity in Fukushima, Tokyo and nearby areas. They also provided advice on food safety. We sent a fact-finding mission, and, later, international peer review missions, on the decommissioning of the Fukushima units and on off-site remediation.

We participated at a senior level in the *International Forum on the Decommissioning of the Fukushima Daiichi Nuclear Power Station* in Fukushima in April 2016, and will do so at the second Forum later this year.

IAEA experts are assisting their Japanese counterparts in analysing seawater, sediment and fish samples.

Japan provides periodic updates on progress in recovery efforts at Fukushima. We add our assessments and publish the reports on our public website. The most recent report was published last month. The provision of data originating from Japan, with the IAEA's assessment and distributed through the IAEA network, is very useful to ensure transparency and facilitate understanding in all countries.

The Agency and Fukushima Prefecture continue to work together on research into radiation monitoring, off-site decontamination and management of radioactive waste.

Ladies and Gentlemen,

Let me say a word about the important issue of decommissioning.

Decommissioning at Fukushima Daiichi will be a long process and international cooperation will be very important.

Japan will not be the only beneficiary. All countries with nuclear power will have to deal with the issue of decommissioning nuclear power plants at the end of their operating life.

In fact, throughout the world, 158 nuclear power reactors have already been permanently shut down, or are undergoing decommissioning. More than half of all the operating reactors are coming towards the end of their planned life span, and many will be retired from service within the next 20 years.

Decommissioning is therefore an issue of growing importance and lessons learned from Fukushima Daiichi will benefit many countries over the coming decades.

I am pleased that Japan has welcomed experts and companies from many nations to participate in the decommissioning of the crippled reactors, as advised by the IAEA.

Ladies and Gentlemen,

The Fukushima Daiichi accident severely damaged public confidence in nuclear power and prompted some countries to move away from nuclear.

Globally, however, use of nuclear power continues to grow.

There are presently 449 nuclear power reactors in operation in 30 countries. Another 60 reactors are under construction. Around two thirds of the new reactors being built are in Asia. Nuclear power was once seen as the preserve of developed countries, but today many developing countries are interested in it.

Nuclear power is one of the lowest-carbon technologies for generating electricity. A tried and tested technology, it can help to improve energy security, reduce the impact of volatile fossil fuel prices and mitigate the effects of climate change.

The IAEA's annual projections, which are based on information from Member States, indicate continued growth in nuclear power in the coming decades. But it remains to be seen whether that growth will be modest or significant.

An important IAEA *International Ministerial Conference on Nuclear Power in the 21st Century* will take place in Abu Dhabi in October and November this year. The venue is significant because the United Arab Emirates is about to become the first new country to join the nuclear power club for around 30 years. I encourage representatives of the Japanese nuclear industry to participate in the Conference.

Ladies and Gentlemen,

Exciting technological developments in nuclear power are in the pipeline. Remarkable research is being done on new generations of reactors which will be safer and will generate less waste.

Fast reactors and closed fuel cycles, for example, could make nuclear power even more efficient in the coming decades.

This innovative technology has the potential to ensure that energy resources which would run out in a few hundred years, using today's technology, will actually last several thousand years. Fast reactors also reduce the volume and toxicity of the final waste.

Small and medium-sized, or modular, reactors are another fascinating area of development. Around 50 innovative concepts for these types of reactors are at various stages of research and development. Four countries are already building them.

Ladies and Gentlemen,

In order to meet the world's growing energy needs in future, we will need to make optimal use of all the sources of energy available.

It is clear that renewable sources of energy such as wind and solar power will play an increasingly important role. Technology is progressing rapidly in these areas as well.

But nuclear power is best suited to provide the steady supply of baseload electricity needed to power a modern economy.

It is up to each country to decide whether or not to use nuclear power. If countries decide to add nuclear power to their energy mix, the IAEA's role is to help them do it safely, securely and sustainably.

We provide detailed practical assistance to countries in many areas, from energy planning to site selection, legal and regulatory matters, technical training and safe operation of reactors, through to decommissioning.

Ladies and Gentlemen,

We are perhaps best known in Japan for our work in nuclear power, for the assistance we provided after the Fukushima Daiichi accident, and for our efforts in relation to North Korea's nuclear programme.

But, in fact, our mission – *Atoms for Peace and Development* – is much broader than this.

In the past six decades, the Agency has helped to improve the health and prosperity of millions of people by making nuclear science and technology available in health care, energy, food and agriculture, industry and other areas.

The IAEA is active in helping countries to achieve the Sustainable Development Goals adopted by world leaders in 2015, including those concerning poverty and hunger, human health, energy, climate change and the protection of the oceans.



Transferring knowledge and expertise is at the centre of our approach. The aim is to help countries develop the capacity to train their own future generations of nuclear specialists.

Let me highlight just a few IAEA activities that contribute to the 2030 Sustainable Development Agenda.

The *first* area I wish to mention is human health, and, in particular, cancer control in developing countries. This is an important focus of the IAEA's work.

It is estimated that, by 2030, over 21 million people will be diagnosed with cancer every year. Around 60 percent of all new cancer cases will be recorded in developing countries, and that is where around 70 percent of cancer-related deaths will occur.

Great progress has been made in understanding and treating cancer in developed countries such as Japan. But in developing countries, a cancer diagnosis is often still a death sentence.

The situation is especially bad in Africa. Around 80 percent of Africa's one billion people have no access to radiotherapy and related cancer services at all.

The IAEA is working to change that. Together with partners such as the World Health Organization, we help countries to devise comprehensive cancer control programmes.

Our technical support focuses on nuclear medicine and imaging technology, and radiotherapy. We provide education and training for health professionals and sometimes supply equipment. This work truly saves lives.

*Second*, food security.

The IAEA makes a direct contribution to increasing food supplies by developing new varieties of staple crops such as rice and barley which are higher-yielding and more resistant to drought and disease.

This is done through radiation-induced mutation techniques.

By applying radiation, it is possible to accelerate natural plant mutation and develop new varieties of crops more quickly than through traditional plant breeding methods. This builds on a natural process and does not involve genetic modification of the plants.

In Myanmar, for example, new varieties of rice have greatly increased farmers' incomes.

*Third* – perhaps surprisingly – birth control for insects.

This is important in combating pests that cause human and animal diseases and can destroy entire crops of fruit and vegetables.

The IAEA makes available something called the sterile insect technique. This involves sterilising male insect pests, such as tsetse flies or fruit flies, by applying radiation.

The sterile insect technique saves countries many millions of dollars per year and protects farmers' livelihoods. We have also made it available to countries affected by the Zika virus to help them combat the *Aedes mosquito*, which spreads the virus.

The IAEA is unique within the UN system in having specialist nuclear applications laboratories in Seibersdorf, near Vienna.

These offer training to scientists, support research in human health, food and other areas, and provide analytical services to national laboratories. We also have environmental laboratories in Monaco.

Since 1958, more than 48,000 scientists and engineers have held fellowships and scientific visitor positions through the IAEA technical cooperation programme, both at our laboratories, and in the facilities of our partners around the world.

Ladies and Gentlemen,

Japan is a very important partner for the IAEA, and many people throughout the world follow developments in the nuclear sector in Japan with great interest.

I am often asked how I see the future of nuclear power generation in Japan. People ask this question because developments in Japan affect their own countries' nuclear policy, public opinion, economic development and views on climate change. I reply that, despite the Fukushima Accident, Japan continues to have advanced nuclear technology and nuclear power remains part of its energy mix.

I am very grateful for the active support of Japan for the IAEA's activities in peaceful uses, such as cancer control, the fight against the Ebola and Zika viruses, and the long-overdue modernisation of our nuclear applications laboratories near Vienna.

However, I see great potential for further cooperation, for example in the area of cancer therapy. Japan possesses cutting-edge technologies in which many other countries may be interested. The IAEA can provide training to experts keen to use the latest equipment, and help countries to strengthen their radiation safety infrastructure, which is essential to protect patients and operators.

I also encourage Japanese researchers, engineers, and in particular young and female professionals, to participate more actively in IAEA conferences, seminars and expert meetings, and to consider job opportunities at the IAEA. There is high demand everywhere for top experts in the nuclear field. I encourage Japanese industry representatives here today to consider more actively how Japan can work more closely with the IAEA and the international community.

Ladies and Gentlemen,

Let me state by way of conclusion that the Agency is committed to preventing the spread of nuclear weapons and helping countries to use nuclear power if they wish to.

We attach great importance to helping developing countries to gain access to modern technology in the peaceful nuclear field, and to use it to significantly improve the quality of life of their people.

And we greatly value our cooperation with Japan in achieving those goals.

Thank you.